# ART &

# TRANSDISCIPLINE

# IN MEXICO

**VOL.1 -2019**

ENGLISH VERSION

**bioscénica**
cuerpo digital y transdisciplina

BIOSCÉNICA. 20 YEARS
MX-AR COLLABORATION NETWORKS
PERFORMING ARTS, SCIENCES AND TECHNOLOGY
ART AND SCIENCE IN MEXICO

# bioscénica

## Presents

### *Art & Transdiscipline in Mexico*
### *Vol. 1*

This article collection gathers contributions from people engaged in different ways with Bioscénica's journey over the last 20 years.

Art, science, technology, education, performance, community, collaboration, empathy are the key concepts in this company's work. To us, a transdisciplinary approach means willingness to get involved, to venture beyond knowledge spaces we recognize as our own, to build with the other new possibilities to modify and be modified.

This first volume -of many, we hope- provides an account of the first steps that brought us this far, of the academic and artistic networks woven as a result of our horizontal research creation methodology.

We appreciate the support Bi / BBVA Bancomer Foundation Project for the program Plataforma Bioscénica 2018, which includes this present edition, in digital bilingual format.

We wish to thank our collaborators who kindly contributed with their texts and reflections, and those who responded to the open call, with the conviction that following volumes will throw light on other aspects of this growing and expanding collaborative experience in Mexico and Latin America.

IMAGE: RETROSPECTIVE MEMORY <<< *EVD'58*

**IMAGE:** RETROSPECTIVE MEMORY <<< *DESCONFIGURACIONES*

# ARTS, SCIENCE AND TECHNOLOGY IN MEXICO

Bioscénica rises as the result of laboratories, groups and companies active since 1999, both independently and framed in public institutions, producing live arts and technologies creation, research and experimentation projects. In Mexico, it laid the foundation for a transdisciplinary articulation through the design of methodologies, curatorships and international festivals. With *Translab, Cuerpo y Tecnología* as the originating precedent (created at Medialab Program at Centro Multimedia / Centro Nacional de las Artes), we keep holding the purpose of giving value to the empirical knowledge gained through art production in the last 15 years of uninterrupted co-creation (1999-2014). Currently, Bioscénica combines these efforts promoting technology live arts with a poetics of its own, in the making for the last 20 years.

# The Notion of the Living
## Art, Science and Free Technology
## International Festivals*

**MINERVA HERNÁNDEZ TREJO**
BIOSCÉNICA

Mexico is home of a constantly growing community that explores beyond traditional techniques, combines them seeking new forms through very different approaches.

The game, the party, the infinitely small and the large-scaled, the insistent search of new options, community processes, they all relate to pieces present in several contemporary international festivals. Among them, *Transpiksel 2016* (the first edition hosted in Mexico City) found a vacant niche, where the living and self-reinvention transcend disciplines.

In these festivals, the body becomes a medium not only of reflection but of experimentation, a trigger of possibilities: the living reveals underlying secrets, materiality lets go of its former importance, experience and the community take over as a starting point.

I will single out two events held in Mexico in the past years, to then frame *Transpiksel Mexico 2016*, focused on knowledge sharing from the standing point of art, science and technology.

In April 2010, the first '<u>Encuentro de Artes Performáticas y Tecnología: Liveness: protésis, gesto y metáfora</u>' aimed to produce epiphanic detonators for reflection and anticipation of new models, not only of creation, but as we say, of a *transcorporal, delocalized, prosthetic and collective subject*.

*Text first published in Revista de la Facultad de Artes y Diseño / UNAM: Artediseño 3, awarded with 2017 Arte Editorial 4/4 prize in category: Art, given by Cámara Nacional de la Industria Editorial Mexicana (CANIEM 2017).



2012 2015 2016
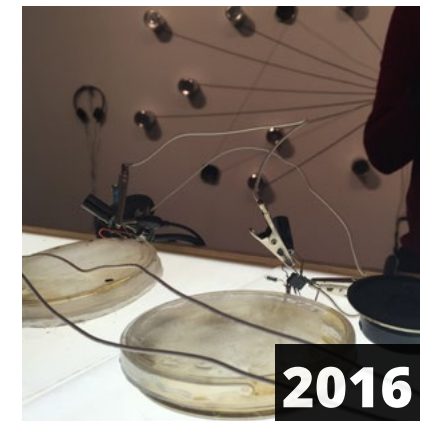
This event sought to open shared spaces for reflection, dissemination and analysis on theater, dance and/or performance that use digital technology in close relation with the body. It attempted to achieve experience and knowledge exchanges with the international community.

Tool learning was not this event's focus, it rather emphasized on thought and sharing between international specialists and Mexican artists, resourcing to a transdisciplinary methodology[1] of experimental nature, with the task of finding dynamic knowledge engines and mechanisms for active participation.

The second reference is '<u>Encuentro de Artes Performáticas, Ciencia y Tecnología: Efusión: código y producción de sentido</u>' which took place in December 2015 in San Luis Potosí. Here the topic revolved around new technologies' ability to offer hybrid models of corporeity, generating dissenting subjectivities from modern normativity.

Under this view, the technological **device** is understood as a **catalyst** for new possibilities and expressive languages that nourishes the artifact; and as a device that **embodies** an expressive dimension impossible to achieve with traditional stage tools. Consequently, the transdisciplinary scene seeks to become an expressive aesthetic 'event' where human and device are indivisible, perhaps not ontologically but indeed in the realm of expression, mutually redimensioned and multiprojected.

1. Supported by program PADID: *Cartografías: teoría, creación y experiencia*.
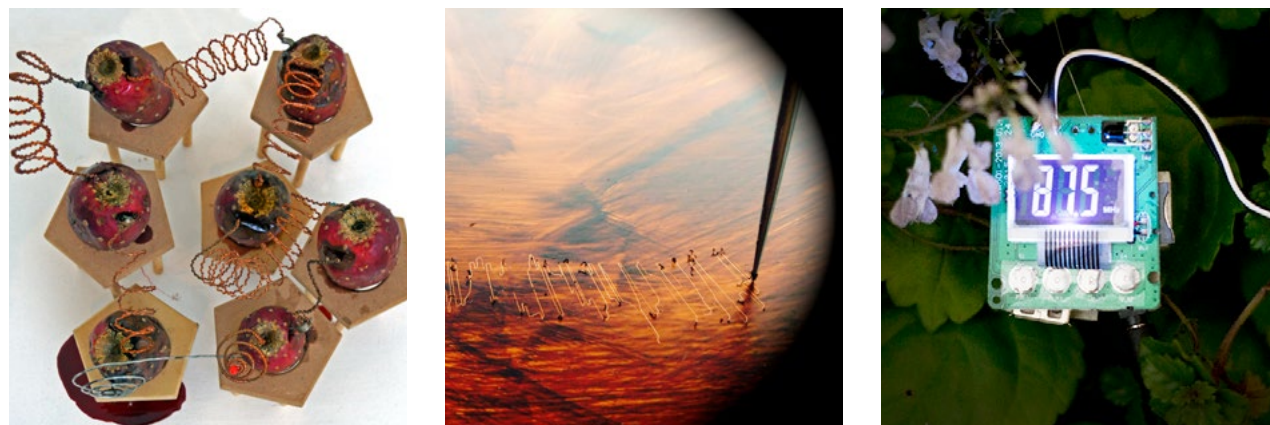
A new eloquence and dramaturgy emerge thanks to the fact that these artificial devices act as **transducers of our unknown gesture** and as process makers of new symbolic material, thus providing an innovative form of perception and communication that questions us, challenging us beyond our cultural or expressive limitations.

More than an international festival, *Transpiksel* became an experience where artists, creators, engineers, scientists, inventors and makers converge to share their knowledge.

Here the task we set ourselves was to work for the common good, to expand the technology we use for different artistic practices toward an open territory. The proposal we formulated in Mexico emphasized the need of reflection on the use we give to new media.

*Transpiksel Mexico* was held September 5 to 13, 2016, offered 18 workshops, 12 conferences, 14 live acts and one collective exhibition, Transpiksel brought together 47 artists from 8 countries in 7 different venues in Mexico City. This first edition was carried out by Arte+Ciencia group from Universidad Nacional Autónoma de México (Facultad de Filosofía y Letras) and independent collective Bioscénica, in close collaboration with Facultad de Artes y Diseño (FAD / UNAM), Xochimilco campus, with support of Secretaría de Cultura, FONCA, Instituto Nacional de Bellas Artes, Ex-Teresa Arte Actual, Centro Cultural de España en México, Fundación Cultural Hersúa, Fundación Telefónica
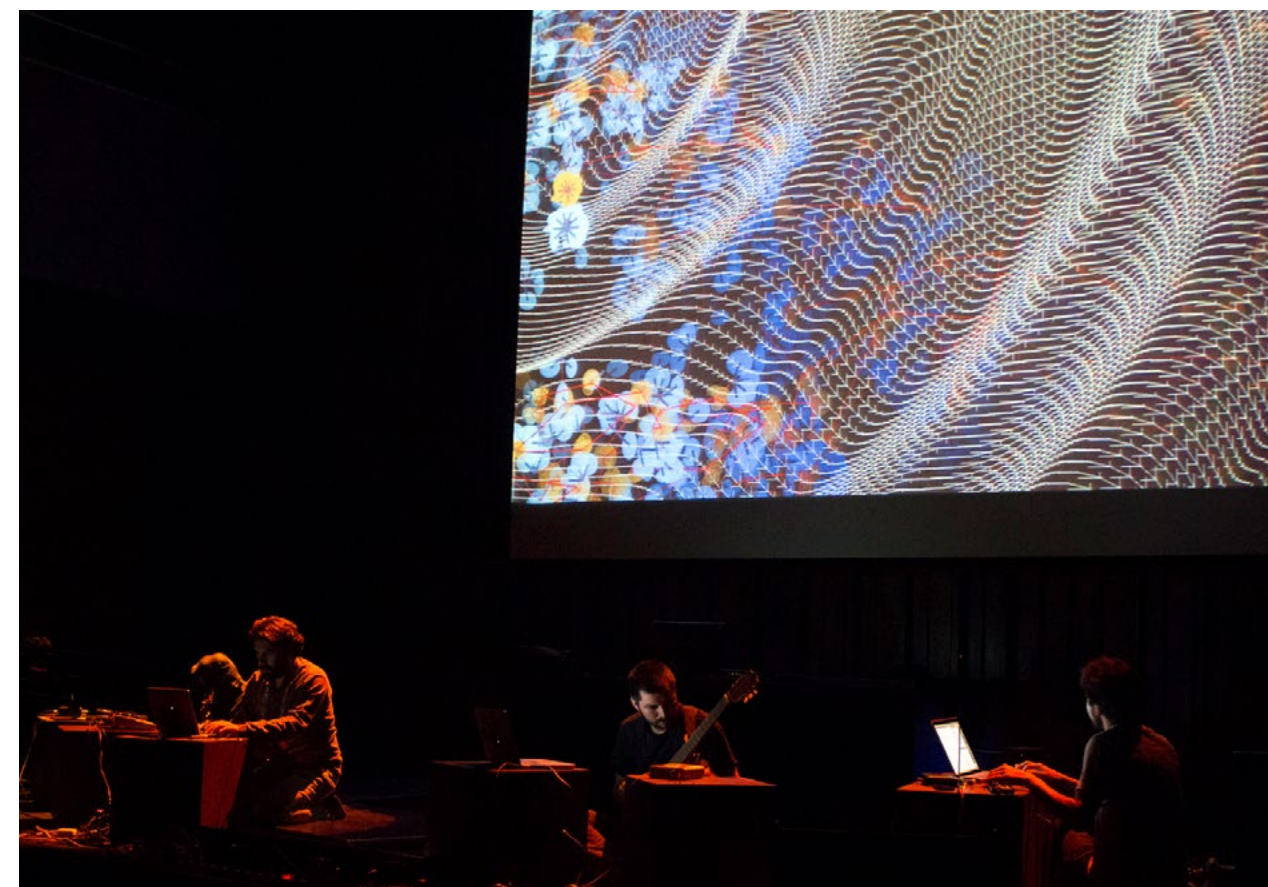
through its education program, Corporación Universitaria para el Desarrollo de Internet 2, Casa Tepepan, among many others.

Finding a community of creators and inventors willing to share their knowledge source-openly (so to speak), allows us to seek beyond authorship and property in art.

A free and collaborative space was born here, where processes are shared in the fertile soil provided by the transdisciplinary encounter with art. Science and technology come close to a magical act, not only because of its intrinsic possibility of creating or revealing different realities, but they also raise the flag of common good in a historical moment where individualism prevails.

**Do it yourself, do it with others** is a call to break through our own limits, it is an invitation to grow together. To give unexpected uses to what surrounds us is a form of protest, a search for freedom. Technology use is transformed, it becomes an ally, we turn its utility into 'our' utility, thus we invent vanishing points, necessary horizons to become ourselves within the collective.

In a country so full of contrasts, appropriations naturally take place, tools are means, and means become tools with no permissions asked; the idea, the process is an open call to joy, to the unknown. A kind of Serendipity emerges here, each finding is nourished. Each

experimentation grows new research lines, generating pieces with no boundaries. Spontaneous crossings rise, eurekas, stimuli, questions, new possibilities come from playing, from trial, error and invention. Whoever likes to experiment finds their home here, a home we build together. Who could have imagined that disciplines would be back where they started, unseparated?

As Peter Greenaway would reply when I suggested this idea to him in an interview held in 2000 at Museo Palacio de Bellas Artes, before the opening of his exhibition *100 objects to represent the world*: 'We returned home'.

*Transpiksel* erases the limits, it's essentially collaboration, it's a form of resistance, it takes place among friends, accomplices, it's a party that has just begun. A land so fertile that, just like water, it reaches the least expected places: wherever we meet, ideas flourish.

Here we propose, we build, we share. **'Me'** fades out and **'we'** emerge with greater force .

This community has gone beyond the boundaries of mere common spaces and seeks to recognize and strengthen knowledge transmission on the small scale, looking for new ways of perceiving the environment in order to figure out how to make a significant contribution from the trenches of science and art.
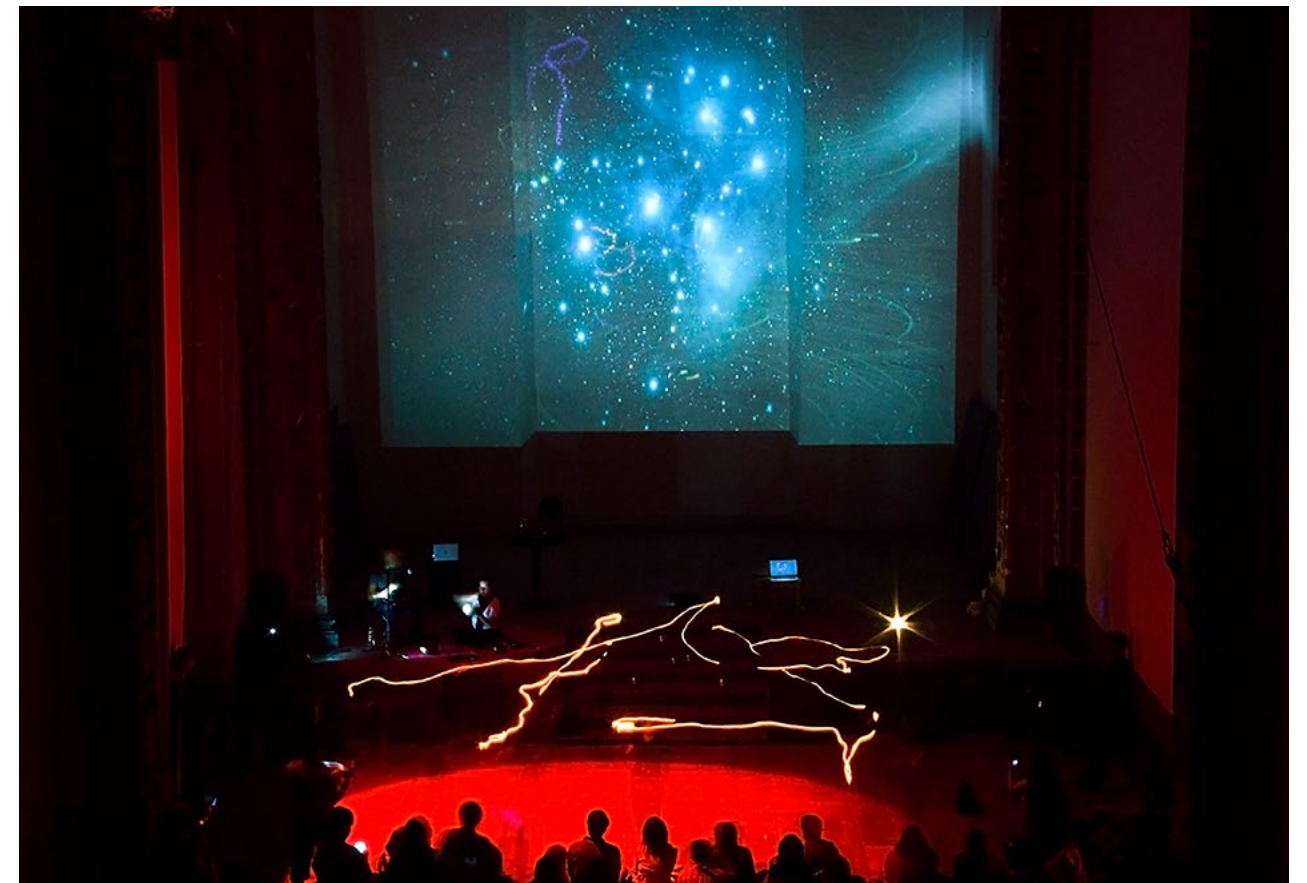
Chances are that *Transpiksel* will become a **permanent laboratory**, with no limits, hoping to weave a collaboration network that formed a new skin for a world full of cracks. We imagine ways to heal our relationship with the world.

The more options the market puts out -surprisingly, not reflecting any concern for common good-, the more unnecessary devices are produced, only achieving to lead us away from each other. That is why every new *Transpiksel* edition seeks to highlight specific geolocal problems, to define strategies we believe important.

In November 2016, *Transpiksel*'s precedent *Piksel* invited artists from a dozen countries to Bergen, Norway to carry out a new edition. The central theme is marine world, which raises many questions: Are the fish we eat being 'feminized' due to pollution? How can we create an alternative communication network in the Post-Internet era? How to read the data the seas provide us? Is the ship a new tool for artistic mobility? Is it possible to carry out prototypes with ZERO-emission?

Biotechnology is no longer just a topic for scientists. Experimental artists also research biological, biopolitical and bioefficiency issues that affect society as a whole. Bioethics concerns us all.

As conscious citizens, artists pose these questions to the general public through art pieces, performances and workshops where everyone is invited to take part.

Piksel16 ZERO-level focuses on the biological and social aspects of the sea as sustainable environment. ZERO refers to: Zero-emissions, Zero-waste, Zero-energy, Zero-pollution, Zero-plastic, Zero-waste. Furthermore, ZERO promotes bio-efficiency, bio-ecology, marine heritage, sustainable maritime transport, water as a creative canvas and civil commitment.

When so many arriving proposals reach beyond their own disciplines, a turmoil is generated due to the present collective experiment taking place. All certainty on how we approach, understand, assimilate what we are grasping/learning is suspended. Here, the interdisciplinary gives way to transdisciplinarity. We seek to submerge participants in a quest for something yet nonexistent, from theory to practice, where the only manual is oneself. The viewer needs to be more and more active, here the spectator is part of the construction itself, becoming a transforming agent.



Precisely, the aforementioned festivals seek to entangle and incite new collaboration circuits, whether dealing with research, creation and/or experimentation. These events offer different ways to create community and share knowledge from experience, theory, participation and creation with a sensitive vision toward the environment and the other, hence the relevance of the living as a guiding principle.

●

More information: http://transpiksel.bioscenica.mx

# Soft Acceptance or Refractory Life in Digital Performance

**MYRIAM BEUTELSPACHER ALCÁNTAR**
UNIVERSIDAD NACIONAL DE TRES DE FEBRERO / BIOSCÉNICA

...............................................

***Experience is the measure
of all things***
Fernando Broncano [1]

...............................................

The promises implied in digital culture scientific fiction often lead to false imaginaries, idealizing the Human as media transcendent, reduced to storable data, tending to prove that the physical body is obsolete, and virtualized reality more convincing than reality itself. Live arts call on these imaginaries whenever the presence of the spectator /performer /interactor is taken as mere biodata or digital input, a tendency I believe exposes an ontological issue. That is to say, our notion of the body is shifting toward an idea of a 'digital' format existence. In this regard, if body-computer relationships necessarily require data input (commonly sensing vital signs) in order to process code, for instance aesthetically manipulating data in real-time, then how could this reduction of singularity be questioned? How plausible has it been to express the qualitative universe of human presence with quantitative digital processes? How to restore genuine substance to human experience in the digital age?

...............................................

***Electronic mirrors represent
us as we want to be, but also
as what we are not. They show
us artificial bodies incapable
of dying, and doing so they
satisfy our utopia** in effigie*[2]
Hans Belting [3]

...............................................

⬅

I have reached out to technology for its connective, collective potential. My artistic activity doesn't grow from the settings but from an intuitive conjugation that recovers certain arsenal of immaterial tools the body withholds in itself.

Along six years of acting training techniques I observed that dramatic action could be nourished by the digital medium for its symbolic construction potential. But it was as a consequence of my education as designer that I landed at Centro Multimedia, a place devoted to electronic art research at Centro Nacional de las Artes, Mexico. While working there since 2002, my daily activity was Internet-related. Over a decade, I was able to observe Mexican artists at work in the field of robotics, virtual and augmented reality, generative images, electronic interfaces and interactive systems for the screen. The body-technology concept seemed to be ignored as, in either playful or experimental environments, technology was the single standing protagonist.

## Tactics of resistance

In this context, as En-ACT collective, we created net-art piece *Artificial /Espejo*[4] showcased at Centro Cultural de España in the framework of Juego Doble (Double Game), a 2004 exhibition. Although the piece presented a screen format, it was set up coupled with Marcel.lí Antúnez Roca's performance work *Transpermia*. Collective member and philosopher Liliana Quintero wrote five hypertext essays that explored the notion of 'being in the world', breaking down the relationship between natural and artificial. Her thesis resourced to the Greek *tekhné* and to the concept of *poiesis* in order to think electronic art's instrumental task from different paradigms. In that theoretical-critical scaffolding resonated the philosophical warnings on the dangers of technical seduction in postmodernity. Standing before Internet's overwhelming predominance of the image we considered implementing two different tactics of resistance: shock aesthetics[5] and disobedient uses of technology[6]. We appropriated advertising design and mainstream visual aesthetics as weapons to create conceptual contrasts between recognizable forms and unexpected contents.

...............................................

***In order to dislocate the nature
of technique, conventional tactics
require modification. It is certain
that, as art moved from the ritual
scope to the political, regulating
institutions emerge. In a way, the
work of art becomes destined, as
Benjamin rightly observed, to a
shock aesthetics.***
Liliana Quintero[7]

...............................................

⬅

We discussed how new media impacts were not only transforming human communication but also had direct effects on the body and the experience. At that time, *Artificial*'s deepest reflections struck a chord with me. I was going through the experience of leaving behind my theatrical body to the point that, when working on the computer, I felt I was blocking part of my proprioception. As a result of this project, I understood where that sense of partition was coming from when dealing with interface design and, ultimately, it defined my art making-thinking.

The world of electronic art suddenly revealed its bias. The great orthopedics of biopolitical society that emerged with the Nation-State consisted in introducing disciplinary technologies of the body through enabling control and surveillance devices to collect data from people/bodies. Naturally, this logics affects the art field and it somehow determines how electronic art is created and appreciated.

From the joy we find when inventing new thresholds of perception, I propose to make this crack visible. A crack that reveals itself as soon as we lay eyes on technologic fragility. To recognize technology's vulnerability through the body's own sensory vulnerability. This might introduce the suspicion of the fragile epistemological universe that underlies digital technologies.

······························· .
*Fantasies related to technologic eternity were confronted with the simple feasibility of a growing list of the ephemeral. Indeed machines can die.*
Siegfried Zielinski [8]
······························· .

← ━━━━━
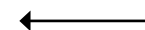
**Biases and Interferences**

In 2008, for the sake of returning to the body and to move away from certain idea of 'desktop' art, I conceived the performance *Habitat-Draw* (FONCA Jóvenes Creadores program), a site-specific intermedia project that involved digital drawing with infrared devices.

In the piece, my actual house collapsed as a reflection of body fractures, using as a metaphor the irruption of mass media in the intimate daily space. It was necessary to reconcile the mediated gaze with the real environment and body.

As artist-designer-system operator it's you who pre-establishes the technical criteria of interphase use, but the experience always holds the surprise factor in reserve. The whole body, perception and psyche reformulate, and this adaptation process is not immediate, like a computational reaction. This *in-between* space allows for the emergence of contrasts, internal struggles, frustrations, confusions, and also fascination.

Later, when in 2010 we founded Translab, Centro Multimedia's performing arts and technology research program, I spotted a different kind of outcome. We created *Empatía* [9], a performance duet with lit outfits that throbbed at heart rate. Four cardiovascular sensors allowed us to exchange frequencies between us and to connect with participants. Simultaneously, chromatic changes in the garments' optical fiber made visible the interweaving of subjective relationships, configuring a kind of garment-subject-collective.

However, at the end of the performance a curiosity gap opened up and I felt that viewers approached trying to find themselves in the device, no longer to empathize with me but with the fascinating strangeness of the circuit that was calculating and translating themselves. That experience allowed me to detected the instant when interphase becomes interference. Their link with me was kept as long as the auratic container of the live act was there, and then, somehow, the interphase began to operate under a human-computer logic. Is that the mirror neuron closing the circuit? What is the relational space that enables interphase design like? Since the heartbeat is an invisible biodata representation, was it still experienced as a heartbeat or as an input-output effect? Then, what does its poetic force rely on?

*While statistics compose a plan of names-numbers representations-form, experience always remembers the represented.*
Fernando Broncano [10]

At that point I have noticed we had to take a critical stance since we were working on complex terrain and the interphase configures a multi-relation device. The body, several bodies, including participants, performers, viewers are being directly confronted, deformed or simply interpreted through computational means that are programmed by other human bodies. What parameters are we resourcing to when we program artificial models that observe, calculate and perceive ourselves? Are we facing a kind of perceptual battle between what my eyes see and what the system feeds me back? Is it possible to get used to blindly trust in mediation? To perceive the other through this digital filter?

←
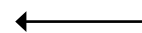
**Soft Acceptance, Critical Viewpoints**

In discussion panel *Prótesis*[11] (2012 Encuentro *Liveness*[12]), Mark Coniglio aimed his reflection at the hierarchical tension he observed in the body-technology relationship throughout his career. Through a pyramidal graphic, he explained how in a performance authority is represented by the computer at the top, followed by composition, and, finally, dancers. This means there is a certain complicity between bodies and digital systems where technological vices and virtues tend to be dominant.

He took this observation to the limit when staging *Loop Diver*[13] (2009). The concept axis of the piece is the loop, a precise metric cycle created by the computer. He imposed this logic of machinic repetition on the body movement creating a choreography designed on Isadora software.

Despite following the exact same guidelines, digital processes and human processes produced an exasperating tension which, according to Coniglio, generated frustration and impotence in the dancers because they struggled to be perfect. A constant -antinatural- pressure to adapt to a rhythm imposed from the

*There is a soft acceptance of technological innovations that takes place every minute of every day through massive media, hardware, pharmaceutical products and the environment. However, the same questions remain: Will we evolve towards something we do not want to be? Do we lose something along the way?*
Mark Coniglio [14]

outside is noticeable. It resembles a battle between mechanistic predetermination and human will.

This is why I find it fundamental that us artists consider, at a theoretical, ethical, discursive or poetic level, the impact of biometrics used as a technical filter of present body's -either their own body or someone else's- direct perception. Are we approaching a self-imposed validation system of the body as readable input for an 'artificial gaze'?

←
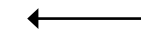
I read this same issue in David Rockeby's experience. In Ulrich Ekman's interview *Transformations for Transforming Mirrors*[15] the digital artist makes a critical reflection on his own work, observing through the decades how thousands of spectators have reacted to his interactive mirrors. In his own words, the computer is a very biased medium, purely logical, objective and disinterested. His motivation for the piece *Very Nervous System*[16] was to work firmly against these biases. However, his observation was very different: people were often so fascinated with the intensity of the interaction that they failed to reflect more deeply about the experience and its implications.

This is important because, through the concept of 'mirror', he highlights a feedback based in certain egocentric fascination for the device, resulting in an individual that tends to recognize him/herself physically as -my words- an input body.

Rockeby believes that if the commitment is dialogical in an algorithmic environment then it is distracting and inefficient, because recursion is interesting as long as a structural or functionally coherent meta-phenomenon emerges open enough to avoid being purely self-referential. Therefore, the interaction language must strive to be intuitive, the experience must be intimate, and the body must be strongly engaged in a human-scale physical environment.

Would it be enough to identify and solve the material relationship with the hardware environment, in its proportion, scale and portability? My reading is that Rockeby advocates going beyond reviewing the ergonomics of the prosthesis, since technology accompanies intrinsic formulations related to the way the individual acts in order to develop their thought structures, i.e. their epistemological dimension.

According to Rockeby, the technologies he developed during the 1990s have already been internalized and assimilated, 'normalizing' how we move in front of interactive digital mirrors. Since then, technologies encouraged the creation of false empowerment and real participation; in contrast, people continue to show enthusiasm for participating, but no interest in assuming any responsibility in their role as interactors. This is important because it identifies a willingly passive and technically active human behavior.

Very quickly, new ubiquitous technologies and mobile networks incorporate computers into a person's environment in such a way that computers can no longer be perceived as external agents. This makes human sense of orientation yield in favor of certain computational intelligence which becomes invisible and unquestionable.

*Between the living and the virtual, the scene needs to take position, not as a mirror of reality, but as a new place where the spectator's whole being is questioned.*
Marta I. Silva [18]

← 

### Paths of Liberty

Considering how surveillance culture stems from technology, and the ethical-political implications of its impact in the body and its technology assimilation process, I believe it utmost essential that performative art insists on the poetic construction of being here.

In his book *Digital Performance*,[19] Steve Dixon recovers the historical line of the spiritual vision found in Sacred Theater[20] to refer to the creation of a virtual other based on oneself. The real body / virtual body dualism cannot be understood without

the primitivist spiritual vision of Artaud's (1896-1948) theater, who assimilated Mexican rituals' animistic magic and spiritual power of objects, animals and rocks, which for Dixon manifest in the ubiquity of hypermedia systems. The *Digital Double,* a direct analogy to the book 'The Theater and its Double', does not represent the divided subjectivity of postmodern consciousness, but rather a symbol of the unified, cosmic and transcendental self. His reflection on theater as alchemy allows to achieve the encounter between spiritual, digital and virtual beings.

*The origin of totalitarianism is found in the abolition of the sacred.*
Basarab Nicolescu [21]

← 

### Performance art, transdisciplinarity and complexity

In my performance pieces Código*Pléyade and Código*Voz-Ignis, part of my master degree research[22], I introduced thermodynamics and complexity models into the field of electronic arts to study what is dissipated and what is conserved along a process.

I conceived a techno-poetics of fire as a subtle tactics of resistance to stress out the link between perceptual limits and experience framings. The flame, in its movement, flowing and becoming a number, configures a correlation of the human being's transformation.

The gathering space organically stems from the concept of arch-machine proposed by Edgar Morin, a complex thermodynamic system that transcends a bidirectional logic of data flowing between bodies and computers. It recognizes the human scale as immersed in a macrocosmic system. Self-perception of the unfathomable and the mysterious *per se* is the only way to verify the living body, never the approval of an external artificial intelligence attempting to decipher that body's biometrics and/or its appearance.

2013

2014

2016

*Arquemáquina Código\*Pléyade*
is a visualization of digital drawings made with candle lights. The premise is to spread the fire coming from the Pleiades stars from one hand to the other. The subtle bifurcation of the flames evokes typical biological behavior of cell-division by inheriting color codes.

*Arquemáquina Código\*Voz-ignis*  is a performance device that triggers multiple flows of thermal, mechanical and electrical energy evoking cosmogenetic machine cycles. The heat of a flame is transformed into electronic flickering, introducing digital variations to polyphonic songs and primitive mantras.

*Actos de autodesaparición*
Collective action / photoperformance for drawing a diasporic body. The task is to disseminate the flame that sets in motion a thermodynamic engine that recalls cosmos. While the flame moves around using matches, a long-exposure photograph captures the trace of contact and dispersion.

By assuming this position, I propose to make the forgotten visible and the biased experienceable, in order to make evident the operations of control and domination over our own nature. If certain technological achievements and ideological models disrupt the notion of human life as a whole, I sense that the role of the electronic artist, especially in the field of digital performance, needs to be resized after a fundamental convergence of the community, the creative, the critical and the imaginative, to draw a path of technocultural emancipation.

●

*Life is refractory to any dogma and any totalitarianism. Therefore, the transdisciplinary attitude presupposes inner thought and experience, science and consciousness, effectiveness and affectivity. The identity of meaning between the flow of information that crosses the levels of Reality and the flow of consciousness that crosses the levels of perception.*
Basarab Nicolescu [23]

More information http://m-y-r-i.net/tesis-de-maestria

**NOTES**

\* Text first published in Revista E-Performance *Cuerpo Máquina Acción* vol.4, 2018 - Dir. Alejandra Ceriani, UNLP

1. Broncano, Fernando. *Humanismo Ciborg.* p.104.

2. *In effigie* means 'as an image', in opposition to 'incarnated' or 'in the flesh'.

3. Belting, Hans. *Antropología de la imagen*, (An Anthropology of Images) p. 31.

4. *Artificial/Espejo*, collective (2003-2005) - Myriam Beutelspacher, Liliana Quintero and Omar Sánchez.. http://cmm.cenart.gob.mx/artificial

5. Quintero, Liliana. "Modernity". Walter Benjamin's concept quoted by Quintero in reference to "El final de las vanguardias (The end of avant-garde) by Eduardo Subirats.

6. Critical Art Ensamble's tactics.

7. Quintero, Liliana. *Op.Cit.*

8. Zielinski, S. *Arqueología de los Medios*, (Media Archeology) p. 4

9. Video. *Empatía 1.0* (2012) Myriam Beutelspacher & Minerva Hernández

10. Broncano, *Idem*

11. Mark Coniglio and Dawn Stoppiello founded interactive dance company Troika Ranch in New York in 1994. Coniglio has been awarded for his technological developments as the first MIDI controller for MIDIDancers and Isadora software.

12. International Performance Arts and Technology Festival: *Liveness: Prótesis, Gesto y Metáfora* (Liveness: Prosthesis, Gesture and Metaphor). Curators: Minerva Hernández and Myriam Beutelspacher. CENART, 2012.

13. *Loop Diver*. https://www.youtube.com/watch?v=GcBZQA15qlg

14.Interview. Imperica Magazine "Mark Coniglio: repetition and invention": 2011 https://www.imperica.com/en/features/mark-coniglio-repetition-and-invention

15. Ekman, U. Interview. "Transformations of Transforming Mirrors: An Interview with David Rokeby".

16. *Very Nervous System* (1982-1990)  served as practical study of man-machine physical interaction. It is an interactive sound installation that resourced to video cameras, image processors, computers, synthesizers and a sound system to create a space in which body movements themselves create sounds and music.

17. Mark Coniglio's concept discussed at *Liveness* and recovered by Translab for their Cartographic methodology..

18. Silva, Marta, "Antigas motivações poéticas; novo contexto cultural e novos paradigmas", in *Poéticas tecnológicas, Tercer seminario de danza, teatro y performance*.

19. Dixon, Steve. *Digital Performance. A History of New Media in Theater, Dance, Performance and Installation*, p. 241

20. Sacred Theater is a postdramatic poetics promoted by Peter Brook, a theater of the invisible-made-visible that takes up the idea of a total, ritual and metaphysical spectacle claimed by Antonin Artaud in mid 20th century. His sociocultural critical vision addresses how rituals that nourished spiritual life have vanished or were corrupted, for which he proposes to capture the invisible currents that govern our lives.

21. Nicolescu, B. *La Transdisciplinariedad. Manifiesto*, (Manifesto of Transdisciplinarity).  p.67

22. Electronic Arts Master's Degree Thesis: *Arquemáquinas. Indagaciones estéticas en torno al Devenir electrónico del fuego* (Arch-machines. Aesthetic Inquiries on the Electronic Becoming of Fire). Performative body of work: *Código\*Pléyade* and *Código\*Voz-ignis*.

23. Nicolescu, *Idem.*

IMAGE: *SIN ORIGEN SIN SEMILLA*

>

Articles by
María Antonia González Valerio,
Reynaldo Thompson & Tirtha
Mukhopadhyay and Luis Ángel
Jiménez Barrios

# The Sense of Experimentation in Extra-scientific Fields

**DRA. MARÍA ANTONIA GONZÁLEZ VALERIO**
UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO

Experimentation can be comprehended from a wide perspective, it is an activity we carry out on a daily basis, it is a way of dealing with the world in provisional terms.

We experiment constantly, and as we do so, we remain in a state of openness, of indeterminacy in which possibility appears as such. Hence, the great calls to experimentation, like F. Nietzsche's philosophy, hit this note where something needs to be tried and tried again, where what is important is not the result achieved but the attempt itself, the wandering and not the safe arrival. It can also be said that the experience of thinking is precisely that, an incessant attempt that turns back on itself without concluding, renewed each time it leaps back into the experiment, affirming it as such.

However, this openness could be contrasted with the type of experimentation that follows an established method, seeking the demonstration or verification of a previous statement.

Experimentation presents different manifestations according to what the experiment deals with. On one end of the arc we could mark experimentation as a game, in the sense that even when the rules are set beforehand we cannot know the outcome, neither there is a specific end being sought. This game model would not be the agonistic one but children's representations or the play of the waves[1]. On the other end of the arc, we could locate an experimentation that is precise and has a previously fixed purpose, hence its primordial sense is that of verification and its paradigm is scientific research. Between these two extremes many variations could be found; between precision and indeterminacy the experiment can present itself diversely.

Among these considerations we should also include a differentiation based on the things the experience deals with, because it is not the same whether the 'object' of experimentation is thought, action, experience or the body itself, or if it is something external: a living organism, tissue or inorganic matter. Or if it is sounds, words, pigments, forms, compositions, etc.

Experimentation modes and means could be identified according to disciplines, thus Science would correspond to the mode of verifying previous statements and the medium of the living and the matter; whereas Philosophy would correspond to the mode of indetermination and the medium of thought and action; and Art would also correspond to the mode of indetermination, but the medium would be matter and language.

But these rigid disciplinary distinctions are hardly sustainable, they would even crack as soon as concrete cases are analyzed. What is more interesting to think now are the possible crossings between experimentation modes and means. Specifically, I am interested on the question of what happens if we carry out scientific-like experimentation in a philosophic or an artistic field. For this purpose, I will focus on two examples.

First, the workshop 'Lógica molecular de la materia viva' (Molecular logic of the living matter), carried out in Summer 2012 at Cinvestav, after Tres Art Collective's[2] call to experiment with the production of ectopic bone in laboratory rats, and to perform clearing and staining techniques in frogs. Second, an installation by BIOS Ex machinA collective (Workshop for the manufacture of the human and the nonhuman) to detect transgenic corn contamination through resistance to glyphosate herbicide, carried out between 2012 and 2013 at MUAC/UNAM.

The common element of both was working with living organisms: animals and plants. However, the meaning of the experiments was different, although in both cases the boundary was death.

The research protocol to produce ectopic bone was already developed and tested. Dr. Víctor Calderón, from the biochemistry laboratory at Cinvestav, and his team introduced us to the practice, trained and guided us at all times. The challenge was to perform operations in rats and introduce them a powder with proteins that favor bone generation, then stitch them up and place them in the animal facility cages. A few days later, the rats had to undergo surgery again to remove the small bone pieces that had formed.

In the case of the frogs, they had to be killed first and then put in a solution before placing them in the agitator to obtain some beautiful transparent frogs with blue dyed bones.

Those of us who took part in this workshop came from non-scientific fields, mostly from Arts and Humanities. What was the point of going to the lab? What was the goal working with these animals? We were not proving anything that was not already known scientifically. In any case, and with luck, we would verify that the experiments worked and that the expected results were reached.

Undoubtedly, the first question to pop up is one of ethical

---

[1] I am referring here to the idea of game that sustains the philosophical hermeneutics of HG Gadamer, in *Truth and method*, which works as a common thread to think about art and language. The game is an event, something that occurs and that goes beyond the players' intentions.

[2] http://www.tresartcollective.com/

nature over an instrumental background. What is the justification for killing animals in a lab context? The countlessly heard argument is that in any case there would be some justification if, and only if, it is necessary in order to achieve a greater good or a greater purpose, for example, some benefit for Humanity due to the development of a new drug that requires previous animal testing.

The questioning would not rise in the case of experiments with plants. Neither with bacteria. With insects, probably not. Undoubtedly, it is closeness to the Human being that, from most considerations, triggers criticism. And that makes us think, it was one of the direct consequences of experimentation in the laboratory, to face this kind of questioning and try to grasp it from different angles. What does it mean and what responsibility brings working with live 'matter'?

From a certain perspective, it can be said that no benefit is obtained in performing lab practices that will not lead to



any scientific knowledge (basic or applied). That experiences in such a context mean an excess, an entertainment. That experimental philosophy does not require working directly with matter or with living organisms; that an art that resources to biomedia is parasitic of science's previous discoveries.

Distinguishing experimentation modes and means is precisely relevant to address these knowlesge crossings, which seem to suspect an outrage when non-scientific disciplines burst into such jealously guarded premises.

The indeterminate experimentation modes of Philosophy

and Art are confronted with the scientific experimentation mode. What there is to see here is what results from the simultaneous execution of modes. The workshop required that we learn precise techniques and proceed without modifying the protocol. It was not only the challenge of holding a warm body in our hands, feeling its heartbeat, picking up the scalpel and opening its back; but also of following instructions to the letter. The result was the expected: to extract ectopic bone from the rat. The scientific prediction was fulfilled. We performed the scientific experimentation mode without achieving any new discoveries using a live medium. But at the same time we were carrying out the other mode of experimentation and using the other means.

This implied that the indeterminate open experimentation was put to execution: with no previous knowledge of what was going to happen and no goal set, nothing specific that we could measure and quantify. What were we doing that for? There was no clear answer, it

was rather to put ourselves in a state of openness and let something happen. It was an experiment over an experiment, or one mode of experimentation that went through the other.

The means were also involved. For it was not only that the action involved just the animals 'object' of the experiment, the rats and the frogs, but it also involved us. The experimentation means were also experience, action, thought, coexistence and group work, the images, sounds, smells, photographs, videos and even the body itself dressed in white with gloved hands armed with a quivering scalpel.

What we witnessed was a simultaneous conjunction of modes and means. It was not only a matter of following a previously tested research protocol to demonstrate that as a result, ectopic bone could be produced in rats, extracted, weighed, and then record the achieved results. The view was much wider and we had to assume from the principle of action and reflection that what was at stake went beyond the

presumed linearity of a scientific experiment. This was in any case a complex experiment, unpredictable and with no measurable results. Openness, possibility and indeterminacy were to be left as such.

It should be argued that this extended experimentation is now also a standing place from which it is necessary to think, from where philosophical reflection takes its path and from where artistic production takes place. However, the distinction of modes and means must be maintained because disciplinary crosses make sense not in the confusion of the one and the other, or in the indistinct dissolution of borders, but in the maintenance of differences in order to cross them and produce another type of experiences, even inside a laboratory, even with living organisms.

The second example I want to address is the detection of transgenic corn because it implies another way of experimenting. This was a practice that we carried out following the protocols provided by the agronomist Margarita Tadeo of

FES-Cuautitlán /UNAM. A type of transgenic corn developed by companies is resistant to the broad-spectrum glyphosate herbicide. Glyphosate is sprinkled over crops to get rid of all kinds of grass and allow the corn to grow without competition. Obviously, this also implies that the non-transgenic corn dies along with the rest of the other plants, which may be those that conform the *milpa*, beans and squash.

Here we, the members of BIOS Ex machinA collective, did have a specific goal to fulfill because we were looking to detect transgenic contamination in forage maize, which we effectively achieved in the State of Guanajuato. The difficulties we faced were also related to life and death. But the death of plants has a very different ethical and experimental significance. In addition, there was the difficulty of executing a precise protocol, the monitoring, documentation and other unchangeable guidelines.

I planted seeds collected in different parts of the country and made them grow carefully at home. Then I transplanted them and performed the experiment. They were plants destined to die under the effect of glyphosate, and it was even desirable that they died because if any survived it was probable it was transgenic. The one that resisted to drying out after the herbicide, which I sent to analyze with a scientist who performed the ELISA test, we later exhibited it under a glass dome in the museum as part of the piece *Serán ceniza, mas tendrá sentido (ligeramente tóxico) / Ash they will become, nonetheless meaningful (slightly toxic)* in the framework of the exhibition Sin origen / Sin semilla (No origin / No Seed)[3].

The installation we assembled at MUAC, where we carried out the experiment in real-time, planting corn again and sprinkling it with glyphosate, could be initially regarded as not artistic, but precisely experimental. In what sense is 'Art' something designed to detect transgenic contamination? Beyond the tremendous discussion about the boundaries of Art, it is worth to excite once more the distinction between modes and means, as what we are facing again is extended experimentation.

The experiment mode was always determined by the protocol and by the attempt of demonstration and detection. Above that mode the other took place simultaneously, that of openness and indeterminacy, since if on one side the goal was concrete, on the other, i.e. the installation, it was never sure where it was going, how would it involve the audience response, how it would interact with the museum space and how it would open an indiscernible limit between Art and



'scientific' experiment. Here we left an open and indeterminate space sought to remain as such.

The means involved were also multiple and not limited to corn and herbicide, as experience, action and thought also came into play, since in addition to writing theoretical texts from it, we held a performance every Sunday in the museum to sprinkle the plants. It also involved sound, word, image, body...

With this experiment-installation we also try to show the possibilities of bringing DIY technologies to a general public and that the issue of transgenics does not take place in a distant enclosed inaccessible lab.

This also has been a complex experiment with no measurable results in which we witness the conjunction of modes and means in the crossing of disciplines.

Experimentation in extra scientific fields makes us see that we have to extend the sense and the limits, because what it is goes beyond quantification and measurement; the other ways of being are glimpsed from an extended experimentation, where neither the rats, nor the corn, nor the experience, nor the language, nor the body nor anything that was involved remained unaltered. The result, however, escapes verification. Experimentation is said and done in many ways.

●

MORE INFORMATION:

https://www.artemasciencia.org/

3      http://www.artemasciencia.com/exposinorigen/

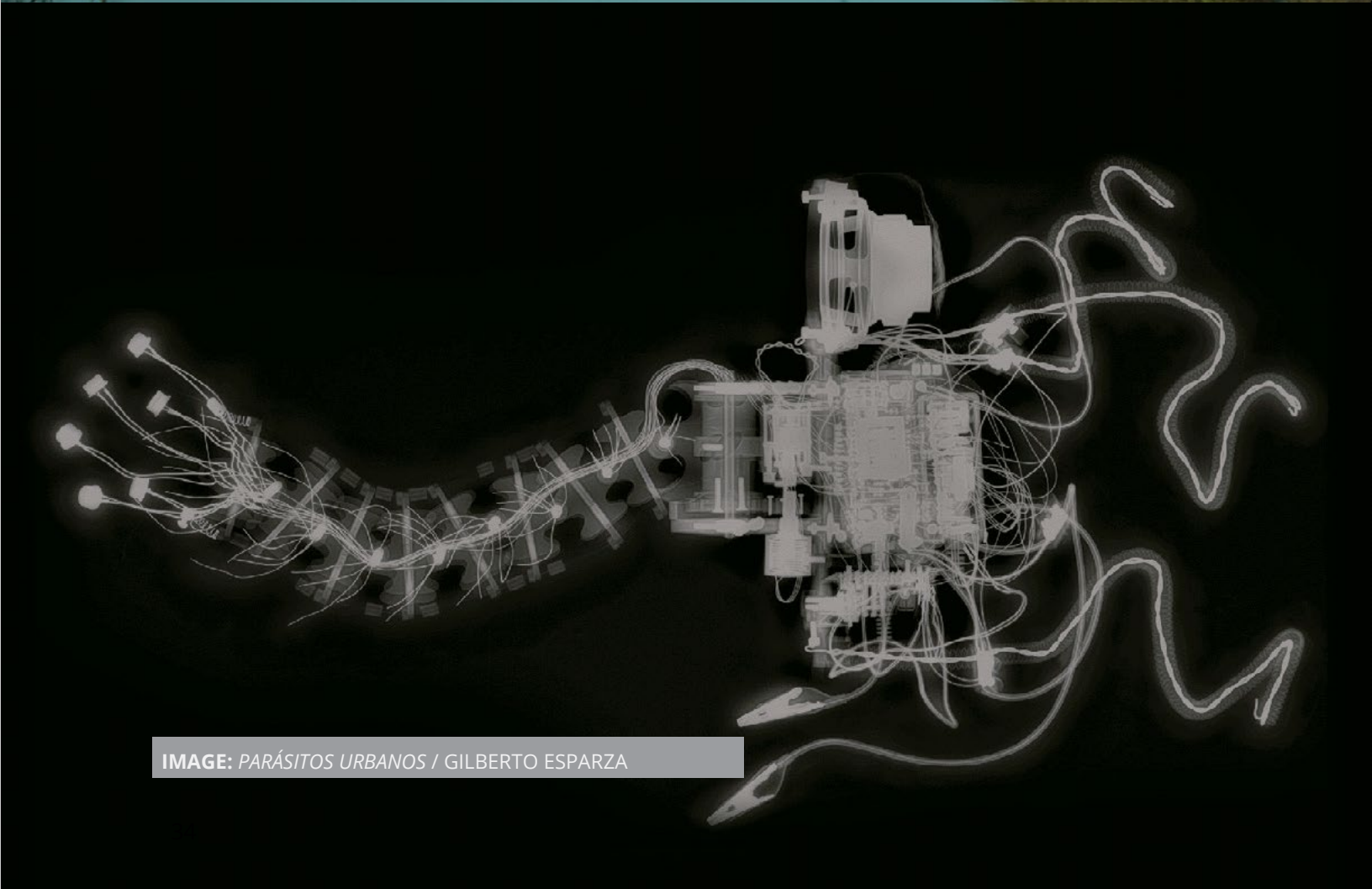**IMAGE:** *NANODRIZAS* / ARCÁNGEL CONSTANTINI



**IMAGE:** *PARÁSITOS URBANOS* / GILBERTO ESPARZA

# Nomad Plants
# Symbols of Globalization Era (excerpt)

**REYNALDO THOMPSON**
**TIRTHA MUKHOPADHYAY**
UNIVERSIDAD DE GUANAJUATO

An art-technology laboratory in San Miguel de Allende has now become a nursery for strange-looking robots similar to insects or, more specifically, arachnoids. It resembles a robotic installation including biologic processors and sonic sensors to create mechanical organisms. In addition, these robots purify water and add cations to the oxygen cycle. Therefore, they are, as contemporary techno-aesthetics calls them, hybrid insects or only 'hybrids' that combine biological and electronic components. Its dimensions are approximately 30 centimeters high and sixty centimeters wide. These robots, designed by Gilberto Esparza, apparently crawl over the bed of a polluted river. They function as unconventional avant-garde exhibitions, resembling to what postmodern French intellectuals Deleuze and Guattari claimed, as early as the 1980s, as examples of machinic assemblage art (Deleuze & Guattari: 1987), or what Katherine Hayles in the late 20th century called predictable post-human entities (Hayles: 1993, 2008). Protevi, after Guattari,

called this type of artistic object 'emergence' or evolutionary art, at a time when machines would have overtaken humans (Protevi: 2006).

Historically, 'robotic art' was born out of eccentric neo-dadaist experiments in the intersections of technology and art in other parts of the world, in Fluxus group's work, and in particular in Korean-American artist Nam Jun Paik who created robotic humanoid assemblages exhibited in New York in the sixties. Around the same time, Chilean Enrique Castro-Cid, also New York resident in 1960s, explored art and robotics interactions in his 1965 exhibition at *Richard Feigen Gallery*. Seminal influences of post-Fluxus avant-garde, Manuel Felguérez's and, decades later, Rafael Lozano-Hemmer's digital experiments developed in the incipient electronic art within a new generation of artists that influenced the guidelines for Centro Multimedia, Mexico City. In fact, CENART, founded in 1994 in the same city, fostered a great impulse where experiments similar to those taking place in a wider global context were

introduced and put to the test. Art and technology intersection was first visible in developed countries, especially at *Institute for Contemporary Art* (ICA) in London and *MOMA* in New York, as well as in Japan, along with radical innovations in this kind of aesthetics in countries like France (at Musée d'Art Contemporaine de la Ville de Paris, or Georges Pompidou Contemporary Art Center), Germany and Italy (Venice Biennale). The process began with the influx of European artwork and achievements taking place at nodes with a somewhat commercial museum culture, part of an essentially capitalist market-oriented culture in locations like New York and London. Here, Fluxus and neo-avant-garde, including works by pioneering artists such as Nam June Paik's robots, Edward Ihnawitz, Norman White or the aforementioned Enrique Castro-Cid were recognized and exhibited for the first time (Armstrong et al: 1995). New media technology revolution also inspired artists in Latin America, although that early history of creative interdiscipline has not been
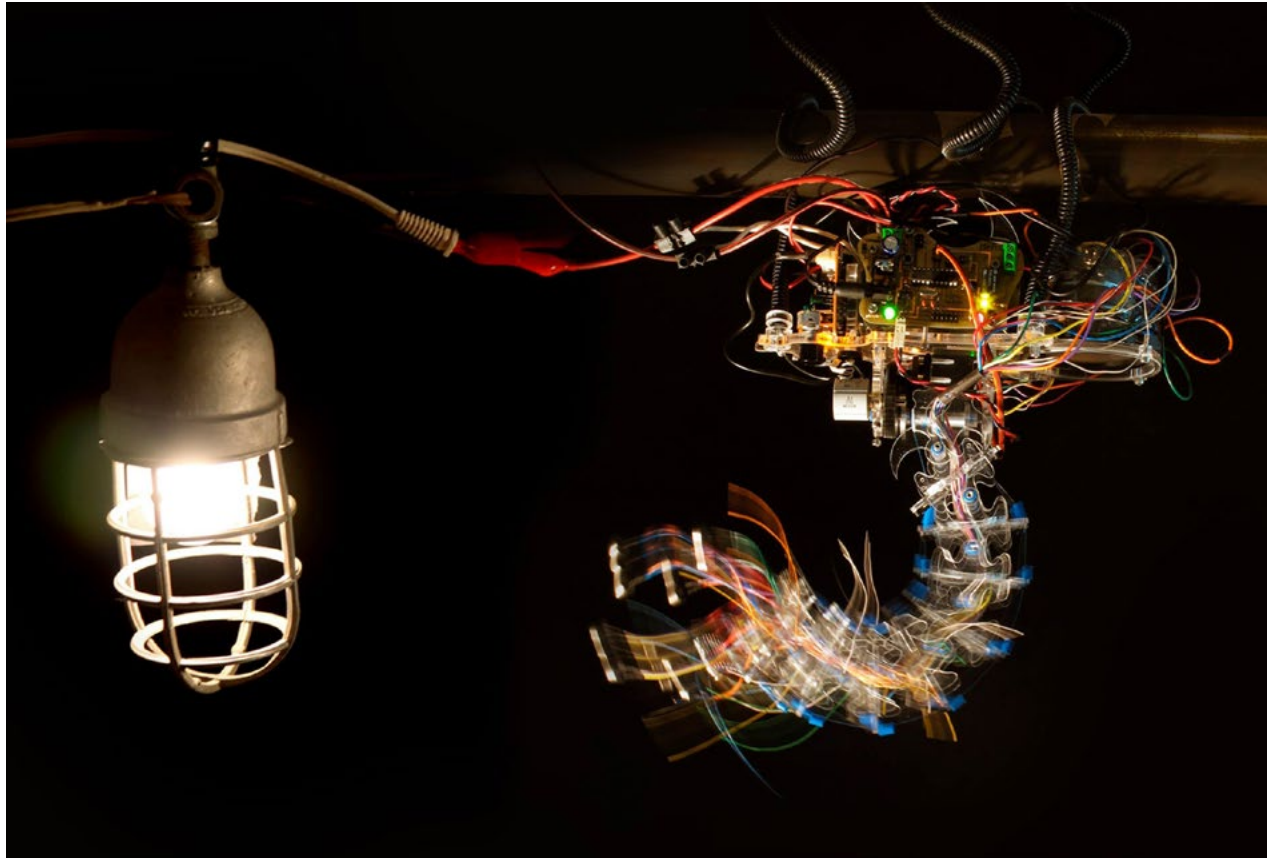
diligently noted, definitely not like part of industrially developed countries' discourse (Thompson et al.). In Latin America, the genesis of kinetic works, electronic installation or computer-generated photography and interactive art was evident in works by Julio Le Parc (Argentina), Manuel Felguérez (Mexico) or Abraham Palatnik and Waldermar Cordeiro (both from Brazil). They nourished the new language of art and technology interactions the same way Fluxus and kinetic artists anticipated the daring experiments in the North.

New media art, and robotic art in particular, emerged from idiosyncratic vanguard, had a completely different ideologi-

cal trajectory in Latin America, produced as a response to historiographic consciousness of a traumatized continent. Decades later, Arcangel Constantini's robotic art (precursor of the San Miguel de Allende group), with emblematic pieces such as *Nanodrizas* (2005), and Gilberto Esparza's hybrid robots (2007) were created with an activist spirit, against environment exploitation and subverting destructive technologies. His work was foremost defined by a biting ecocritical stance. The techno-ecological facet was a direct alternative for the unfortunate natural and environmental exploitation in a colonized territory such as Latin America. Gilberto Esparza, winner of 2015 *Ars Electronica*

*Golden Nica,* creator of the gigantic robotic insect, wanted it to work with *MFC* technology (Macrobial Fuel Cell, for its English acronym), microbial fuel cell, instead of fossil fuel; The MFC was a biofuel previously developed at University of Stanford, and experimentally used by pioneering electronic artists like Esparza in Mexico City, in an attempt to find solutions to the city's overwhelming environmental problems. Ecocritical art confers a new dimension to artists' efforts in Latin American context, especially in Mexico, as it begins to play an active role in a globalization era. Contemporary artists in Mexico have shown that the new simulation or image, whether visual or kinetic, produced at the intersec-

tions of history and technology, can become a decolonizing and environmentalist symbol that seeks to expose and to fight the continent's uninterrupted capitalist exploitation (Malina: 1990). The ecocritical decolonization alternative of San Miguel group's robotic or technology oriented art aims to convey a message across the boundaries and territories of race, habitat and identity, attempting to demonstrate that art belongs to each and every one of Mother Nature's children.

Alternative ecocritical ideology in art and media is a relevant issue to art evolution in this part of the world. Latin American technology art is oriented toward 'deterritorialization', since it is often destined to carry a

message across borders in favor of conservation and carbon emission deceleration, which are not local problems. Artists perhaps represent the search for a utopian environment, free from exploitation and oil war. Esparza's *Plantas Nómadas* project (2008), as much as his San Miguel colleagues' art, including Marcela Armas and Iván Puig, are an example of mobile interactive sculptures capable of moving through the problematic boundaries which the artists attempt to challenge. A challenge that describes a decolonization process, especially in artists sensitive to decolonization and to the ecosystem's exploitation frenzy of the last five hundred years.

Enrique Dussel, historian and critic, marks 1492 as the starting point of modern Europe history. Dussel calls modernity a colonization byproduct and a process that led to the creation of the Latin American other (Dussel: 2000). However, Dussel's observation is disputable, since Latin America modernity is not equivalent to Eurocentric modernity, it cannot be taken as such. Latin America needs to produce its own version of modern mentality, its own deterritorialization or decolonization, a powerful version evident in a whole generation of Latin American scholars since the 1950s. It is in this context that we also need to locate and read modern Latin America's technology. It is a decoloniz-

ing ecocritical modernism, an alternative modernism, since it embraces and transcends European-Anglo-Saxon capitalist polarization while, at the same time, it absorbs its science and creates an ecocritical utopia. Carlos Mariátegui's analysis of this resurgence of modernism shows us that Latin American art and philosophy are direct byproducts of a resistance against the exploitation history of his fatherland Peru's, witness of the devastating consequences of mining and of massive displacement of poor people from their natural habitat in the Andes (Mariátegui: 1979; Mariátegui & Garrels: 1979).

Therefore, it is not surprising that artists in Latin America, when applying technology to

art, will use it in favor of a different version of globalization. This is an alternative globalization, an ideological movement that could help recall a pre-Columbian glory and empathize with a safe, connected utopian world. This meant a new consciousness and a new hybridity. It emerged as a transnational phenomenon. The decolonization of representation is essential (Canclini: 2001). It also marks a transcendental turn for the Arts in Mexico, similar to the artistic revolution that inspired Siqueiros, Diego Rivera or Luis Barragán in times of the Revolution and later decades. The exponents of decolonized hybridity have already successfully demonstrated that technology should be home for

this consciousness since only through the dual experience of a global technologic advance and a specific local context it can make artists move forward in time. The continuous ecological exploitation that depletes the South's natural resources and megadiversity results in anxiety and loss of habitat (Lyons et al: 1998; Morrone: 2008; Monaghan: 2008; Horvath et al: 2012).

This transnational ecocritical voice of consciousness is poignantly captured in the writings of some of the finest writers and artists of our generation. Laura Barbas-Rhoden's incisive essay on this decolonizing ecocriticism stems from a discourse created by Antonio Cándido (1987) and Leonardo

Boff (1999), Canclini (2001) in Mexico-Argentina and Carlos Mariategui in Peru (1979).

Environmental activism is, therefore, what ultimately defines this Latin American stance in its most powerful instrumental form. The arts are necessary to protect Latin America from a second wave of abuse. Instead of capitalist technology, the environmentally sensitive artist professes a new vision of the future, a new approach and commitment that preserves the beautiful rivers and forests from an idealized and pristine nature, under the substrate of nationalities and ethnic groups in a return to the continuous line of being which, as Enrique Dussel points out, will constitute the geopolitical epistemol-

ogy of contemporary world. By no means such art would be obsolete or dead in its cradle. Contemporary art is not born dead. It would be an evolving global event, as it is already evident in the works of Arcangel Constantini, Gilberto Esparza or Rafael Lozano-Hemmer.

●

## BIBLIOGRAPHY

Armas, Marcela. 'Gil's World'. *Gilberto Esparza Cultivos*. Ed. Armas Marcela,Tatiana Cuevas, Matthew Hall, Jens Hauser, Karla Jasso, Jose-Carlos Mariategui. Jessica Riskin. Lima: Peru. Espacio Fundacion Telefonica 2015. p. 41.

Armstrong, Elizabeth, et al. *L'esprit Fluxus.* Musées de Marseille, 1995.

Barbas-Rhoden, Laura. *Ecological imaginations in Latin American fiction.* University Press of Florida, 2011.

García Canclini, Néstor. "La globalización imaginada." Archipiélago: Cuadernos de Crítica de la Cultura 47 (2001): 140-140.

Candido, Antonio. "A nova narrativa." A educação pela noite e outros ensaios 2 (1987): 199-215.

Castree, Noel. *Bioprospecting: From Theory to Practice (And Back Again).* Transactions of the Institute of British Geographers, Vol. 28, No. 1 (Mar., 2003), pp. 35- 55.

Datteri, Edoardo and Guglielmo Tamburrini. *Biorobotic Experiments for the Discovery of Biological Mechanisms.* Philosophy of Science, Vol. 74, No. 3 (July 2007), pp. 409-430

Deleuze, Gilles, and Félix Guattari. "A Tousand Plateaus." Trans. BRIAN MASSUMI. Minneapolis: University of Minnesota Press (1987).

Dussel, E. D., Krauel, J., & Tuma, V. C. (2000). *Europe, modernity, and eurocentrism.* Nepantla: views from South, 1(3), 465-478.

Hayles, N. Katherine. "Virtual bodies and flickering signifiers."

October 66 (1993): 69-91. ---. *How we became posthuman: Virtual bodies in cybernetics, literature, and informatics*. University of Chicago Press, 2008.

Horváth, Roland; Magura, Tibor; Tóthmérész, Béla. *Ignoring ecological demands masks the real effect of urbanization: a case study of ground-dwelling spiders along a rural-urban gradient in a lowland forest in Hungary.* Ecological Research. Nov2012, Vol. 27 Issue 6, p1069-1077. 9p. DOI: 10.1007/s11284-012-0988-7.

Lyons, John. Georgina González-Hernández, Eduardo Soto-Galera & Manuel Guzmán-Arroyo. *Decline of Freshwater Fishes and Fisheries in Selected Drainages of West-Central Mexico*. Fisheries. Volume 23, Issue 4, 1998. pages 10-18

MacCready, Paul. B. *Art and Nature in the Technology of Flight.* Leonardo, Vol. 19, No. 4 (1986), pp. 317-319

Malina, Roger. F. *Digital Image: Digital Cinema: The Work of Art in the Age of Post-Mechanical Reproduction.* Leonardo. Supplemental Issue, Vol. 3, Digital Image, Digital Cinema: SIGGRAPH '90 Art Show Catalog (1990), pp. 33-38.

Mariátegui, José Carlos. *Ideología y política.* Vol. 13. Biblioteca Amauta, 1979.

Mariátegui, J. C., & Garrels, E. (1979). *7 ensayos de interpretación de la realidad peruana* (Vol. 2). Fundacion Biblioteca Ayacuch.

Morrone J, Juan. And Marquez Juan. *Biodiversity of Mexican Terrestrial Arthropods (Arachnida and Hexa-poda): A Biogeographical Puzzle. Acta Zoológica Mexicana* (n.s.) 24(1): 15-41 (2008).

Monaghan, Peter. *Where High Tech Meets High Concept. Chronicle of Higher Education.* 2/23/2007, Vol. 53 Issue 25, pA27-A28. 2p. 2 Color Photographs. *Acta Zoológica Mexicana* (n.s.) 24(1): 15-41 (2008) pp15 -41.

Protevi, John. "Deleuze, Guattari and emergence." Paragraph 29.2 (2006): 19-39.

Schmitt., Christopher, Jo Ellen Hincka, Vicki S. Blazerb, Nancy D. Denslowc, Gail M. Dethloffd, 1, Timothy M. Bartishe, James J. Coylee, Donald E. Tillitta. Environmental contaminants and biomarker responses in fish from the Rio Grande and its U.S. tributaries: Spatial and temporal trends. *Science of The Total Environment.* Volume 350, Issues 1–3, 1 November 2005, Pages 161–193

Shaffer, H.B., Parra-Olea, G. & Wake, D. 2008. *Ambystoma lermaense.* The IUCN Red List of Threatened Species 2008: e.T1093A3228332.http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T1093A3228332.en . Downloaded on 17 October 2015.

Villaroya, A. Pino-Del-Carpio, H. Ariño, J. Puig and R. Miranda. Communication gaps in knowledge of freshwater fish biodiversity: implications for the management and conservation of Mexican biosphere reserves. *Journal of Fish Biology.* Vol 79 Issue 6.  26 AUG 2011.

**IMAGE:** RETROSPECTIVE MEMORY<<< *DESMODIUM-MÁQUINA*

# From Star to Machine, by the Matter

**LUIS ÁNGEL JIMÉNEZ BARRIOS**
UNIVERSIDAD DEL CLAUSTRO DE SOR JUANA

*Art deals with matter, with any matter, in complex terms. [...] Matter in art becomes patent, you can sense how it was before; you sense its path, the trace, the trajectory, and how, in this or that aesthetic expression, networks, lines, links to many other things open up for the matter, and how the resulting experience becomes that before and what alters that before, re-linking to what comes after. To an imagined after.*[1]
María Antonia González Valerio

## Introduction

In this ontological effort, María Antonia González Valerio elucidates the mode of being of art as opposed to that of philosophy; while the latter works with concepts, creating them to mediate with the real, art deals with matter, directly intervening it. For González Valerio, the important issue is not to discuss representation in art, but rather how, as form of thought or as work, it allows us to know the real as mediation.

Prepositions now gain a fundamental precision. The artist thinks *with* matter while philosophy, as presented in the aforementioned book by González Valerio or in Gustavo Bueno's brilliant article *Philo-*

*sophy of stones*[2], it thinks from the matter; But thinking art is neither one nor the other, but letting matter, through intense reflection, guide new ways of understanding and using concepts. It is not intended to produce concepts or produce new agencies for the matter, but in a retroactive exercise, to find new relationships between them.

Carolyn Christov-Bakargiev's curatorial exercise for the 14th Istanbul Biennial is an example of this, in which, starting from the sea and its physical and cultural modes of being, it generated different reflections embodied in multiple pieces or in the sea itself[3].

Well, González Valerio and Christov-Bakargiev agree that technique and technology are combined mediations, juxtaposed or simultaneous to the senses that reveal different realities of matter, without these being hierarchical in terms of some being more real than others. Between a tactile sensation through the hands and a chemical composition analysis, the qualitative distinction is not *a priori* related to the ability to approach a reality in itself, in any case it is *a posteriori* in the different paths opened when thinking each mediation in its particularity.

Here, objects are not stones nor the sea but stars. The piece *Código*Pléyade* is an installation-machine by Myriam Beutelspacher, a vehicle, to put it in Gaos' terms, that houses the star constellation of the Pleiades. This installation, as a complex system of mediations, it is also a complex system of reality/ies.

The following questions about stars, as matter and as system, machines and art, will attempt to trace a path with the goal to inquire if there are and

what are the particularities of Myriam Beutelspacher's production in the reflection of art and technology.

## I

To consider the stars as matter forces us to conceive them from their mediations, the different modes in which they appear to us. Stars are entities that exceed human scale up into the heights, they are unreachable and distant objects, therefore, they participate in our life in various ways.

Throughout history, the stars have been grasped through their sign qualities, they are signals; the clearest example is their time-passing indication, its calendrical sense. In particular, the Pleiades, the constellation addressed in this work, has been referred to in cultures as distant from each other as the Greek and the Maya. They appear in *Works and Days* guiding peasant work and they are the order foundation of Haab calendar, respectively. Otherwise, they are also signs that we could call historical-topological, a special record that prints or

points out unique events in the cosmic map. Perhaps the best example of this is Bethlehem star, which announced the event of Jesus' birth and indicated the place where it would happen. In the case of the Pleiades we can mention Popol Vuh, where, described as the Motz, they remind the moment Zipacná took the lives of 400 warriors[5].

Another mediation of the stars is companionship. The stars assign features that mark individuals' births, and their different meanings can be seen in different cultures' astrological traditions. Thus, the star is that other, so fundamental to the individual in Sloterdijk's thinking: 'All births are births of twins; nobody comes to the world without company and without an annex. Everyone who rises to the light of the world is followed by an anonymous, mute Eurydice, created not to be seen'.[6]

We could state that all these mediations are given through the 'naked' senses, stressing out the quotation marks because, except for recognizing the distance that separates us, the

senses always extend through culture and symbolic exercise.

The other important type of mediation to this work is that given through scientific categories and the different technological devices of perception. In this mediation the star is a producer of light, more specifically of infrared, ultraviolet and different color wave frequencies.

This type of mediation corresponds to an objective thought, to put it in Morin's perspective[7], besides apprehending reality in measurable and quantifiable terms, what is interesting is the atomization of that reality, the division of the star entity into its components. It is worth quoting Gustavo Bueno in full, and the story he recovers from Santiago Ramón y Cajal:



*Because we could also say that the 'scientific image' of reality is more unreal or abstract than its pre-scientific image. Cajal, in one of his stories, tells us about a doctor who was desperate because his eyes lacked the resolution capacity of an optical microscope, so he asked a genius to grant him that ability. But when the doctor is in possession of it, he perceives strange cells, worms or disgusting bacteria in the sirloin in his dish; and also perceives frightening cells along with bacteria and spirochaetes on his girlfriend's lips when he is about to kiss her. The doctor, concludes Cajal, asks the genius to deprive him of the microscopic capacity he gave to his eyes. Does this mean that Cajal's doctor wanted to return to the world of appearances or illusions, turning his back on the reality of bacteria or spirochaetes? No, because the sirloin or his bride's lips are as real to his scale as the cells that compose or invade them*[8].

Following this story, we can say that the mediation of the technical artifact does not represent a different degree, more or less real than the first examples, but only a different way of accessing the real.

Furthermore, it is worth noting that the different modes of being of the same entity, which, at phenomenon level, appear as events so different from each other, reveal the potential of the matter, a difference within the identity that is revealed and expanded with each mediation.

From here on, we will analyze how the modes of being of the star, enumerated above, become fundamental to understand the piece. We will explore the function of the technical object as a vehicle that introduces matter into what we will call anthropic islands, and the machine, the organized system (as identified by Morin) that embodies the work.

## II

In material terms, we can say that the first constitutive element of the piece is the star in its different modes of being *in* and *as* mediations. The other objects are fire lamps, infrared sensors, computers to process data, projectors, motion sensors, candles and human bodies.

The piece consists of seven lamps arranged on the floor of a room; on the ceiling different motion and infrared sensors are placed. At the room entrance, candles are set for participants who, upon entering, take one and light it with the fire of one of the lamps in order to go across the space holding their light; this trajectory will be captured by the sensors, the information is processed, and the trajectory projected in the form of a line that simulates drawing on the celestial vault. We can now add these strokes to the list of material components as an independent element, because we can not reduce them to the candlelight,

or to the projection, or to the participants movements.

Peter Sloterdijk, in his ontological reflection on space, comes to the conclusion that the human being achieves this condition through states of isolation, creating a distance from their surroundings that allows them to become self-absorbed, later to be called culture. This isolation should not be understood as a separation or total exclusion as if the human has developed independently from the world, but as an exercise of dialectical tension which at the same time is a (re)incorporation of that inner environment the philosopher calls 'anthropogenic islands', in such a way that what defines Man is the problematic, tense relationship they establish with the alien.

I am now using José Gaos' concept, who calls the devices *vehicles*, as 'vehicles are all transporting artifacts of anything human beings are interested in moving, bring close or push away: their voice on the phone, images in television, destruction and death due to arms [...] vehicles are mobile mobilizers'.[9]

Here we bring back what was said in the introduction, the installation *Código\*Pléyade* as a *vehicle*; in the sense that each device that composes it, from the candles to the computer system, transports a mode of being of the star, of that unattainable object, to the room in which the piece is presented; the lamps are transported as photoluminescent beings, the fire of each is unique, simulating the differences between the stars, perceived through the infrared, ultraviolet and colorimetric analysis; the strokes, the light set in motion by the participants, introduce them as companions; the candle that needs to be held at all times and the drawing as the movement of a star through the celestial vault are the representation of both parts of the union; finally, the computer system brings in the stars as the type of sign we call historical-topological, in the sense that the input, processing and output of data link the Pleiades directly with the event of a group of people transiting through a showroom, and that the natural language of biblical

or historical text is replaced or translated into computer bit language.

The piece clearly allows to peer the process described by Sloterdijk, which is always carried out through mediations. *Código\*Pléyade* it is not about capturing the star as an object, subdued under the artist's will, but to grasp the very distance existing between it and us. It makes the stars fully exist on a human scale without reducing anything in them.

## III

An undoubtedly interesting question is the relationship the artist establishes between the piece and the machine concept in Edgar Morin. He argues that 'we can and should consider our artificial machines as manufactured instruments that fulfill mechanical actions [...] a physical praxic being, that is to say, it carries out its transformations, productions or realizations as consequence of an organizational competence'.[10]

In order to move on, we should follow Lewis Mumford who, in

his book *Art and technics*, makes two important statements regarding technique. The first is the distinction he makes between human art (craft) and machine art (industrial) based on his 'creation canons': 'The canons of machine art are precision, economy, slickness, severity, restriction to the essential, and whenever these canons are violated [...] the result is not the humanization of the machine but its debasement'.[11] This must be meticulously questioned. The first thing to note is that when discussing new media art, the machine is not only present in the manufacturing process but it is also part of the piece, hence why the idea of economy is not fulfilled as not only the machine's capabilities matter but also its own symbolic and material sense; the second is that the treatment of technology presents a hybridization between the three moments (artisanal, industrial and new media art).

Although these clarifications might make Mumford's enunciation unsuitable to reflect on Myriam's piece, in fact they shed light on new media art's



features in terms of Art History and reaffirms María Antonia González Valerio's ideas, for whom 'if we think of art as mediation [by the matter], it is not a question saying whether or not it is representational, or in what terms, or if it is performative, etc. [...]. It is about focusing on mediation and its mode of being, as mode of being of what is'.[12]

Mumford's second statement is about change in artistic creation moments of freedom or choices: 'What is peculiar to the machine is that choice, freedom, a esthetic evaluation, are transferred from the process as a whole, where it might take place at every moment, to the initial stage of design'.[13] This is an element of industrial art

that apparently is still present in new media art, because both hardware and software material and symbolic load are inseparable from its functionality, but we will come back to the latter's distinctive feature.

Beutelspacher's role is that of a humanist engineer, to put it in Fernando Broncano's terms, this is, as a legitimate interpreter of material culture, able to point out the network of relationships that the technical device establishes between its inner and outer functional parts, between it and the symbolic and material cultural universe (agents, uses and other devices),[14] that is, she is capable of translating the machine from object to system, in Morin's terms. This statement about

the artist's work is confirmed by what we already explained in the previous sections, the star modes of being in its artistic and non-artistic mediation are a consistent correlate; and it is enough to know that infrared sensors usually work with waves and not with fire, or to notice the unclassifiable, almost bio-artistic work that deals with fire at a genetic level, to recognize the artist's ability to interpret material culture from an engineering-artistic hybrid vision.

This restricts Mumford's assertion validity to a moment based on rigid disciplinary division, in which the artist is able to use the device but not to interpret its potentialities. For a field of authentic interdiscipline, the

artistic process appears again as a whole in regards to its moments of choice or aesthetic assessment, which it can occur at any time when the devices are part of the piece and, therefore, when making art, technology is also being made.

Morin's machine concept becomes relevant when we identify the piece first as a system of systems, that is to say that it holds an organizational competence in the interrelations between each element of the work; second, as something capable of transforming and producing matter, which, as we have said, it takes place always and only as mediation. Therefore, the artistic machine distances itself from the industrial, reproductive machine, becoming closer to

the natural machine described by Morin, which is pure *physis* and 'its poiesis identifies itself, first of all, with the permanent production of its own being. Even the bare wild swirl is constantly producing, constantly reorganizing its own being'.[15]

## Conclusion

Lewis Mumford's thesis in *Technique and Human Development* points out that it is the brain and not the hand the specialized organ, the decisive element of human evolution[16]. When explaining the *Quirotop*, Sloterdijk stands for exactly the opposite[17]. I dare to say that none is wrong, but both have only half of the truth, as we can say that the determining factor

is the correlative evolution of both. We base this on the fact that the artistic task, as a way of thinking (to pull the thread that Carolyn Christov-Bakagiev offered us) that is very present in human history, it should be understood as a theoretical practical exercise that transforms both empirical and ideal matter.

For modern art history until the 1980s, to address the material meant addressing history, the sociopolitical context that gave rise to ideas expressed in art, but for contemporary art, particularly the so-called new media art (and maybe from there to every art, retrospectively) to address the material is to turn to look at the coexisting

objects and devices with a human group.

Myriam Beutelspacher's work introduces, in the form of a subtext in her personal path, from the *wiimote* to the fire (from *Habitat-Draw* to *Código\*Pléyade*), a gaze we could link to Vilém Flusser and his lucidity of thinking and writing from Brazil. Technological backwardness, expensive technology and absence of certain apparatus are features related to countries or regions like Latin America, which remain outside the scope of incessant device production.

Myriam's true contribution resides in the way of asking, in the way she faces a concrete material universe, discovering

the unseen in those things that seem exhausted. The machine *Código\*Pléyade* takes a 'step back' in the apparent *continuum* of progress, opening the aesthetic possibilities of something as rudimentary or as basic as fire from the atomization possibilities opened by different devices. Thus, the participants' experience undergoes new machine organization forms and another way of thinking technology

Following Agamben, Myriam invites us to think that contemporary are not only artists capable of glimpsing the shadows of their time through the lights. Also viewers and other branches of knowledge can and should become truly contemporary. And one way to achieve

this is to think matter intensely, to take an untimely step that breaches through objects culturally and scientifically delimited toward what remains artistically and engineeringly open.

●

**CITAS**

1. María Antonia González Valerio, *Cabe los límites. Escritos sobre filosofía natural desde la ontología estética*, México, Herder – UNAM, 2016, p. 82.

2. Cfr. Gustavo Bueno, "Filosofía de las piedras" in *El catoblepas*, No. 58, dec. 2006, p. 2 (in http://nodulo.org/ec/2006/n058p02.htm consulted Mar/18/2018)

3. Cfr. Carolyn Christov-Bakagiev, Tuzlu Su – Saltwater 14th Istanbul Bienal, Estanbul, Istambul Foundation for Culture and Arts – Yapi Kredi Publications, 2014, 540pp.

4. "Upon the emergence of the Pleiades, descendants of Atlas, harvest begins; and farming, when they hide. Then, they hide forty nights and forty days and again at the end of the year they begin to rise when the sickle is sharpened." Hesiod, "Work and Days" in *Obras y fragmentos*, Trad. Aurelio Pérez Jiménez y Alfonso Martínez Diez, Madrid, Gredos, 1978, p. 144.

5. All examples are different characterizations given to the Pleiades constellation. Source: Wikipedia (IN https://es.wikipedia.org/wiki/Pl%C3%A9yades_(astronom%C3%ADa) #Menciones_literarias consulted Mar/30/2018).

6. Peter Sloterdijk, *Esferas I Burbujas*, Trad. Isidoro Reguera, Madrid, Siruela, 2da ed. 2003, p. 375.

7. Cfr. Edgar Morin, "La organización (Del objeto al sistema)" in *El método I. La naturaleza de la naturaleza*, Madrid, Cátedra, 6ta edición, 2001, pp. 115-127.

8. Gustavo Bueno, *Op. Cit.*

9. José Gaos, "Sobre la técnica" in *Acta Politécnica Mexicana, No. 1*, Ciudad de México, Instituto Politécnico Nacional, 1959, p. 107.

10. Edgar Morin, *El Método I, Naturaleza de la naturaleza,* Madrid, Cátedra, 6ta edición, 2001, pp. 185-186.

11. Lewis Mumford, *Art and technics,* Nueva York, Columbia University Press, 1952, pp. 80-81.

12. María Antonia González Valerio, *Op. Cit.*, p. 72.

13. Lewis Mumford, *Op. Cit.,* p. 82

14. Cfr. Fernando Broncano, "El ingeniero como intérprete de aparatos" in *La estrategia del simbionte. Cultura material para nuevas humanidades,* Salamanca, Editorial Delirio, 2012, 171pp.

15. Edgar Morin, *El método I. La naturaleza de la naturaleza*, Madrid, Cátedra, 6ta edición, 2001, p. 210.

16. Cfr. Lewis Mumford, "Capítulo 1. Prólogo" in *El mito de la máquina. Técnica y evolución humana,* La Rioja, Pepitas de Calabaza, 2010, pp. 9-26.

17. Cfr. Peter Sloterdijk, "El quirotopo – El mundo a la mano" in *Esferas III. Espumas*, Trad. Isidoro Reguera, Madrid, Siruela, 2006, pp. 280-290.

**BIBLIOGRAFÍA**

Agamben, Giorgio, "¿Qué es ser contemporáneo?" in *DDOOSS, Asociación de Amigos del Arte y la Cultura*, 2012 (in http://www.ddooss.org/articulos/textos/Giorgio_Agamben.htm Consulted Feb/25/2018).

Broncano, Fernando, *La estrategia del simbionte. Cultura material para nuevas humanidades*, Salamanca, Ed. Delirio, 2012, 171pp.

Christov-Bakagiev, Carolyn, *Tuzlu Su – Saltwater 14th Istanbul Bienal*, Estanbul, Istambul Foundation for Culture and Arts – Yapi Kredi Publications, 2014, 540pp.

Gaos, José, *Historia de nuestra idea del mundo*, México, Fondo de Cultura Económica, 1992, 748pp.

____, "Sobre la técnica" in *Acta Politécnica Mexicana*, No. 1, Ciudad de México, Instituto Politécnico Nacional, 1959, pp. 105-112.

González Valerio, María Antonia, *Cabe los límites. Escritos sobre filosofía natural desde la ontología estética*, México, Herder – UNAM, 2016, 310pp.

Morin, Edgar, *El Método I, Naturaleza de la naturaleza*, Madrid, Cátedra, 6ta edición, 2001, 448pp.

Mumford, Lewis, *Art and technics*, New York, Columbia University Press, 1952, 162pp.

_____, *El mito de la máquina. Técnica y evolución humana,* La Rioja, Pepitas de Calabaza, 2010, 556pp.

Sloterdijk, Peter, *Esferas III. Espumas*, Trad. Isidoro Reguera, Madrid, Siruela, 2006, 711pp.

**IMAGE:** RETROSPECTIVE MEMORY<<< *SOCIEDAD MIMÉTICA*

**IMAGE:** RETROSPECTIVE MEMORY <<< *EFUSIÓN*

>

Reflections by Mexican artists on their own practice, trajectories and working concepts. They have been part of Bioscénica's festivals, curatorships and transdisciplinary labs over the years, where experience was meant to be shared as first-hand knowledge.

Articles by Abigail Jara, Mexican choreographer, recent contributor at LABCET Epigenética and EMPATÍA 5 / DH in the framework of FestivalN (2018), and Ricardo Cortés, composer and programmer, has been a regular collaborator since experimental music concerts Kalispherion (1999 - 2004) and was part of curatorships Performa 2.0 (2010) and *1st Encuentro Internacional Liveness: Prótesis, Gesto y Metáfora* (2012).

# Sorecer 360°
# Immersive Metaformance:
# Experiencing Ubiquity

**ABIGAIL JARA DURÁN**
MUSSE DANZA CONTEMPORÁNEA

An approach to the research-creation process of immersive metaformance Sorecer 360, which reconfigures body-user-performer categories within an interactive environment where traditional scene roles are displaced. Relationships are weaved through present and virtual bodies and the body of sound, which engage into a real-time dialogue with the performing event.

Sorecer 360 is part of a modular performing arts project, conceptually focused on sisterhood and the power generated around women circles. This same conceptual ground has been shaped into different formats, namely a stage piece, a dance

video, a 360° video, a soundtrack and an immersive experiential metaformance.

I will focus on this last format and share the journey that has led to a performative event involving multiple realities. But before this, I find it essential to geolocalize the urgency that moved me to open a reflection space with women, where the research subject was ourselves.

Mexico is the second most unsafe country in the world for women; every 4 hours a woman is murdered or disappeared. Femicide violence and disappearing of women and girls speaks of a non stopping trend. Facing this fact, in early 2016 I summoned several friends to begin a research process on the ancient wisdom female bodies hold. We wished to decolonize our bodies, recognize ourselves, recover the link with our nature, with ourselves, to create together, to become a herd. We wanted to contribute to the paradigm shift in the collective imaginary regarding being a woman in Mexico.

We took on the task of recovering the dynamics of feminine circles, such as intuition, intimacy, loyalties, agreements and democracies, to generate a safe space where it was more natural to find our own poetics without impositions. We reflect on our feminine bodies as knowledge containers which have been denied to us and censored, but belong to us. We explore our bodies from the strength, care and dignity in response to violence, violations and censorship.

Due to our country's context, we have adopted a political stance from our artistic field and have found in transdisciplinarity and virtual spaces some powerful tools of knowledge exchange, necessary to produce our own reflections.

Multiple reality technology is a scarcely explored territory in Dance and we have been shaping it along the experience, tuning up the potential that emerged when we set all the elements of the metaformance into the practice .

During the excercise of reviewing, identifying and understanding what we were producing, I came across the metaformance concept proposed by Claudia Giannetti, italo-brazilian theorist and researcher specialized in Contemporary Art, Media Art and Art- Science-Technology, who proposes to bundle art pieces that bind human and machine together, human-technology. However, the element that drew me toward this format was the shift in the viewer role in the piece.

←

In Sorecer 360º, the viewer shifts their passive condition in relation to the piece and turns into a user or experiencer, and becomes, in Ranciere's terms, an emancipated spectator. This shift breaks with Platonic thought where each one must work within their trade according to their own abilities, without crossing boundaries outside their own activity.

Claudia Gianneti quotes:
*In Metaformance, the artwork existence relies on the fulfill-ment of the action, and both are subordinated to the user's action. The spectator as external observer is not only shifted to 'performer', but also becomes an internal participant through its insertion in the potential context of the work; the work as such is revealed as a result of the spectator's perfor-mance and intervention.*

The main components of this immersive device are trans-epidermic sensory expansion, sound spatialization and a dissociated presence that allows to experience ubiquity. They place the user-experiencer in a co-creating role of the performatic event.

←

Regarding sound design, sound also becomes a body experience due to spacialization. In Metaformance Sorecer 360º sound is another body, engaging in real-time dialogue with performers and users-experiencers. The approach here involved an acoustic-electronic-multichannel exploration aimed to substantially contribute to the immersive proposal, to be achieved through the use of hybrid space spreading techniques that combine traditional plug-in methods with multiarray microphone techniques.

Therefore, the immersive sensation is achieved through two main components: one digital and one acoustic. The first resources to textures composed by sinusoids with dynamic spectromorphology in order to function as a 3D extension of binaural beats. This textural composition, created and transformed in real-time, can slide from the ergodic to the chaotic, and it is developed and spatialized with digital media. For the acoustic component, a

Jaques Rancière quotes:
*Boundaries need not remain fixed and immutable, leisure and aesthetic reflection may appear in any individual, it is not exclusive prerogative of artists.*

multiarray microphonic system is used to allow spatializing the specific sound objects to be used as a natural reconstruction, which vary according to specific timbral features.

Sorecer enables inhabiting multitple realities through concurrently experiencing a digital 360° space and the physical space. The user-experiencer acquires a dissociated presence that enables to perceive ubiquity, sensory experience expands along the trans-epidermic performative device through which it becomes possible to share the universe of feminine empowerment that we created through this research-creation process.

Since the project beginning in 2016 the process has been displacing the members' professional /personal boundaries, common interest kept shifting from a rabid resistance to sexist violence toward a place of well-being and joy for the simple fact of being together, gathering, laughing, sharing our stories, our bodies, looking for new alliances together. Now we are not the same and, just like the technologic performative device, we declare ourselves in constant movement and mutation, wishing to produce resonance in our findings.

●

More Information

# Kinetophon, thoughts on a process

**RICARDO CORTÉS ESPINOSA**
CENTRO - ESCUELA DE DISEÑO, CINE Y TELEVISIÓN

Towards the beginning of the XXI century, those of us who began to work in relation to art and technology went through a research and experimentation period, which on the one hand opened many possibilities but also represented a risk. We lacked of information (especially in Mexico), doubts and problems had to be solved through mere intuition, based on trial and error, and even proposing projects that sadly resulted in resounding failures: devices that technically never worked, or did work but held no discursive performance.

I am able to recall several projects of colleagues who bravely exposed processes that failed due to different circumstances. But in those years, the main reason was always lack of experience. Although essays and texts that addressed technical, formal and conceptual issues within electronic art already existed, access to them was restricted, they did not elaborate topics in depth, frequently focused on technical matters, and many aspects related to interface design and sensing devices were still being developped, to mention only two aspects of a very complex field.

To talk about art and technology covers an extremely wide range since, on one side it involves each discipline discourse; there are interactive pieces, non-interactive, sound, visual, audiovisual, narrative, performative, etc. On the other, these projects' development may include electronics, programming (which covers many languages), interface design, industrial design and mechanics, to mention just a few edges of this intricated area.

A few years ago I was advising a series of projects and the conclusion was often the same, me confessing inability to cover so many areas. There were five projects, each one used a different programming language: VVVV, Processing, MAX / MSP, Super Collider, Phyton and Java. Two of them involved visual interfaces, one was an interactive performance project, another was a series of sound devices and the last one involved robotics. It is impossible for a single person to cover all those topics.

From my limited experience, I would like to describe a project I started in 2003, which consisted in developing a virtual instrument for dancers.

Music, understood in a traditional way, is considered a language whose symbols and relationships are transformed according to the period, culture and its relationship with other artistic fields.

The 20th century arrived with a revolution that modified not only artistic languages in their form and essence, but also the relations between the different

disciplines, resulting in a kind of exchange, abduction, contamination or transduction. A clear example of this are Hugo Ball's *phonetic poems* which lack of syntactic value (the texts hold no meaning) while they propose to emphasize the sound value of the human voice, standing on the interstitial space between music and poetry.

Natural alliances between artistic disciplines, poetry and music result in a wide range of vocal genres: dance and music were almost completely twinned in the beginnings; theater and music which, among other genres, resulted in opera and kabuki theater (to mention only two).

In this intricate relationship game, different exchanges have taken place, sometimes syntactic, sometimes formal, sometimes conceptual. Take, for example, Japanese taiko orchestras[1], in which the execution gesture is as important as the sound, or flamenco which is essentially dance but where

zapateado is a primordial part of the accompanying music. These disciplinary pairings have affected them, transforming them sometimes formally, sometimes syntactically.

These relationships between disciplines and their possibilities motorized a series of processes within my personal work, leading to various pieces and collaborations whose development revealed a series of issues often solved through trial and error, and intuition.

In 2003 I started a research that turned into a video sensing computer system that identified the coordinates of a dancer's movement: it was named Kinetophon. This kind of projects was not new (although there were no commercial devices like kinect[2] yet). The most relevant precedent is David Rockeby's 'Very Nervous System', capable of generating sound through movement. One of this project's important features was that, through

video sensing, it freed the dancer from cables, sensors and hard-to-handle interfaces, and I decided to explore this option.

During the project development I counted with the collaboration of a young choreography student, Jodie Santo, who immediately made me see that the possibility of designing a musical instrument based on movement posed several problems: the first and most essential is the impossibility to identically repeat a movement in 3 dimensions, in fact fluctuations are enormous. This limitation hampered the design of an interface that could grant the dancer with absolute control, not to mention the calibration processes that would require imitating equal conditions of light, distance, video camera inclination and movement area. Leaving the activation mechanism aside, how to map the resulting values of the computer image analysis? Is each note one position? Should notes last

2. Kinect is a video sensing device developed by Microsot for its Xbox videogame consoles.
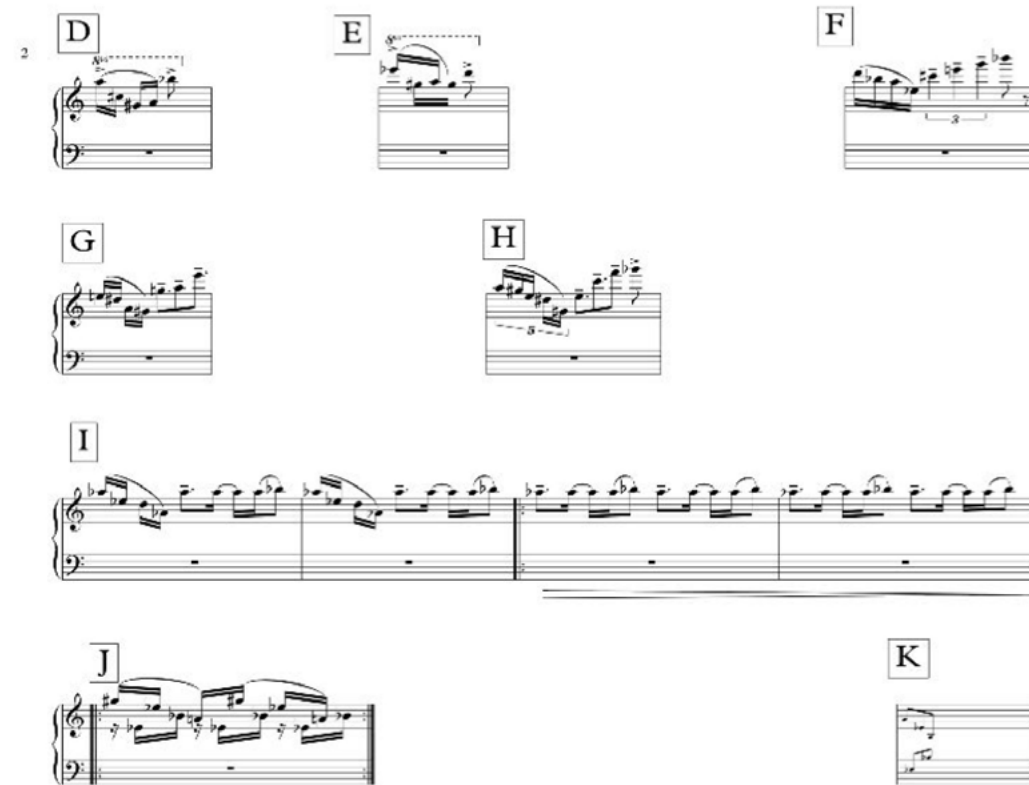
for an element's duration in a specific position or, on the contrary, should durations be independent from the movement?

Multiple questions emerged throughout the process needed answers.

The system had to respect free movement and to be of fast calibration. This was solved by adding two routines that allowed me to modify the reticle accuracy when measuring movement. In this way, I was able to quickly adapt the system to a thin or thick grid depending on what the moment required, and adjust brightness and contrast

in order to add or subtract sensitivity to the process.

There is a wide range of options for assigning values to movement modulation, be they height, timbre, duration or intensity of the resulting sound. The first intuition led to assign height modulation to vertical positions of elements in the frame. The result I could predict before even writing the computer routine was a series of chromatic scales[3], with no utility or interest for this context. So how to relate displacements to heights?

The project was being advised by Maestro José Luis García Nava, who introduced me to

chaos theory and, thanks to his knowledge and support, I found a way to generate note groups whose intervallic was designated by a Verhulst function, resulting in what can be described as a swarm of notes that follow vertical displacements, so the highest positions generate high-pitched sounds and the lowest, low-pitched sounds.

Any system that requires assigning value ranges at a certain scale is by nature arbitrary, as a piano's operating mechanism has arbitrarily placed high notes on the right side of the keyboard and the low on the left, as the lower guitar string is set above and the highest, below.

3.  Chromatic scale is the note sequence by semitones, for example C - C sharp - D - D sharp - E - F - F sharp... and so on.

Once the programming and the interface were solved, the next phase in this project was to develop a series of pieces that would allow to appreciate the device's applications. What is a musical instrument in essence? How to make coherent a discourse that integrates traditional instruments such as the piano with the device? What kind of notation should be used for such a project? Traditional musical notation? Graphic notation? Laban notation? This process' result seemed to yield more questions than certainties.

Laban notation holds a disadvantage, which derives from being a highly deterministic system of a complex phenomenon, it does not offer a contact point with musical notation, it is complex and difficult to learn. The proposal was based on combining the traditional forms of each language. Jodie developed movement patterns divided into themes and I wrote a part for piano in modules. The result was a diagram that integrated the freedom of dancing to the music through the flexibility of writing by modules.

In the original piece the sequence diagram had 2 lines, one corresponds to the piano and the other to the movement:

In order to play the piece it was required that both the dancer and the pianist knew the themes and modules each one executes. This diagram represents the beginning of the piece for piano and kinetophon where, once the dancer is placed in the initial position, the system activates and the piano starts executing its module A; when it ends, the dancer starts his/her A theme while the piano pauses. Each movement theme corresponds to one piano module, until reaching the piano's C module, which must be repeated until the dancer has executed themes C and D. Once this ends, the piano pauses while the dancer executes theme E. The length of each theme or module's square approximately represents its duration, which is not fixed but we can anticipate that dancer's theme B is longer than theme A.

| Piano | A | | B | | C | | | |
|-------|---|---|---|---|---|---|---|---|
| Danza | | A | | B | C | D | | E |

*Piano part fragment written by modules*

.............................................................

4. Distance between two notes measured in semitones.

5. The Laban notation is a system of notation for dance developed by Rudolf von Laban in 1928.
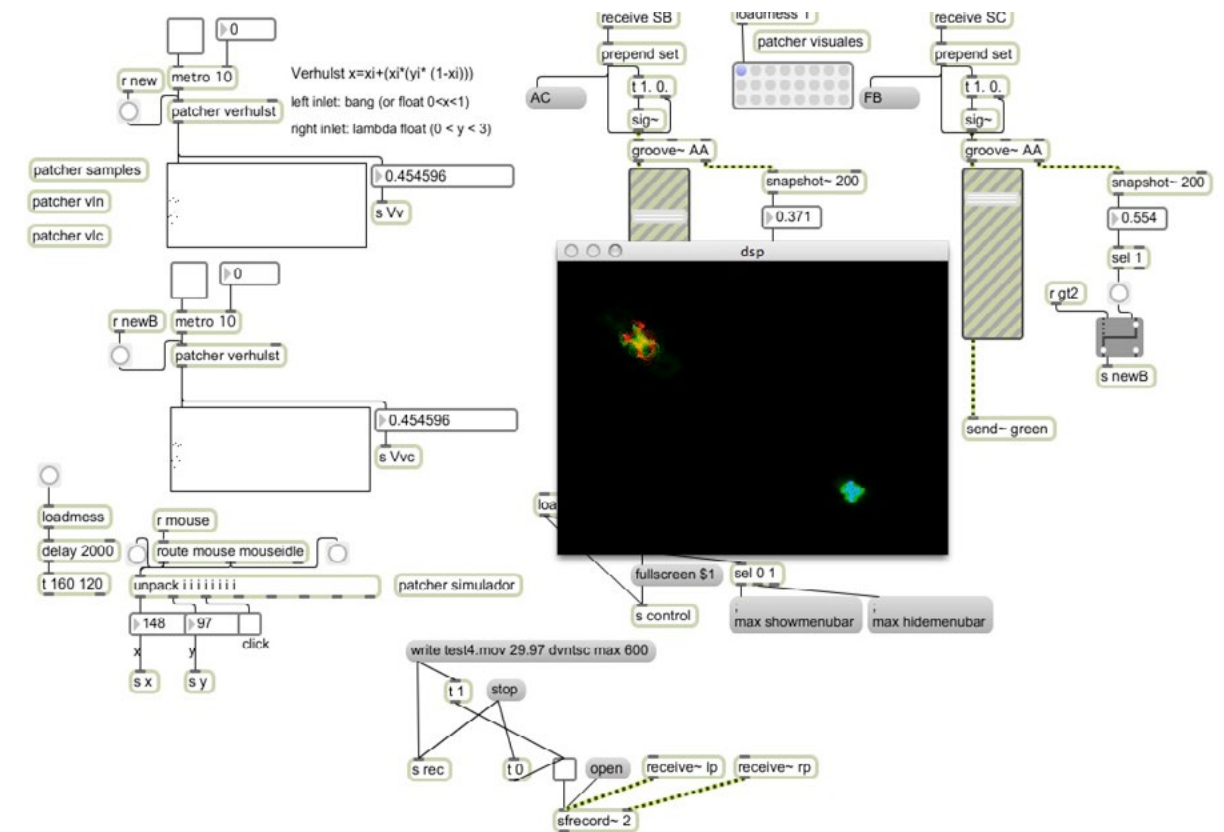
The integration of both languages resulted in a system of free organization but nonetheless based on musical organization. The music is an outcome of the dialogue between the piano and the device.

In conclusion, several lessons were learned from developing this project:

1.  At the beginning of a project it is important to segment the different phases and quickly start to set up prototypes and put them to test.

2.  In principle, all computer systems present a minimum of 3 parts: an input, a process and an output. Although they compound a whole, it is important to know how to segment and test them separately. Sometimes one part may work perfectly even if the others fail.

3.  Collaborative work is fundamental, both for the technical complexity that certain projects present (it is impossible to be at the same time composer, choreographer, programmer, electronic engineer, industrial designer, etc.) as well as for the help that the other's point of view represents. Often the ideas of fellow engineers or stage directors helped me correct or rethink projects and, likewise, my own ideas helped several colleagues in their projects.

4.  Each process and project is different; keeping an open mind and being receptive to change is required. Although engineering and design have their strategies to efficiently achieve a result, it is often difficult to apply them directly to art.

5.  In art nothing is written; to experiment, to try, to propose and to fail are fundamental parts of contemporary processes.

    ●

The result can be viewed here
https://www.youtube.com/watch?v=zQbhUmSA9Rg&t=12s

Edad:00:00:00.35

COLLABORATION

# NETWORKS

### Bioscénica Mexico-Argentina

New transdisciplinary art practices have brought with them new forms of horizontal collaboration, where authorship is a constant collective work-in-progress. Myriam Beutelspacher Alcántar and Ezequiel Steinman articulate the link between Bioscénica Mexico and Buenos Aires, weaving knowledge exchange networks. Activities related to dissemination, learning processes and art creation connect us to civil associations, Mexican Embassy in Argentina, public universities, artists and relevant cultural agents of the Buenos Aires scene.

# Performing Arts and Technology

## Creating scenarios to experiment and produce in transdisciplinarity

**DR. ALEJANDRA CERIANI**
FACULTAD DE BELLAS ARTES, UNLP

In December 2015 we were invited -as interdisciplinary team Speakinteractive- to the event *2do. Encuentro Internacional de Artes Performáticas, Ciencia y Tecnología - Efusión: Código y Producción de Sentido*, held at Centro Nacional de las Artes, San Luis Potosí Centenario, Mexico*. This international gathering, open to all audiences, was attended by artists, theorists and scientists interested in transdisciplinarity applied to performance. Within the different theoretical and practical exchange proposals, our current experiences were shared in order to achieve new collective reflections. Part of this paper will describe how these dynamics of reciprocity have impacted on our ongoing creative strategies.

---

\*      Event organized and produced by Mexican company Bioscénica, Cuerpo digital y Transdisciplina.
Curatorship: Minerva Hernández and Myriam Beutelspacher.

**IMAGE:** RETROSPECTIVE MEMORY <<< *EFUSIÓN*

## INTRODUCTION

The body of work carried out by interdisciplinary team Speakinteractive[1] has focused -alongside presentations and workshops, seminars and conferences imparted domestic and internationally- on the development of free software tools like Moldeo.org[2] and programs (App: application)[3] designed for interactive devices such as cell phones, optical and contact sensors. We share and disseminate our work, promoting the link between performative practices, applied science and electronic-digital technology for the scene.

Our goal at *2do. Encuentro Internacional de Artes Performáticas y Tecnología -*
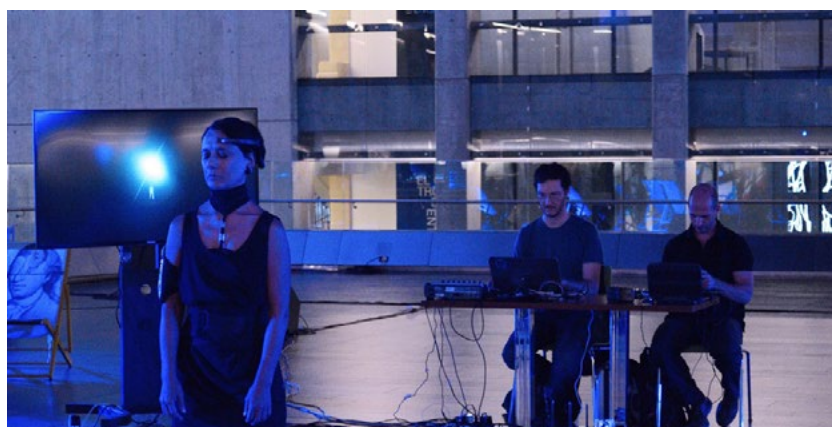


*Efusión: Código y Producción de Sentido, held at Centro de las Artes* San Luis Potosi Centenario, Mexico -after Bioscénica's invitation- was to experiment, reflect and conceptualize on technological mediation in *interactive dance performance* [4] based on the connection between the sensitive and technical world

of machines and bodies. In this context, academic activities, theoretical intersections, reflection labs, conferences, seminar-workshops and live events were programmed. The seminar *Incorporación del Gesto al Espacio Virtual Moldeable*[5] (Integration of Gesture into Moldable Virtual Space) was aimed for visual artists,

programmers, performers, musicians, researchers, technologists with an interest in art, and multimedia art students. Imparted by Speakinteractive team, it encouraged participants to survey, recognize and distinguish categories and emerging features that imply a dynamic and active dialogue between body, technologic means and design for the composition of physical and virtual performance. Whereas the section *Intersecciones + Laboratorios* [6] -discussion around the concept *Código Encarnado* [7] (Code Incarnate) based on each specialist's contents- hosted debates aimed to broaden academics,

creators and audience's different stances.

This framework of activities was expanded thanks to the promoted informal meetings where empathy among colleagues grew and new collaboration proposals took off, something we will discuss in the following section.

## JOINT ARTISTIC-ACADEMIC EXPERIENCES

In regard to these experiences around corporality and technology, we will analyze some contemporary production methods related to the transdisciplinary phenomenon since it allows interdisciplinary knowledge to expand in a dynamic and continuous

process, modifying and reformulating organizational competences, among other things. Again, this leads us to overcome knowledge unity by considering it a means, and to move toward self-transformation through an heterogeneous interpretative synergy, not only between people but also between computer systems loaded with the software sensitive structure.

Regarding the aforementioned path, let us summarize the specific links between artists, scientists and technologists that *2do. Encuentro Efusión* enabled, with whom we have kept collaborating in different academic and artistic events: Oscar Yáñez Suárez

1. Interactive Multimedia Research and Creation Lab by Alejandra Ceriani, Fabricio Costa Alisedo and Fabián Kesler. For more information see URL < http://www.alejandraceriani.com.ar/speak.html >, < http://speakinteractive.blogspot.com/ >

2. For more information see URL < https://moldeo.org/>

3. For more information see URL < http://fabiankesler.blogspot.com/p/max-msp.html >

4. For more on this concept of Interactive Performance see Chapter 2. The shifting from analog to digital, Part 2: Interactive Dance Performance, p.127 to 195. URL < http://sedici.unlp.edu.ar/bitstream/handle/10915/66424/Documento_completo.pdf-PDFA.pdf?sequence=1 >

5. Within the proposed dynamic, Speakinteractive examined their recent interactive performances: Speak Universe which integrates the gesture's expansion and projection potential to an observatory dome; Speak Fractal and Liquid which seek to connect the physical live space with a remote audience as a multiplicity of the body; Speak Ecolecto which projects the gesture as a trigger for sound and visual elements for the deaf community; Speak AI Artificial Imagination which incorporates capture and data processing from electroencephalography (EEG) and electromyography (EMG) sensors, accelerometers, gyroscopes, heart and brain rhythms. For more information see URL http://efusion.bioscenica.mx/cuerpo-analogico-cuerpo-digital-hibrida-ciones-y-alcances-en-el-ambito-de-las-mediaciones-tecnologicas/ >; For images of MX: Encuentro Internacional Efusión see URL < http://www.alejandraceriani.com.ar/fotos_speak.html >

(Full Professor at Electrical Engineering /Universidad Autónoma Metropolitana UAM), Alicia Sánchez (Degree in Art Education, director, choreographer and dancer INBA /UAM), Gloria Mendoza Franco (Coordinator of the Laboratory of Ergonomics, Postgraduate Course at Industrial Design /UNAM) and with host and transdisciplinary company Bioscénica (Minerva Hernández Trejo, Myriam Beutelspacher, Alejandro Ortiz and Ezequiel Steinman). At this point, it is necessary to mention '2016 Subsidio de Viajes y Estadías' mobility support granted by Secretaría de Ciencia y Técnica at Universidad Nacional de La Plata, which partly enabled the

gathering and achievement of three activities that involved the following academic spaces and their specialists:

1. Posgrado en Diseño Industrial (Postgraduate Industrial Design Program) at Universidad Nacional Autónoma de México (UNAM), where we developed a research line in Human-Robot Interaction (HRI) in charge of Prof. Gloria Mendoza Franco, with the purpose of experiencing the possibilities and potentials of social robotics in art. Related activities were performed around a seminar imparted on social robotics and practical exercises with robots. We focused on both observation and experimentation of humanoid robot NAO's

movements and articulations. As a follow-up of this activity we based ourselves on certain premises and questions raised by human-robot interaction: Can the robot imitate a dancer's quality of movement? Where does the difference lay (beyond the obvious)? Could humanoid movements become more empathetic than those of a trained body? These premises lead to the project, not yet produced, of an interactive performance dance piece with robotics where the code implemented in the robot's program allow to combine its movements with the performer's. On this project we have a series of rehearsals recorded and edited on video[8] from the experience held at

UNAM Ergonomics Laboratory. Related to this, we promoted the opening of the workshop *Taller de Programación y Robótica Orientado Al Arte* [9] (Programming and Robotics for the Arts) in an Art Education school for children and the young, still ongoing.

2. *Coloquio Latinoamericano de Investigación y Prácticas de la*

*Danza, Visiones Contemporáneas desde la Escena* (Latin American Colloquium of Dance Research and Practice, Contemporary Visions from the Scene) VISCESC[10], by Prof. Alicia Sánchez and Prof. Alonso Alarcón; to moderate and present a lecture at a Magisterial Conference in 2016; and publish in INTERDANZA, Instituto Nacional de Bellas

Artes' Dance specialized magazine[11]. Also in 2018, as part of the Scientific Committee of 3er Coloquio Latinoamericano VISCESC INBA-México with the purpose of linking and strengthening Latin American dance community.

3. Laboratorio de Investigación en Neuroimagenología (LINI

6. For more information on this concept see URL < http://efusion.bioscenica.mx/interseccion-laboratorio/>

7. For more information on this concept see URL < http://bioscenica.mx/wp-content/uploads/2017/06/Reporte_Efusion_Biosce-nica_web.pdf>, page 12 and 15

8. See YouTube channel "Observing the movements of the Humanoid Robot NAO 1", URL< https://youtu.be/xYAuoY3lxpF>; and "Observing the movements of the Humanoid Robot NAO 2", URL < https://youtu.be/alpcAlRa7og>

9. For more information on the workshop *Programming and Robotics for the Arts*, an extra-curricular activity open to the community at Escuela de Educación Estética N° 1 Dirección General de Cultura y Educación de la Provincia de Buenos Aires. La Plata, Argentina. See channel on Facebook URL < https://www.facebook.com/groups/683333871859206/ >; https://www.facebook.com/escuela.estetica1/photos/pcb.1935018103284318/1935012936618168/?type=3&theater

10. More information at URL < https://coloquioviscesc.files.wordpress.com/2016/08/primer-coloquio-latinoamericano-de-inves-tigacic3b3n-y-prc3a1cticas-de-la-danza-viscesc-2016-cdmx.pdf >

See lecture "El cuerpo en los tiempos de la digitalización: La corporalidad expuesta" (The body in times of digitalization: The exposed corporality), Vimeo video channel URL < https://vimeo.com/182104487 >

11. More information at URL < https://issuu.com/interdanza/docs/interdanza37_issuu>

**II JORNADAS**
**CUERPO, PERFORMANCE Y TECNOLOGÍA EMERGENTE**

Encuentros
Arte y nuevos medios en las
...ticas artísticas contemporáneas

MARTES 25 DE ABRIL / 9 – 12 HS
SALÓN DEL CONSEJO SUPERIOR EDIFICIO DE LA PRESIDENCIA UNLP, AV. 7 Nº 776

- Neuroimaging Research Laboratory), part of Digital Signal Processing and Biomedical Imaging Area of the Electrical Engineering Department at Universidad Autónoma Metropolitana (UAM), Iztapalapa Unit, in charge of Prof. Oscar Yáñez Suárez to experiment with the processing and analysis of brain information

(electroencephalography EEG) connected and transferring data to open source software Moldeo.org. In two consecutive days of work it was possible to sense and control -through a peripheral device called *Emotiv Epoc*[12]- Moldeo.org[13] software visuals. Further down this line, we learned more about these components: electroencephalography (EEG)

and electromyography (EMG), which while they belong to the medicine field its use has expanded to artistic tests and productions through the commercial proliferation of devices that measure brain and muscles electrical activity.

Then O. Yáñez visited Argentina in 2018 and, besides taking part in another working session, he

contacted us with Laboratorio de Electrónica Industrial y Control (LEICI [14] - Industrial Electronics and Control Laboratory) at Engineering School, UNLP, CONICET. In association with them we undertook -ongoing still- a joint research process and artistic-scientific production.

Likewise, we managed to formalize other collaborations from Universidad Nacional de La Plata, Argentina. In the framework of *Cátedra Libre De Educación y Mediación Digital en Danza y Performance*[15] (Education and Digital Mediation in Dance and Performance Open Program)

which hosted Myriam Beutelspacher and Minerva Hernández (Bioscénica, México) for the presentation of their book 'Encuentros. Arte y nuevos medios en las prácticas artísticas contemporáneas' (Art and new media in contemporary artistic practices) on the occasion of *II Jornada Cuerpo, Performance y Tecnología Emergente*[16] (2nd Conference: Body, Performance and Emerging Technology). Also in 2017 we co-organized a videoconference entitled *I Jornada Internacional Cuerpo, Performance y Tecnología. Tensiones Poéticas*[17] (1st International Conference

Body, Performance and Technology. Poetic Tensions) articulating nodes Spain-Mexico-Argentina, around the pairing performance arts and technology.

The earned value of these exchanges lays on exercising a critical look over technology in relation to bodies and vice versa, retrieving empirical knowledge generated through interdisciplinary artistic practice towards the configuration of the transdisciplinary in order to find the poetics of the body, of science and of technology.

---

12. For more information on this device see URL< https://www.emotiv.com/epoc/>

13. Part of the experience can be reviewed in YouTube channel "EEG en la investigación artística transdisciplinar" (EEG in trans-disciplinary artistic research)", URL< https://youtu.be/Wy8Evyh5y1U>

---

14. More information at URL < http://leici.ing.unlp.edu.ar/>

15. A "Cátedra Libre", an Open Program, is created to promote areas of culture and knowledge that don't fit in any specific curricula of the degrees imparted by Universidad Nacional de La Plata, Argentina. *Cátedra Libre: Educación y mediación digital en Danza Performance* was created March 14 2014 by University Presidency through resolution No. 108 / 14y, designating Dr. Alejandra Ceriani as Director. More information at URL< https://unlp.edu.ar/catedras_libres/catedra_libre_educacion_y_mediacion_digital_en_danza-6500>;<http://tecnologiaydanza.blogspot.com/>; <http://www.alejandraceriani.com.ar/catedra_libre.html>

16. See YouTube channel  *II Jornada Cuerpo, Performance y Tecnología Emergente. Parte 1* URL https://youtu.be/USh0Sz6h5zs; and URL < https://1.bp.blogspot.com/-zDUDEuZ2rdY/WPNmabzhEzl/AAAAAAAAAUE/w1vR-MWk8n-0FhFmRwuK2AjzDSbSVUlMOwCLcB/s1600/flyer%2Bjornadas_2017-04.jpg>

17. For more information see URL< http://tecnologiaydanza.blogspot.com/2017/11/blog-post.html>; < http://www.alejandrace-riani.com.ar/pdf/catedra_libre_2017.pdf>

**ART+SCIENCE JOINT RESEARCH AND CREATION**

Artistic production in dance performance with interactive technology holds as one of its interests to research new ways of linking the body to the behavior of computer systems. Basically, it means to focus on the strategic direction of transdisciplinary artistic production, studying interaction forms as a whole in real conditions, considering the relevance of processes rather than results. This allows us to manage projects from a mainly processual and relational perspective, where epistemological contents -produced by hybrid joint practices such as computer scientists, scientists and artists as much as policies and cultural

strategies- achieve here their full scope. In words pronounced at the Master Conference 'It is time to think the anthropocene! A manifesto'[18] by Jean-Marc Chomaz (2015):

...............................................

*What could be the sense of a scientist becoming involved with art? I have thought about it for a long time: Where does it come from, this acute sense of urgency and this intimate conviction that scientific dissemination for a general public is mostly difficult and inadequate?*

*This rising question is paired with the intuition that we, the scientists, should reveal the other side, dark and luminous, somber and sublime –the side we do not control and do not even understand,*

*but where true progress and true discoveries take place– and with the need to end our soliloquy and allow the story to be told by the public, in a flow inversion that will then allow the 'interaction' and the public's ENTRY-CONTRIBUTION (INPUT) to be injected into science for its enrichment.*

...............................................

Following this chain of questionings by J-M Chomaz, we propose a reversal of his approach in order to ask ourselves: What kind of interest can the work of a scientist raise in artists?

We understand that, broadly speaking, science-art relationship is one of mutual influence, agreeing that applied science attempts to solve specific problems or create products that mean an



inspiration and mediation in the technological development, which in the last years has transformed the way of conceiving, experiencing and producing art. Another contact point implies methodology. If science presupposes the construction of both the object of knowledge and the most appropriate method to

interpret it, there wouldn't be much difference because likewise art constructs an interpretation of reality. Then, what would this supposed distinction, this superiority of the sciences be? From the viewpoint of the positivist scheme of scientific knowledge dominated by its internal logic, the rationality

pattern is instituted and, therefore, it establishes itself as a superior, indissoluble mode of knowledge. In this context, how could a transdisciplinary collaboration be conceived, when traditional scientific research holds a methodological habit that tends toward a 'ghetto effect to which researchers are exposed

_____

18. For more information see URL http://efusion.bioscenica.mx/jm-chomaz/.

in the enclosure of their strict specialties' (Bourdieu, 2010: 105). To consider the limits of our expectations regarding new ways of articulating art and science leads us to the following question: Could the development of scientific progress be conceived as a path of poetic or metaphorical improvisations? If a bolder approach could be achieved, we would coin a new meaning for it: the consanguinity between sciences, technologies and the arts as a way to modulate more accessible configurations of knowledge. Consequently, the subversion strategies that J-M Chomaz exposes therefore represent a global rupture with the principles of traditional science. In any case, for both science and art processes we must keep 'a critical gaze

of suspicion and alertness against possible asymmetries at the risk of perpetuating old hegemonic categories' (Marcos B., Hernández M., Beutelspacher, M. 2016: 126)

We recognize that this transdisciplinary creation and research paradigm is conformed by a complex combination of theory and practice; that it calls for transcending the disciplinary in order to achieve cooperation in a broad epistemological framework and resorting to hybrid methodologies that seek to integrate the different orientations of studies, basic principles, configurations, approaches, techniques, processes, instruments, and so on. Speakinteractive's artistic research proposal crosses through four fields

of knowledge and praxis: art, body, dance performance and technology, their practice and hybridizations, their operating dimensions, understanding the development of disciplinary and interdisciplinary fields. Along this route, actions of conceptual and emotional nature merge, according to each production's context, towards a paradigmatic transdisciplinary act. The means and sequences of actions are observed, analysed and determined, as well as the instruments and resources necessary to detect body procedures in each technological context. In its latest version called *Imaginación Artificial I.A* [19] a new online adaptation of Moldeo. org software (JS version)[20] was added for wireless and mobile sensors (accelerometer

and gyroscope) -of own manufacturing- plus the capture and data processing from bioelectric sensors EMG, EEG, ECG, in order to integrate this information into a free hardware and software platform. In the live performance this discussion is posed:

.............................................. .
*Is it possible to transpose our emotions into zeros and ones? Can an interactive performer convey*

*his/her body information over the network? Are the sinusoidal waves the graphics of our passions? Can a large audience imprint a gestural thought on the performer? What would be the critical mass required to induce these phenomena? Can imagination be artificial?* [21]
.............................................. .

 We keep looking for answers to guide our practices toward the design of other conceptual and experimental scenarios

that communicate the binding processes of interactive dance performance with new technological poetics. We promote  transdisciplinary research and production between science and art, as well as encouraging the cognitive and sensory exchange of those who practice it.

●

MORE INFORMATION
www.alejandraceriani.com.ar

**BIBLIOGRAPHY**

Bourdieu, Pierre (2010), *La dominación masculina y otros ensayos*, Buenos Aires, Anagrama.

Ceriani, Alejandra (2015), *Génesis y desarrollo de la escena tecnológica de Buenos Aires: estudio de lo digital en la danza performance* (1996-2016) [online]. (Genesis and development of Buenos Aires technological scene: a study of digital dance performance (1996-2016)). Available at: <http://www.alejandraceriani.com.ar/pdf/TESIS_DOC.pdf>.

Marcos Pérez B., Hernández Trejo M., Beutelspacher Alcántar, M., (2016) "Translab: artes performáticas + tecnología" in *Encuentros. Arte y nuevos medios en las prácticas artísticas contemporáneas*, (coord.) Célia Riboulet, Universidad Autónoma Metropolitana, México, Juan Pablos Editor. ("Translab: performative arts + technology", in Encuentros. Art and new media in contemporary artistic practices.)

**WEB LINKS**

http://www.alejandraceriani.com.ar/.
http://www.speakinteractive.blogspot.com.ar/
http://www.moldeo.org/.
http://tecnologiaydanza.blogspot.com/.
http://bioscenica.mx/.
http://fabiankesler.blogspot.com

---

19. For more information on this 2018 interactive performance see URL < http://speakinteractive.blogspot.com/ >

20. More information on this version of Moldeo in JavaScript: URL < https://www.moldeo.org/blog/developers-of-mold-7/tag/9 >

21. Watch the stage performance on YouTube channel "SPEAKINTERACTIVE Inteligencia Artificial I.A.", URL < https://youtu.be/L6l88afW-gI > from 00:00 to 00:58.

# Artificial Grandparents
## at Laboratorio de Interactividad Corporal

**EZEQUIEL STEINMAN**
BIOSCÉNICA ARGENTINA

### Biometrics vs Biography

Between stage piece and performance installation, *Artificial Grandparents* sets its ground in mechanisms of memory and identity construction, in the tension of the subjective and the collective.

Through a present body first-person report, we build -dismantle, overwrite- the house that Constanza Casamadrid (Mexico, 1990) remembers with great detail although she was never there, where her grandfather and mother were born, all forced to exile to Mexico in 1976. Exploring the house interiors -virtual, affectively real-, she and the *artificial grandparents* inquire why she refuses to ask permission to enter the actual house, located in Zárate, Buenos Aires Province.

The artistic residency Laboratorio de Interactividad Corporal[1] (LIC) hosted the project March to September 2018 at Centro Hipermediático Experimental Latinoamericano (cheLA), Buenos Aires. Framed by the slogan *exploring relationships between technological-biological body and memory*, we tested OpenPTrack software[2] (OPT) for multitracking or real-time tracking of bodies and objects in a sensitive stage.

---

1. Residence "Laboratorio de Interactividad Corporal" CHELA-UCLA-REMAP 2018
http://chela.org.ar/modulos/laboratorio-de-interactividad-corporal
https://remap.ucla.edu/laboratorio-de-interactividad-corporal/
2. http://openptrack.org/

The OPT device, designed and assembled by a large team of researchers-artists, REMAP /University of California (UCLA), involves a kinect camera network set up at the upper corners of a sensitive stage to survey numerical variables of the positions, trajectories and durations of different bodies and objects, freeing the performing-interactive action from a fixed viewpoint. Being able to send data from OpenPTtrack via OSC allowed the interaction with multiple video projections processed in TouchDesigner, and to create real-time quadraphonic sound compositions through Ableton Live and Pure Data.

The detailed blog[3] Constanza carried out during the process describes an initial concern:

> The project began around the idea of a projective or hypothetical narrative piece about postmemory (Hirsch: 1996), a powerful form of memory whose connection to its origin is not mediated by evocation but by imagination and creation. It refers to the experience of those who grew up with dominant narratives related to events earlier than their birth and therefore not fully understood or recreated. They involve family memories shared through oral narration that, although not experienced by the interlocutor (they cannot be recalled), they internalize in order to give rise to new memories through the imagination.

---

3. https://constanzacasamadrid.wordpress.com/2018/05/07/lic/

To our purpose, postmemory frames an uncanny field of memory dissociated from experience, a kind of imaginary implant that travels through the emotional charge of family discourse and omissions, and strongly influences present experience and decision making. An example of this lays in Coni's expressed impulse to buy that house again, even if nobody in her family lives in Argentina anymore. The Zárate house condenses this phenomenon and provides us with a task to be carried out, assembling it as an interactive virtual environment.

How is this device articulated narratively? In terms of language code, the **documentary line** is strong in the project. Coni's grandfather made films as a pioneer action journalist and one of those films was the cause of his exile due to the military dictatorship. With such expeditionary spirit we drove to Zárate (100 km from Buenos Aires) to find the house and try to get in. We recorded her arrival to the house and re-enacted the picture of the facade Coni took in 2015, attempting to synchronize ourselves with that fascination.

4. In "Tiempo Pasado: Cultura de la Memoria y Giro Subjetivo" (Past Tense: Memory Culture and subjective turn), Beatriz Sarlo rebates Marianne Hirsch on the need to use the prefix "post" for redundant and states that it is only one of the complex mechanisms of memory. However, it is useful for us to name the problematics of a tangible affective image while not the result of personal experience, therefore 'inherited'. Precisely, *Los Abuelos Artificiales* is thought as a way to restore an experience to that house-image in order to enable an operation in that memory.

Constanza firmly refused to ring the buzzer, which we read as a relevant narrative piece of information rather than an obstacle. Thus, we consider this vector toward the actual house that dead-ends in the idle buzzer as an empowerment of the interactive **virtual line**. The personal fragility that this process unfolds down the path of Constanza's family biography is reinforced when its contact with History is recovered, enabling the collective's support.

The instrumentation meant in resourcing to the concept of postmemory becomes operational through the OPT device, providing us with a task that is already more shearable than merely internal, and it is mediated through the house, setting the body in relation to that mediation, in order to start demarking what really comes from her experience and what is inherited. It is on this mediation process that the staging is based, in a tension between the biographical documentary line and the virtual, biometric.

From another angle, the virtual path enables us to displace biographical mediation and its complex family bonds toward another type of mediation in which we can participate as a collective, related to locating, for example, affective day-to-day ambient sounds in a house that now we can all -including spectators- inhabit and feel, no longer the biography bearer's exclusivity. The most important thing is that this virtual mediation becomes a way to externalize a second-hand experience which, as an intruder or a parasite, it operates conditionings by nesting inside identity-conforming mechanisms.
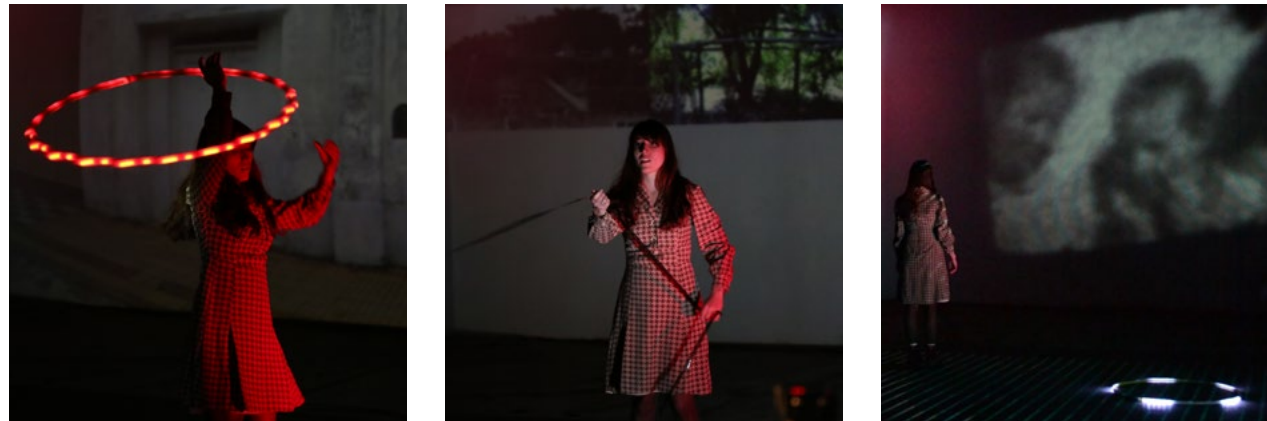
## II.

Body interactivity bases itself in biometric information. The Residence initiated with this system already set up and functional by the REMAP team so, from our perception, upon entering the place we already felt the presence of an expectation, a constantly active receptivity. Tracing color lines in a large monitor, it did not tell performance from preparation, occasional transit from intentional movements, each and every movement was indistinctly sensed and real-time represented. A genie already out of the lamp with its ear in our throat, ready to read the mere thought of a word as a command to fulfill.

*Los Abuelos Artificiales'* premise of making biometrics engage biography and back, sought to make that tension tangible and to allow the emergence not only of new forms of interaction between these two instances, but -if lucky- of new meaningful solutions. So we tried to make the OPT resources excite the *dry* (Roy Ascott) machine affinity in our *wet* inquiries.

*While you explore a quote/unquote HOUSE*
*we analyze what kind of truth is waiting for you there.*
*Or if there is nothing.*
*Or if it is something better not to remove.*
*Because you are not doing anyone a favor*
*fulfilling things you believe truncated for others,*
*nobody is asking you to do it.*
*Neither do we, the artificial grandparents.*
*We ask nothing from you*
*We are here for you,*
*at your disposal.*
*You make us*
*and we make you this house.*

This strategy of assimilating the default algorithmic variables of REMAP's system can be traced in the *grandparents'* expressive language, heard as voice over. When it detects a body entering space, the OPT assigns it with an ID and tags a name to it. Since 'identity' is a most relevant variable in our story, reverberations become unstoppable and algorithmic terms start to work both ways.

The system's different analysis levels of these data were meaningful to us, the kinetics -speed, acceleration, trajectory- and especially the more complex ones, names that began to sound almost poetically when said by a computer: 'age', determining permanence in a sector, 'confidence' when one identity remained the same versus the risk of getting confused with another ID present in the sector, or if it left the area.

## III.

When integrating technology to the stage, it is within dramaturgy's reach to nourish the behind-the-curtain dilemma: if operation will be hidden or otherwise become stage material. Into this last direction, it helps identify roles and functions, that is to say, a system of relations and forces, hierarchies of spaces...

In *Los Abuelos Artificiales*  the collective effort to assimilate and juxtapose ourselves to the OpenPTrack activity provided us with the elements to put to the test this idea of some artificial ancestors who, while collaborating and emotionally embracing her, they influence Coni's actions. The piece's way to express this is that, while conditioning her identity (building the house with our biased means), we configure ourselves from the broadest range of identity options: indistinct in our gender division (male - female voice), delocalised in our mixed accent (Mexican - Argentinean), time-wise dissociated and mediated (amplified live and recorded voice), *dry* and *wet* (robotic / human voice - direct but interactive ambient sounds - digitally animated freehand drawings). We were visible to the audience but just off the sensed space. We sought to organize our presence and actions as a fold or virtual mirror of a concern about identity and its limited options in the face of an apparently open interactivity.

Present audience is by extension affected by this *grandparents'* polyvalent operative feature because that is how the non-sensed space is configured. A nearby monitor sketches all onstage movements, everything that the system /the grandparents 'see'. Thus, we outline a spectator who feels and 'senses' at the same time. Identity is also a form of control.

In this manner, our work sought to transcend the input body (the performer). We intervene the technological device when we blend into it in order to compose an actant. OPT's expectation is absorbed from a biographical intentionality, meaning that its data can be read from a historical perspective, integrated to an existential becoming, capable of solving the traps of a postmemory originated in the traumas of recent past.
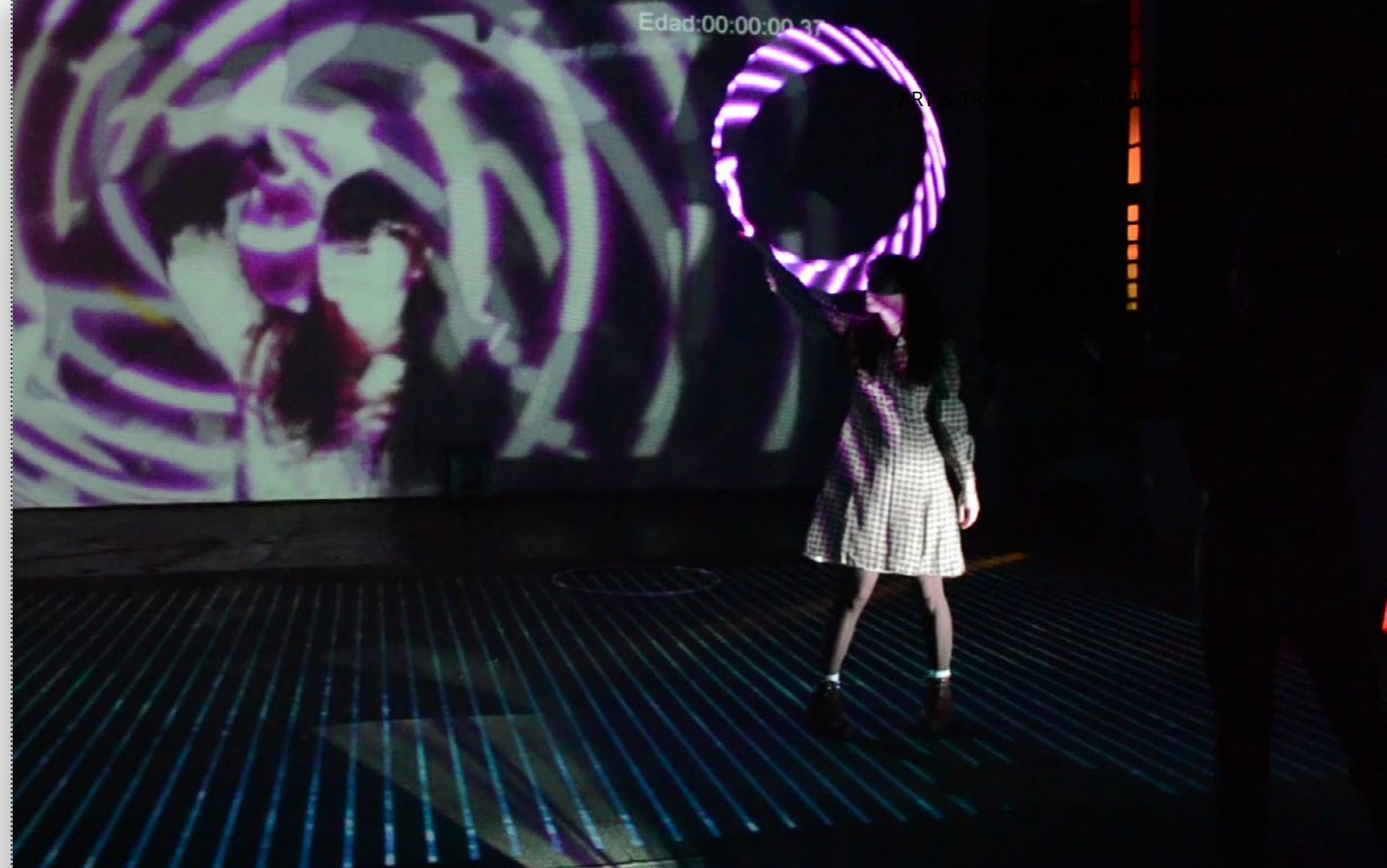
We believe that it establishes an ethical stance, a stake, to choose building Constanza's house based technologically on her 'post-memory', charged with affection, with intense blurred limits, leaving the fascinated imprint at reach -the facade she will not go through- as a mark of empowerment. It clarified the way for us, to face such a digital modeling in contrast to the archaeological reconstruction of an abandoned house, a ruin, in order to provide continuity to a revelation of the same nature, affective. And to reconnect the experience into a memory that originally lacked from it. Here the virtual aims to emerge as a path to solutions that spread beyond the sphere of the individual or the familiar, more like the adoption of an expanded family, a gang of artificial grandparents.

## The sound of memory / the memory of space

The sound exploration through OpenPTrack led the main line of action of *Artificial Grandparents*. Considering the biodocumentary element in Constanza's storyline, reinforced in her closeness to her grandfather's profession, the house construction was based on spatialized real-time distribution of tracks, different room ambient sounds and day-to-day situations activated on Coni's exploration of the projected blueprint she drew free-hand. The recorded sounds

provide the source's verisimilitude while demonstrating their built character; the discourse is what holds its relative truth rather than the veracity of its source.

The freedom to conduct the listening of the different 'inhabited' environments, strengthens our performer's presence -who is designer and programmer, rather than a trained actress. The device renders a *natural* scene by merging interactive techniques with real-time decisions, avoiding any repetitive fixation of cho-reographed sequences. The goal is a constant updating of a living process, as described by Ezequiel Abregú, the piece's composer and live sound performer:

> The sound proposal of Artificial Grandparents *aims to provide an* utopian *solution in terms of space creation. That is to say, the space we are building, no one knows for sure how it looks like or how it sounds. And since sound, as a perception, is dependent on the time it occurs, we decided to approach the sound experience as the revelation of a place being discovered in and through time.*
>
> How does the singularity of memory take place? The sound experience in Los Abuelos Artificiales *sets diffuse limits. An aural architecture (that is, space orientation by means of audible clues) became an interesting idea that also impacts discourse-wise. To build a recollection, a house, its singularity presenting blurred uncertain boundaries, describes an experience that can only be completed through the artificial grandparents collective entity actions and the viewers' active listening.*
>
> What we call 'the house of sound' could not exist if there was no one there to inhabit and experience it. By having minimal visual clues, this part's sound acquires perceptual relevance since the space construction emerges not only from the sound material: space blends in with memory.

5. *Los Abuelos Artificiales* in 'Noviembre Electrónico' festival at CCGSM: http://www.noviembreelectronico.org/pro-gramacion/los-abuelos-artificiales-conferencia-performatica_a225



## Creating process disassembling a process.

### Lecture-performance at Centro Cultural San Martín

The act of sharing resulting reflections from the lab experience might contribute to knowledge production in the theoretical field. It could lead to recognize performing arts' interdisciplinary and transdisciplinary methodological strategies along the creation jour-ney of a poetic device.

In November 2018, although half the team -including our perform-er- was abroad, we accepted to take part of Noviembre Electrónico Festival[5] mostly as an exercise to retrace an intense complex process of technical, compositional, thematic experimentation, holding as a trigger-question *Can the Artificial Grandparents replace Constanza for her avatar?*

Could this be performed with an avatar as a biography support, as first-person testimonial? We decided to discuss, in lecture-performance format, the value of the singular support: would the absence /digital replacement of the performatic body modify the biographical substance of the work? What kind of representa-tion problems would arise? To what extent and in what sense our dramaturgical-technological device could be opened to a participa-tory experience?
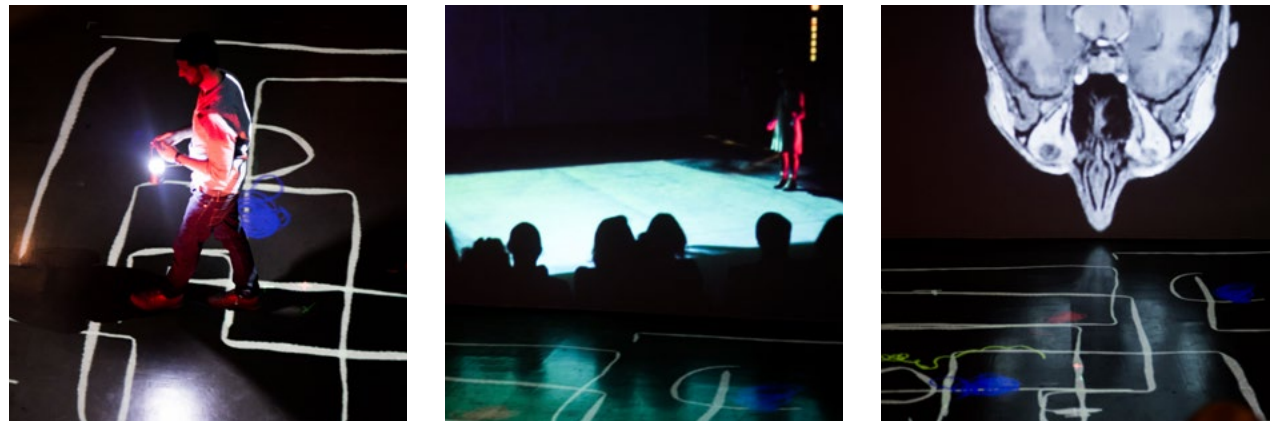
So, could singularity be replaced, if not by a degrading generalization, with another singularity? The narrative path of desiring reconstruction and reterritorialization is not compatible with anything other than an affective commitment that appeals to those present and defines the exchange parameters between spectator and scene.

So we made a call to the collective body's imaginary. In our lecture-performance we invite the present to recall and choose the object that best evoked their own grandparents' house and then step in to explore our 'house of sound' scene. Then we heard their stories in which these houses' space were evoked instead of Coni's. Through live drawing, the artificial grandparents sketched the spaces that audience members remembered and, as a visual 'inhabitable' experiment, the blueprint was projected on the stage floor.

This mnemonic exercise was a fundamental part of our process, a methodological resource we opened in this public instance in order to activate an empirical environment that allowed us to produce memory. Reconstruction-activation-living process, not to store or fix a structure. That would be easier to overwrite.

With 'empirical conditions' we mean to measure the value of generating a very unrealistic environment such as ours. We believe it is possible to create and set in motion an affective reality unrelated to the degree of realism, nor with the illusion of a virtual or augmented space, but with a degree of affective actualization applied to the technological context.

Any displacement of the singularity on which the project was originally based, the Zárate story, might work when integrating other affective singularities. Sharing its activation process invites similar affections when evoking their homely environments which could enable a new 'session' of *Artificial Grandparents*. The singularity would change but not its sensitive -rather than sensed- ethics that conforms this performing technological experiment.

●

MORE INFORMATION

Video (trailer): https://www.youtube.com/watch?v=_txioiVPIx4

---

*Cast / Crew*
*Los Abuelos Artificiales*

*Performance:* Constanza Casamadrid UNTREF/Diáspora

*Multimedia Design*: Myriam Beutelspacher UNTREF/Bioscénica

*Interactivity Design:* Juan Camilo León Sarmiento UNTREF/Diáspora

*Programming:* Juan Camilo León Sarmiento, Luciano Toledo, Constanza Casamadrid

*Sound Design and Original Music:* Ezequiel Abregú UNQ

*Dramaturgy, Stage Direction and Video:* Ezequiel Steinman UBA/ UNA/Bioscénica

**Laboratorio de Interactividad Corporal 2018**
**cheLA (Centro Hipermediático Experimental Latinoamericano):** Santiago Núñez, Belén Tondo, Francisca Armando y Federico Roitberg.

**REMAP (Research Center in Engineering, Media and Performance)** at UCLA  (University of California, Los Angeles), Jeff Burke (director), Jared J. Stein (dramaturg), Zoe Sandoval, Sam Amin, Peter Gusev, Matthew Ragan, Georgi Atanassov and Petko Tanchev (Remap team).

# *Dialog Loom*

**MARCELA RAPALLO**
UNIVERSIDAD NACIONAL DE LAS ARTES DE ARGENTINA

**On September 7 2011 20:11, Myri Beutelspacher
<myriam.beutelspacher@gmail.com> wrote:**
*Hello Marcela!*
*Looking at the program of Seminario de Narrativas Hipertextuales' I came
across your work and got interested.*
*I am Myriam Beutelspacher, I live in Mexico, and my work holds similar inter-
ests to yours.*
*Let me share you my blog: http://habitat-draw.blogspot.com which involves
an intermedia performance, drawing with infrared devices, ipod, candles and
wiimote. On the entry 'September 2008', I describe the project's general ap-
proach.*
*I work at Centro Multimedia, Centro Nacional de las Artes and I am currently
conducting a research on Performing Arts and Technology called Translab.
Hopefully collaborations and more feedback will come in in this direction. For
now, and with your permission, I will include you in our database as a refer-
ence to Latin American intermedia artists, what do you think?*
*Best wishes, what a great pleasure knowing your blog and work.*
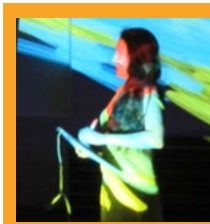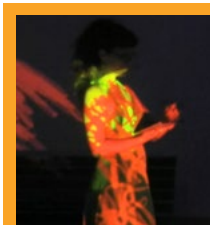
**On Thurs., Sept. 8 2011 at 12:40, Marcela Rapallo
(<marcelarapallo@gmail.com>) wrote:**
*Hello Myriam, how's it going? Thanks for writing, I was going through the blog, I
really liked the video! So very interesting work. I would like to know more about
your processes, to exchange and collaborate. And of course you may add my
reference, great! Let's talk soon.*
*Regards!*
*Marcela*



**This** first email ex-
change introduced
me to Myriam. I was delighted
to finding someone with com-
mon research subjects. I was
exploring with sketching as
performance, the possibilities
of transposing drawing to the
stage through projections and
real-time image manipulation
programs, turning drawing into
an art of time.

I was also excited to find a dif-
ferent imprint within a com-
mon ground. I feel that when
we find common interests with
colleagues, the nourishing parts
come from both the similar and
the different, which is the oth-
er's singularity. My live-drawing
experience began in 2001,
after doing group drawing for
a long time, producing works
that emerged from dialogues
with other artists. From collec-
tive sketching grew a need for
the stage, and that sense of

dialogue remained a distinctive
concern in all my projects.

I perceived an important close-
ness in our work, telling by the
project Myriam shared in her
first post, *HabitatDraw*, some-
thing beyond the techniques,
the concepts and subjects she
addressed there. Something
about they way we employ and
explore digital technologies in
our works. What we want to
express or convey. And there
was something in that inti-
mate space of a self-drawing
home, and in her work related
to fire I later knew, developed
in her Master Degree Thesis
in Argentina, which deals with
approaching new technologies
from a primary and sensitive
standing point.

At that time I was doing Draw-
ing Aleph, my equivalency
thesis for UNA, related to my
live-drawing research. In this

context, I took a workshop with
theorists Alicia Romero and
Marcelo Giménez, who made
an observation regarding that
process: a possible hypothesis
could involve the possibility of
using the latest tools like the
first were used. That observa-
tion meant a key to understand
what I was looking for in live
drawing and when developing
Free Software tools. Every ef-
fort related to technology and
aesthetic language was put at
the service of freehand draw-
ing, allowing it to be amplified,
to sketch physical places, ob-
jects, buildings, and to become
animated, an actor, or a dancer,
or to express itself in time, like
music.

Cutting edge technology was
being developed to bring back
one of our species' primary
languages: freehand drawing. A
step forward could be taken to-
wards new media, while at the

**2016-06-11 12:24 GMT-03:00 M R wrote:**

*Hi Myri!*
*I'm sharing Trazos Club info for Minerva. I attach a text with project data and hyperlinks, two images of the cover design progress, and an updated info page.*
*(...)*
*Hug!*
*Marce*

**El 12 de junio de 2016, 21:28, M B wrote:**

*Awesome!!!!!*
*Info looks great, thank you, very complete: D!*
*(...)*
*Let's think of a title...*
*Trazos.club Launching. Online Collaborative Drawing (AR-EU)?*
*Trazos.club Mexico Launching. Online Drawing Open Platform (AR-EU)?*
*...It's on!*

**2016-06-14 16:39 GMT-03:00 M R wrote:**

*I think that's perfect!*
*Conference-like, and we can discuss back and forth between the three of us :)*
*I like that title:*
*Trazos.club Mexico Launching. Online Drawing Open Platform (AR-EU)*
*Should I write you cc:Andrés as an introduction, so we discuss it by mail a little bit?*

---

same time it meant a step back in order to engage in a dialogue with the past, because live drawing enables it to manifest itself as other time arts, such as oral narration. That is what we explored in the first piece we did with Moldeo, Cuentos animados.

About this process, Juan Garff wrote: '(...) Images hold a unique artistic quality but, at the same time, a dreamlike theatricality that binds the narrative features, or even better, the personal reading, with the dynamics of stage representation. (...) Thus, the technological resource is transformed into an artistic tool. And the journey, animated by narrative stations, becomes an unprecedented and at the same time a familiar experience because it refers to the imaginary of stories in their generation process'.

## Time passed by, Myri had moved to Argentina and we were neighbors. We met in person at that UBA event, and friendship began.

First exchanges were related to research, to sharing references, concepts, going to exhibitions. Later, in 2015, Myri took part of *Drawing on Stage Lab* which I imparted at Club Cultural Matienzo, where she started working with Andiamo, promoting the tool from her own projects.

Andiamo is a free software tool for live animated drawing developed on Processing platform. It began with explorations shared with Andrés Colubri, who developed the first Andiamo code in his Master's Degree project. The precedent for Andiamo is our work together on Moldeo platform, both platforms were introduced in Mexico by Myri through Bioscénica.

During 2015 and 2016 I created a program called *Drawn Dialogues* where I invited artists to make performances based on live dialogue. They were very nourishing experiences, each with its own different features, it meant working with artists with their very own paths within live digital drawing.

With Myriam we did two performances, *Remix de casas dibujadas* at Festival Fuga Industrial (Fundación Lebensohn, 2015) and *Casas abiertas* at Fase 8 Festival (Centro Cultural Recoleta, 2016). In the first we mixed the common subjects of our works Hábitat Draw and La Mudadora, in a live drawing dialogue using Andiamo and Isadora. We were sitting together at a table as projected images
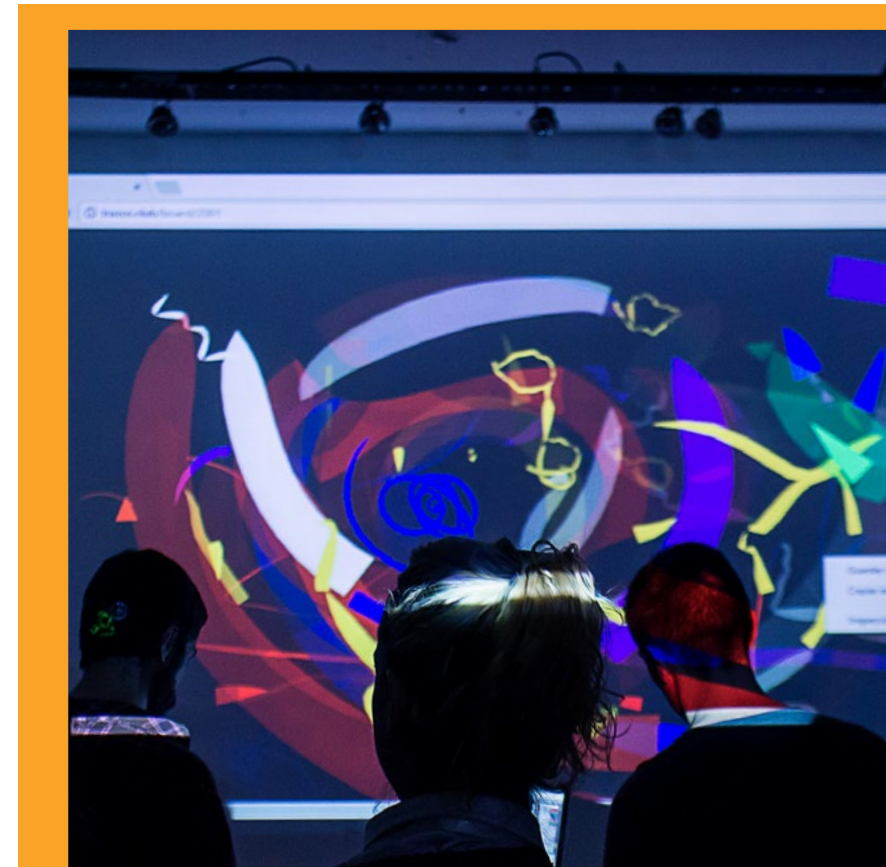
generated an intimate homely space framing that table. In the second performance, we resumed that theme but left our previous work behind and instead we imagined potential, interrelated open houses. We both drew with Andiamo while we moved, we traced over a wide space and over our own bodies in motion. At the end, we pulled out mirrors so the sketched open houses now projected farther and farther, until going out of sight.

## Thus, in September 2016, invited by Bioscenica to Festival Transpiksel, we presented Trazos Club, the platform we developed with Andrés based on Andiamo. It the form of a videoconference, we reconstructed the work joint with Andrés that led to Trazos,

to finally close the session drawing live, Myriam, Andrés and me.

Trazos Club is a web platform for collective drawing. It is a project that seeks, through collaborative work, applying simultaneous animated digital strokes, to promote innovative artistic and educational experiences, understanding artistic education in a broad sense, including the community's appropriation and use of expressive languages. Trazos projects itself as a meeting place, a drawing Club.

Trazos is the result of ten years of work with Andrés that included the development of Free Software tools, performative works and educational projects based on live and collective drawing.

AMIENTO TRANSPIKSEL MX 2016

132.248.140.66

4:24 / 41:16

Desliza la página para ver más detalles

**JULY 23 2018 17:14 / M R wrote:**
*Hi, love! How are you?*
*I'm checking Bioscénica's site. I got very interested in what I read on the community collaborative lab, where can I see more about that?*

**JULY 23 2018 18:59 / M B wrote:**
*Hello! How are you! !*
*So cool you checked out the community Lab. You might want to interview Minerva Hernández and Alejandro Ortiz. Besides Bioscénica, we founded PLACCA, which is the community cultural platform focused on the town of Tepepan, Xochimilco.*

Once again, in 2018 the crossing roads with Bioscénica were related to research. I am preparing a seminar that will be part of a Clacso Diploma involving research, technology, development and social feedback. The seminar will specifically focus on art in relation to these topics. While I was selecting examples to discuss from different places in Latin America, once again matching points popped up when I learned about Revivamos Tepepan. project .

Talking from my experiences in research and production with Latin American colleagues over the years, in my particular case, from Colombia and Mexico, I feel close to their ways in regards to community and collective art, free culture, and the sensible use of technologies according to each one's own identity.

Different contexts with experiences in common. I believe that, in a wide view, art is something that underlies as a continuum: the construction of an open collective work, where anyone can take part and share. And in each individual work, the same thing happens on a smaller scale because no work is really individual, our uniqueness is always expressed through dialogue with our peers. This idea corresponds to the Free Software philosophy, in relation to which I am investigating the concept of open drawing, tracing an analogy with the open source.

The essence of these meeting points and collaborations, going back to what I described at the beginning when addressing a primary use of language, has to do with a concept I recently read on Cerámicas Claridad 's webpage, as an observation on a resulting piece: between study and intuition a sacred place opens. I think this is the search I feel as common ground in regard to our mutual work and interests with Myriam and Bioscénica's projects. The coincidence is related to Latin American identity, and with finding -or recovering- together that sacred place in our everyday creative practices.

●

MORE INFORMATION
http://marcelarapallo.com.ar



Thanks to this generous exchange with Marcela Rapallo we have disseminated Trazos.Club online drawing tool in Mexico, in the frame of Laboratorio Colaborativo Comunitario LABCO *Anima Mundi*, led by Plataforma Bioscénica at '*Casa Hogar Sumando por ti*', in Xochimilco.
LABCO 2018 *Aproximaciones a la poesía*, *Coro de Frutas* and *Anima Mundi* received the support of Proyecto Bi - BBVA Fundación Bancomer.

# Bioscénica Mexico-Argentina

(2014-2018)



JAM tec
Jornadas de Arte, Musica y Tecnologia

Universidad Nacional de Quilmes
Escuela Universitaria de Artes

**CHICOS.NET / CENTRO CULTURAL DE LA CIENCIA**
STEAM METHODOLOGIES

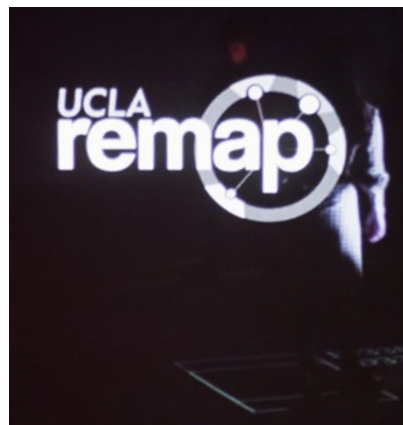**JAMTEC UNQ**
MÚSICA Y TECNOLOGÍA SEMINAR



**ARTICLE IN E-PERFORMANCE 4**
UNLP



**PERFORMING ARTS**
*LOS ABUELOS ARTIFICIALES* **AND**
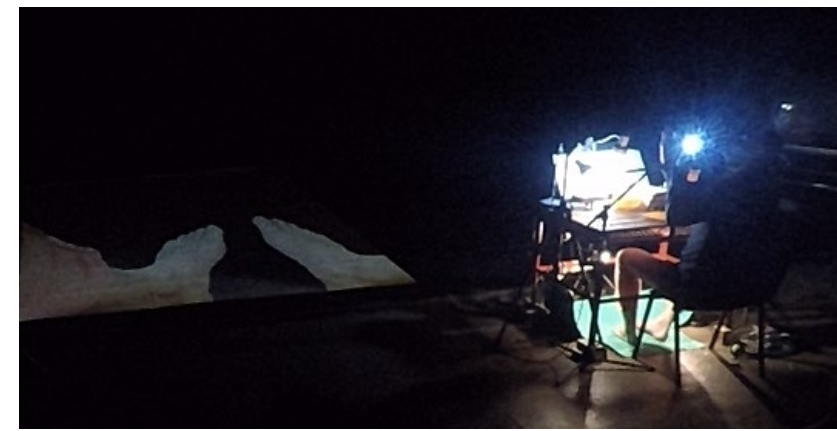*EMPATÍA 4 /// LA EMOCIÓN*

**FRUIT CHOIR**
LABCO TELEMÁTICO
XOCHIMILCO - BUENOS AIRES

---

*Projects produced in collaboration with electronic artists, cultural institutions and universities.*

*Arts, Science and Technology Knowledge Exchange Networks.*

*Transdisciplinary methodologies for educational contexts.*



**RESEARCH AND TEACHING MALAPRAXIS UNTREF**
https://www.youtube.com/watch?time_continue=89&v=mX12jV2LSlI



**TENSIONES POÉTICAS UNLP**
MEXICO / ARGENTINA / SPAIN



**CUBREOBJETOS FESTIVAL NUEVA ÓPERA BUENOS AIRES**

**II CONVERSATORIO TECNOESTÉTICA Y SENSORIUM CONTEMPORÁNEO**
UNC, CÓRDOBA



**15VO. ENCUENTRO DE COOPERACIÓN E INTERCAMBIO (ECI)**
CENTRO DE EXPERIMENTACIÓN E INVESTIGACIÓN EN ARTES ELECTRÓNICAS (CEIARTE) UNTREF/UTN



**RED ANTROPOLOGIA DEL CUERPO**
PERFORMANCE INVESTIGACIÓN UBA

*METHODOLOGIES*

# LabCet Epigenética

## Performance Creation Transdisciplinary Lab, 2018

In the frame of Festival N, International Arts Science and Technology Festival, Centro de Cultura Digital, Mexico City

LABCET *Epigenética* invited 10 transdisciplinary creators with unique backgrounds. Within this shared environment, we declared an unstable zone of crossing trajectories. The concept of epigenetics calls for the exercise of recognizing an arsenal of available mnemonic tools residing in individual and collective bodies (to excercise memory, activate touch, retrieve hidden, ancestral, anecdotal, autobiographical, intangible, oneiric information, etc.). Each guest artist guides one vector, then alternating, allowing to be guided, simultaneously mutating to the new contact, to the exchange of forces and speeds, taking a leap.

**IMAGE:** RETROSPECTIVE MEMORY <<< *FESTIVAL N*

## #14Skyline in the Context of Research and Creation Laboratory 'LabCet/Epigenética'

**ROSA SÁNCHEZ Y ALAIN BAUMANN (KÒNIC THTR.)**

### CONTEXT

Kònic Thtr is invited by transdisciplinary company Bioscénica to be part of LabCet, a creation-research process based on the performance piece #14Skyline. The lab is inspired by the theory of epigenetics to foster an open transdisciplinary creative process programed to be presented before an audience at Centro de Cultural Digital de Mexico (CCD)*.

### GOAL

To design a methodology aimed to research and produce within art-science-technology, combination, exploring the theory of epigenetics as a theme reference.

Kònic's participation in the lab is based in its far reaching background in research-creation in art, science and technology, contributing with its own research methodology for *site-specific* projects, here setting off from an existing project: #14Skyline.
The multidirectional exchange with fifteen international artists invited by Bioscénica, kick-

starts a process of creation-adaptation-transformation of the piece and of the participants.
The artistic research carried out during the laboratory takes its inspiration from epigenetics, a theory that holds that: *non-scientific interpretation->* the DNA molecule that configures any living organism CANNOT be considered a closed form in this organism throughout its existence, but external factors determine how DNA activates or deactivates part of its sequences (markers). The study of this mechanism opens up new possibilities

to understand the body and allows to glimpse new specific treatments for each individual in the Health field, to quote the most pragmatic example of what epigenetics can contribute to science and human beings.
How to bring scientific and artistic research to converge around the concept of epigenetics? What research–creation methodology could fit a process of collective exploration? How and what to formalize to open the end of the process to an audience...?

*:: DNA ::*

*Written in my DNA*

*In my skin cells*

*Like a hashtag*

*Like a tattoo*



### PROCESS

We, as Kònic duo (Rosa Sánchez and Alain Baumann) base our performative intervention on the concept that CCD is a dynamic building, a container of living ecosystems, a coded DNA with its architecture supported on markers that interrelate to a genetic code provided by the present audience, by the staff that works there, by the pieces in the exhibition and events programed there, by interventions from the social networks, the internet... they perform an influence, determining it, rewriting its functions, its history and its memory, providing it with changing forms and dynamics, even though the internal structure remains unchanged, immovable.

Inspired by these concepts and poetics we intervened the 'terrace', a space we define as the layer-skin that links the building exterior with the interior of a living system - CCD architecture.

*Process Location:
Bioescénica Headquarters. Tepepan, Xochimilco 1-14 Dec 2018.
Open presentations at Centro de Cultura Digital Estela de Luz (CCD) 15-16-17 Dec. 2018

**PARTICIPATION #14SKYLINE / KÒNIC THTR**

As a starting point (DNA sequence) Kònic Thtr shared their performance project #14Skyline. A piece that has been shown throughout 2018 in different formats and countries.



#14Skyline_extended Mercat de les flors Barcelona



**# 14SKYLINE AND MOTIVATIONS OF THE PROJECT**

With Skyline, Kònic Thtr directs a critical glance towards the new techniques of power that give access to the sphere of the psyche and manages to make men and women submit themselves to control. The Skyline series takes as a starting and reflection point the concept of psychopolitics enunciated by South Korean author Byung-Chul Han. Psychopolitics is, according to Han, the domination system that, instead of using oppressive power, uses seductive, smart power managing to make human beings submit themselves to the domination network. In this system, a kind of digital Big Brother, like an inverted panopticon, each individual allows themselves to be observed, ultimately confined within their own conception of themselves.

Skyline explores this concept with the strength and fragility of poetry, through music, visuals, performance and sculpture. During the show music, poetry and dance evolve around the architectural element, creating an intimate and interactive dialogue between exterior and interior.

Inside the performance space we built an architectural sculpture for video and light projection, creating two action spaces that define the binomials natural /artificial, individual /society, psychological /physiological which give meaning to performance, poetry, dance and music:

    **CORE SPACE:** The sculpture defines an interior, the emotional or psychological space. Its walls are projection surfaces and separate interior from exterior, at the same time it is interaction space through video cameras and sensors.

    **TACTILE SPACE:** Performance space that contains the architectural sculpture. The video cameras and projectors configure a space for installation and connection of outside and inner worlds.

**#14SKYLINE IN THE CONTEXT OF LABCET**

The curatorial text of the exhibition *Espacios de Especies*, to which the presentation would integrate to, helps us bring close #14Skyline's theme in and the conceptual framework proposed by LabCet.

*The causal reciprocity between organism(s) and environment(s) and the idea that structural / functional details of an organism are not completely encoded in the genome is explored from a viewpoint that considers space -in broad sense- as a fundamental factor of continuous interaction and formation.*
María Antonia González Valerio

The inter-relation between the genome and the environment in which we develop ourselves is set as our starting point. We chose the virtual space, the network environment in which we are immersed -although not physiologically- as a metaphor to reflect on the impact that this space has on us as individuals.

If the interaction with the space around us has the ability to modify certain features of our physiology: **Can we consider virtual space, the networks space, as a space that modifies us?**

It is evident that, at a symbolic level, this space of interconnections and access to information affects us and shapes our behaviors and representation (our projected phenotype). In networks we always appear under our best aspect, our best profile. We often use different online profiles to attract /seduce others as we see fit.

Another motivation to work with the Network concept is the role it plays in the fields of scientific and cultural research. The Network is also a scientific space: research centers located in universities around the world are interconnected through a very high performance network used to share knowledge, allowing remote research with large amounts of data (Big Data) thanks to the access to supercomputing centers connected to these high-speed networks. In short, they enable collaboration in scientific and cultural research.
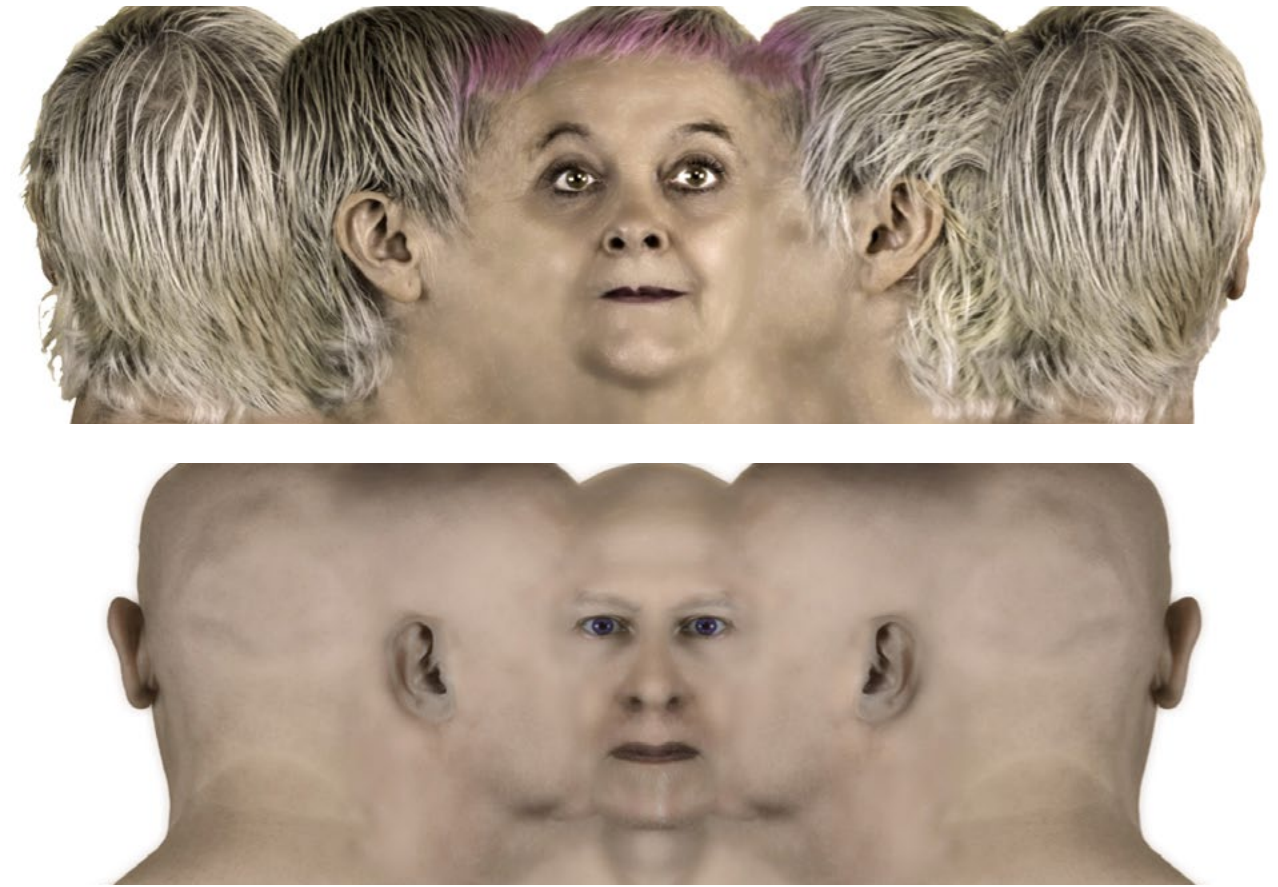
Notes on Kònic's Performance at CCD. México

In Kònic, we are interested in this field and this space as a place of transformation and collaboration. For a decade, we have collaborated with researchers and artists in order to expand the possibilities of live artistic creation through the communication between musicians and dancers in real-time from real-time intercommunicated points (nodes) in order to hold live performances (see for example 'Near in the Distance' between Vienna, Barcelona, Prague, Rome http://netart.cc)



Unfolded faces of Rosa Sánchez and Alain Baumann. Project #14Skyline

**OPEN PROCESS - PUBLIC PRESENTATION**

The final Kònic /CCD presentation holds a visual and sound performance format which addresses this space to which we dedicate more and more attention and lifetime. A metaphorical approach to this network digital environment from a biological viewpoint.

Understanding that space as *skin*, we propose two poetic actions ...*the network - skin* draws the cell-articulating weft, the rhizomatic weave in which we are in, Alain programs the code through which Rosa performatively transits. Her interactive action moves along the inside and outside of a thin elastic skin, generating sound and graphics visualized on the panoramic LED screen of the CCD terrace space. Visuals that refer us to the cellular mesh, a network in which Rosa's virtual double seems to be trapped.

Then, *'unicellular units'* exist in nodal and relational form, producing content, spoken text and ongoing movement through that *net-skin* that provides them with unity and relationship support (a collective movement composition for cell phones based on the exploration of how identity and biological codes are represented or rewritten on the Web).

We connected several mobile devices' cameras to generate a visual and sound score in the performance space based on the performers bodies' images and vocal sounds. Addressing the selfie culture but also the creation of new control forms that we are willingly feeding, our desire to show ourselves in a certain way in the network, and being both subject and observed object, alienated by self-control.

What in the piece #14Skyline we described as inverted panopticon, in which control is no longer executed from a hypothetical Big Brother who sees everything, but from the control each one of us performs over our environment through the network.

The camera as an eye inseparable from our mobile devices, as an access element into this space, and of communication with the other bodies that share and occupy this same space.

NETWORK of unicellular nodes to create an alliance, a joint, a multicellular collective that guides the experience to the next threshold.

●

MORE INFORMATION ON #14Skyline: https://koniclab.info/es/?project=14skyline_extended-2018-poesia-danza

CC/

dgARTES

**Cultivamos Cultura**
Rua de Odemira, 15
7630-330 São Luis,
Odemira

cultivamoscultura.o
info@cultivamoscu   ura.o
                         s    ura.org

*METHODOLOGIES*

# LabCet Empatía

## Performance Creation Transdisciplinary Labs (2012-2019)

*Live Art / Transdiscipline / Transnational Collaborations / Poetry / Audiovisual Landscape / Participative Performance / Organic Soundscape / Biointeractivity / Body-Sound-Image interaction / IMD + GeM (Musical Digital Instrument + Hand Gesture) / Live Sculpture*

Empatía is an open co-creative methodology, initiated in 2012. An original idea by Mexican artists Minerva Hernández and Myriam Beutelspacher, so far counting five versions that evolved from research project *Piel Tecnológica* (cardiac pulse sensing in order to produce collective beats using haptic interfaces).

Collaborations in multinational version 4.0 included local artists from Portugal, France, Belgium and Argentina cross-discipline labs where we explore the concept of empathy through gesture, image, sound and sensing of living microorganisms.

# IMD + GeM live:
# *"Empatïa 4.0" Performative Co-creation*

**NICOLÁS ORTEGA**
UNIVERSIDAD NACIONAL DE QUILMES

The present work describes the use of Musical Glove IMD + GeM (developed as the author's Graduation Thesis) in the framework of three artistic events between August and December 2017, part of transdisciplinary performance entitled Empatía 4.0.

Hand gestuality is of great importance at artistic, musical and anthropological levels (Cassel, 1998). In this regard, artists like Michael Waivisz[1], Laetitia Sonami[2] and Imogen Heap[3] have developed 'musical gloves', aimed at facilitating the creation of real-time electronic music in a gestural manner, resourcing to hand movements.

In the framework of my Music and Technology Thesis Degree for Escuela Universitaria de Arte, I proposed a project with the purpose of designing and developing a digital musical instrument based on Marcelo Wanderley & Eduardo Miranda's concept: an instrument containing a control surface and a sound generating unit. Both units are independent modules but interrelated through mapping strategies (Wanderley & Miranda: 2006). This Digital Musical Instrument consists on a glove that enables electronic music creation or real-time audio signal processing in a gestural manner.

After proving IMD + GeM's (such is the name given to the musical glove) adaptive capacity and considering it suitable for the artistic proposal of Empatïa 4.0, Myriam Beutelspacher -artist and Bioscénica MX-AR liaison coordinator- invited me to join a transnational collaboration that brought together 33 artists and scientists from different disciplines and nations, to do performative acts divided in five nodes: Portugal, Argentina, Belgium, France and Mexico.
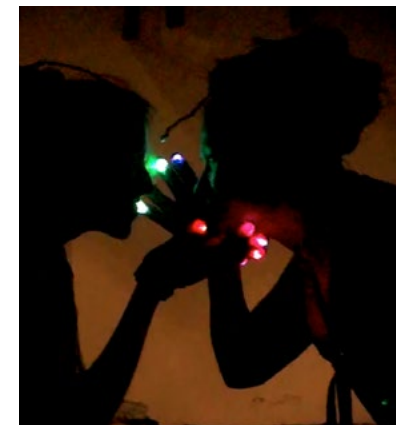
1. Waisvisz, Michael. *The Hands*. Available at http://www.crackle.org/TheHands.htm
2. Sonami, Laetitia. *A brief history*. Available at http://sonami.net/ladys-glove/.
3. Heap, Imogen. *Gestural musical ware by Imogen Heap.* Available at http://www.imogenheap.co.uk/thegloves/.

## Actors
Members of the **Argentina node** belonged to the following artistic collectives:



### Bioscénica MX / AR

*Transdisciplinary company Bioscénica initiates its node in Buenos Aires. This collaboration has also set the ground for the creation of Red Isadora Latina and its link with Mexico, through Myriam Beutelspacher Alcántar and Ezequiel Steinman*

### Red Isadora Latina

*Red Isadora Latina is conformed by artists, performers, teachers and researchers specialized in art and multimedia technology. It counts with the support of Mark Coniglio (Isadora software developer), founded by Maximiliano Wille (INTAD, UNA).*

### ElectropUNQ

*Nicolás Ortega is part of research project 'Desarrollos Tecnológicos Digitales Aplicados al Arte' (Digital Technology Developments Applied to Art) at Universidad Nacional de Quilmes.*
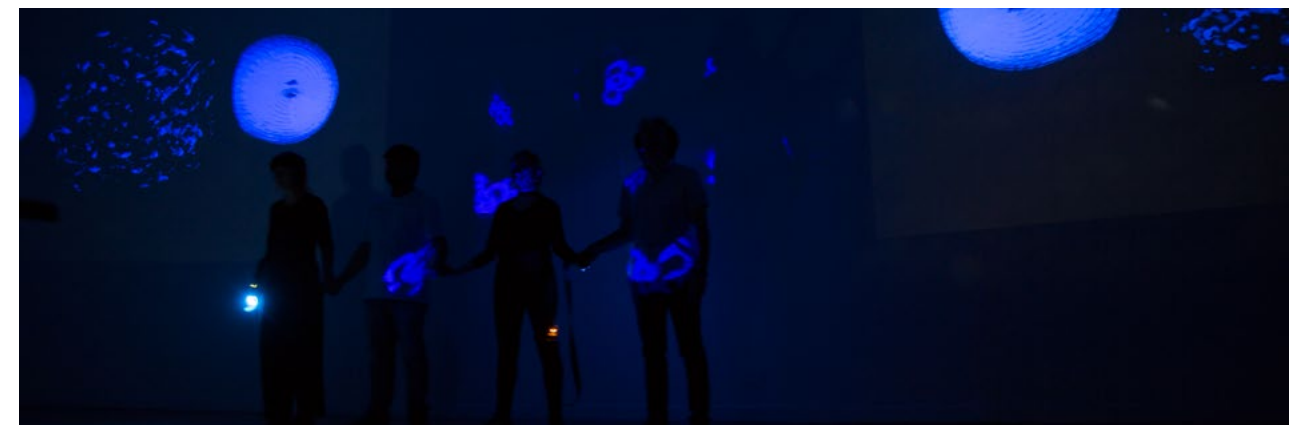
v.1



v.2



v.3

# Empatïa 4
# // La emociön

Empatía series is a multimedia performative work initiated in 2012 as part of a transdisciplinary lab original by Bioscénica Mexico, where 'empathy' concept is explored through gesture, image, sound and living microorganisms. It was presented in simultaneos in the frame of art residence Cultivamos Cultura Contemporary Artspace directed by Dr. Marta de Menezes.[1]

The Buenos Aires performance was based on three coexisting sections (image, sound and performance) orbiting the project's aesthetic proposal. To this purpose, a technical script was assembled establishing different 'scenes' to move through, each identified with a color, a concept, an image, a type of sound and a gesture.

4. Synopsis extracted from http://empatia4.bioscenica.mx/ (September 2017)





The image and video part was based on Isadora software, processing clips related to each scene concept in real-time, projected on modified mirrors with water in such a way that when the performer interacted with the water, distortions would affect the projections, rendering the result on the walls behind her.

The sound and audio process section was carried out in Pure Data programming environment. For each scene a specific concept-related sound model was designed. These sounds sought to emphasize each scene's message, and they were generated or processed in real time.
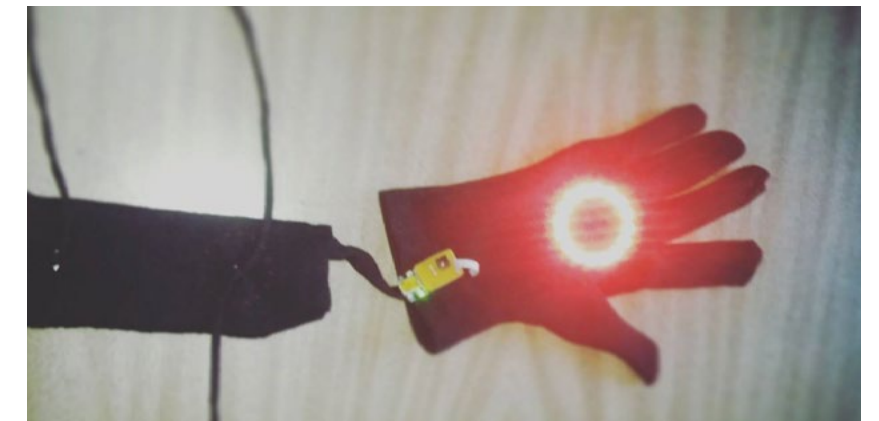
Third and most important section was the performance act. She navigated between scenes aided by IMD + GeM, articulating the communication between softwares, since the glove's signal was being sent not just to Pure Data but also replicated in Isadora via OSC Communication (Open Sound Control), serving as control device to both environments and modifying their processes' parameters. To make use of OSC communication protocol an *ad-hoc* network was created, thus avoiding latency problems due to signal drop, noise in the network or interference from other network users.

In this way an organic performance was achieved since the sound and visual

sections were in constant communication with each other and with/through the performer who, at the same time, interacted with the audience in different instances. The system supported this dynamics, allowing a three-level interaction, Performer-System-Audience, which rendered very effective when shifting the audience's passive role into active, creating situations where both, performer and audience, influenced each other, as if a non-verbal conversation was taking place (Bongers: 2000).

-----------------------------------------

Photo documentation available on Bioscénica webpage - Videos available at  https://vimeo.com/233549906 and https://vimeo.com/232300794

# The Events



## Launching of Red Isadora Latina / 3rd Residencia Artística en Tecnología Interactiva

The MediaLab at Centro de Arte Sonoro (C.A.So), CNB Contemporánea and Equipo de Investigación en Tecnología Aplicada a la Danza (InTAD, UNA) offered a one-week Residence space as a research, experimentation and creation zone aimed to performing arts mediated by interactive multimedia technologies.

Interactive digital technology was handled with Isadora visual programming environment. Ultimately, this Residence's goal was to enable members develop performance projects (as work-in-progress) and showcase them at the end of five intense working days, taking up CNB's building third floor on Riobamba street (Buenos Aires, Argentina) with interactive performative installations, using the aforementioned programming environment.

For this showcase, a first version of the Isadora / Pure Data patches was set up, and small adjustments were introduced for second and

third presentations. Being able to try IMD + GeM in an actual performative instance was very useful to find possible improvements and to optimize processes since it had only been used in lab and experimentation contexts so far.

Throughout the project set-up, tests and rehearsals, inconvenients and suggestions from the performer led the way to introduce the improvements required for a real presentation scenario. These improvements were:

• Calibration changes: Sensor sensibility and response to performer gestures were modified.

• Feedback changes: RGB Led Module was very helpful to facilitate shifting between scenes.

• Aesthetic and fitting changes: To avoid a possible disconnection caused by performer's movement, straps were designed and sewn to her wardrobe.

## Festival Internacional de Danza Independiente CoCoADatei (FIDIC)

FIDIC is a biennial international and independent festival that brings together local, regional and international artists around a dance event that seeks to promote production and artistic creation, research, exchange and gathering of colleagues, as well as favoring audience generation through reflection and discussion panels open to the community.

The Festival was held at Haroldo Conti Centro Cultural de Derechos Humanos; Empatía 4.0 was presented Saturday night on September 9 at the building entrance hall.

For this performance we employed the same Pure Data patch introducing few modifications in order to achieve richer sound contents that would better fit the performance action.
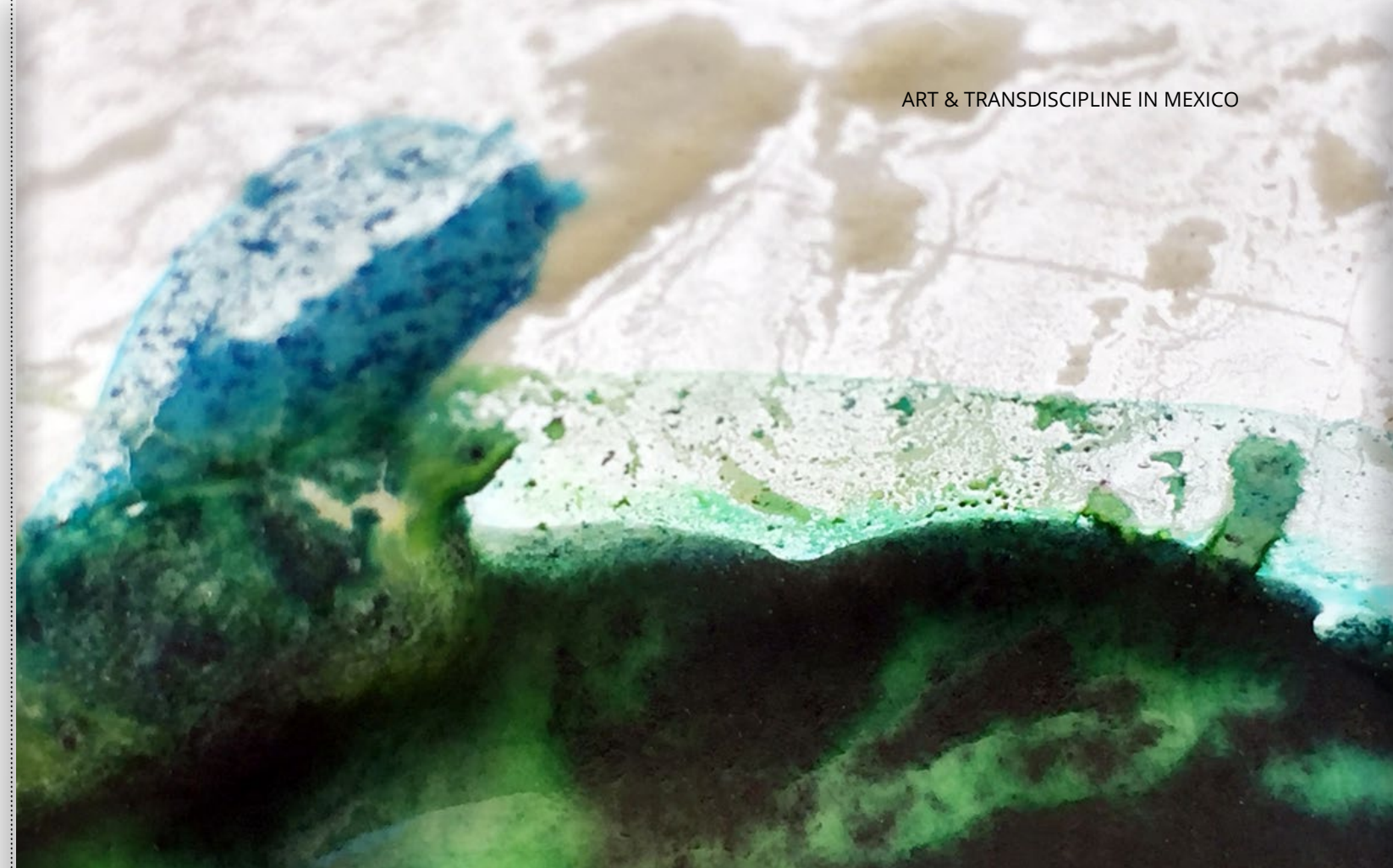
## FASE 9

FASE is the largest Art, Science and Technology event in Argentina. Every year it gathers artists, institutions and universities related to the field of art and technology in a program that extends through several weeks and offers exhibitions and performances, workshops and art residencies. In the framework of FASE's 9th edition, Empatía 4.0 was presented in its main venue, Centro Cultural Recoleta.

A second performer was introduced for this version, for whom an extra glove was manufactured. This glove did not have sensors since it was not meant to affect image processing or sound generation. Instead it included a 16 neopixel LED ring that triggered different light sequences designed for each particular scene. A hidden button was added to the palm of the hand in order to allow the performer to jump sequences at cues, preserving consistency with the rest of the performance.

●

**BIBLIOGRAFÍA**

Bongers, B (2000). "Physical interfaces in the Electronic Arts Interaction Theory and Interfacing Techniques for Real-Time Performance" in: M. Wanderley and M. Battier (Eds.), *Trends in Gestural Control of Music*. Paris: IRCAM Center Pompidou.

Cassell, J. (1998). "A Framework for Gesture Generation and Interpretation". *Computer vision in human-machine interaction*. Cambridge University Press (pp. 191-215). Cambridge University.

Kogan, R. (2008a). "Brief History of Electronic and Computer Musical Instruments". Texas A & M University. Texas. AC.

Miranda, ER, & Wanderley, MM (2006). "New digital musical instruments: control and interaction beyond the keyboard" (Vol. 21). AR Editions, Inc.

Ortega, N. (2016). "Una propuesta de controlador musical para la generación y procesamiento de audio digital mediante la gestualidad de las manos". VI Jornada de Becarios y Tesistas. Universidad Nacional de Quilmes. Buenos Aires, Argentina.

Bioscenica site http://bioscenica.mx/.

ElectropUNQ site http://electropunq.net/.

Empatia site http://empatia4.bioscenica.mx/.

Casa Nacional Bicentenario site http://www.casadelbicentenario.gob.ar/.

RIL site http://www.redisadoralatina.com/.

Centro Cultural de los Derechos Humanos Haroldo Conti site http://conti.derhuman.jus.gov.ar/.

FIDIC site https://festhome.com/f/480/2.

INTAD site https://intad1.wordpress.com/.

## *EMPATÏA 4 // LA EMOCIÖN at Cultivamos Cultura\**

## Mexico + Portugal + France + Belgium (2017 Tour)

ARTISTS: Minerva Hernández Trejo / Myriam Beutelspacher Alcántar / Alejandro Ortiz / Ezequiel Steinman / Gloria Mendoza / Martin Bakero / Silvia Ábalos / Maximiliano Wille / Isabel Burr Raty / Nicolás Ortega / Lourdes Roth / Mauro Herrera / Cristian Delgado / Elisa Matilde / Guillaume Dumas / Stéphanie Boubli / Sebastián Pasquel / Xalik Ortiz / XX019 Motto / Thamara Cruz / Luis Leiva / Cándido Capilla / Maël Capilla / Maja Smrekar / Izzy Tweedie / Adam Zaretysky / Kira DeCoudres / Jon Garf / Will Blair / Estela Violeta / Ernesto Romero

\*Project with support of Fondo Nacional para la Cultura y las Artes.

**AUGUST 2, 2017 Paris, FRANCE**
*Venue: La Société de Curiosités, in the frame of Contemporary Poetry and Tecnology «FESTINA LENTE» organized by Association Thérapoètes, Martín Bakero, artistic director.*





**AUGUST 6, 2017 Brussels, BELGIUM**
*Venue: Galerie d´Art Contemporain Cándido Capilla, performance show.*





**AUGUST 12, 2017 Sao Luis Alentejo, PORTUGAL**
*Venue: Cultivamos Cultura In the frame of MONSTRAS´17*







IMAGE: RETROSPECTIVE MEMORY <<< *FESTIVAL N*

# Empatía 5.0 // DH
## Devices to remember what we do not know

**MINERVA HERNÁNDEZ TREJO**
BIOSCÉNICA

A transdisciplinary performance creation lab around of the concept of empathy, where haptic devices play a fundamental role. Haptic defines everything related to the sense of touch. This lab gathers Mexican artists and engineers who collaborate to produce both exhibition and performance pieces.

*Empatía 5.0 / DH* gives continuity to *Empatía* project initiated in 2012, activating collaborative dynamics that integrated artists from different disciplines around concepts like internal energy, emotion and epigenetics.

For this lab, memory is set to play, proposing the idea of *remembering what we do not know* from sound and tactile interfaces, and biophysical data. The lab concept aims to activate a playground for experimentation and research, for testing ideas and hypothesis.

*Empatía* unfolds from a collaborative audiovisual score, seeking to generate new performative readings under a playful premise, and to demonstrate, involving the machine, a dialogue of intimate character.

The result is an interactive piece for the collective exhibition 'Especies de Espacios' open from November 10 to February 15, 2019 as part of International Festival N, at Centro de Cultura Digital.

MORE INFORMATION
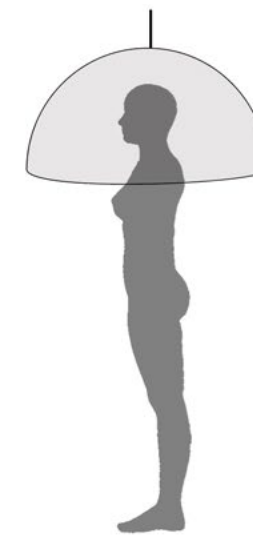
https://bioscenica.mx/empatia-5-dh/

This lab is part of the project supported by Proyecto Bi / BBVA Fundación Bancomer.

PARTICIPANTS:
Abigail Jara
Alberto Cerro
Alejandro Ortiz González
Eurídice Navarro
Héctor Ugalde
Irasema Serrano
Minerva Hernández Trejo

---

*Empatía 5.0 // DH* is conformed by four devices:



**Sono transportador**

El sono transportador es un dispositivo compuesto de frecuencias dirigidas a puntos energéticos del cuerpo. Las frecuencias cambian en octavas bajas y altas, así como en la amplitud y en el timbre, es decir, a veces se pueden escuchar composiciones sutiles y otras veces más complejas. Estás frecuencias afectan a todo el cuerpo en una especie de baño sónico en preparación para la obra completa.

**Sono removedor**

El sono removedor es un dispositivo para sentir. Está creado apartir de bajas frecuencias para tocar y remover las emociones y memorias ancestrales contenidas en el aérea abdominal.
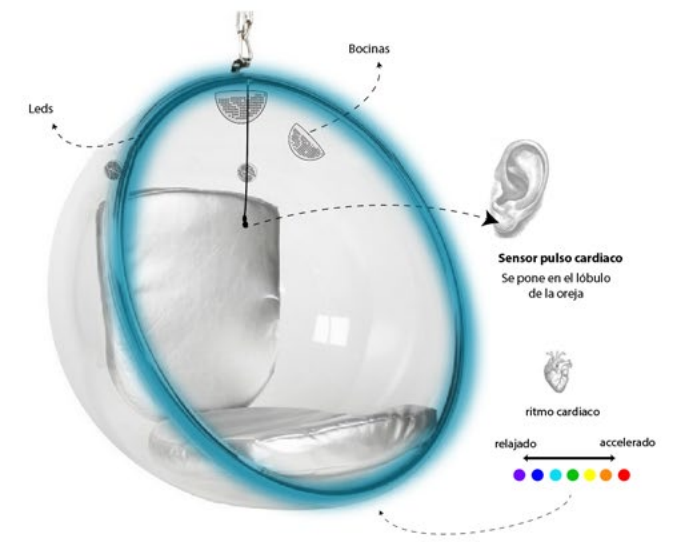
**Cápsula cromática de inmersión sonora**

La cápsula tiene una composición sonora y cuenta con un sensor de pulso cardiaco que el experimentante se pondrá en el lóbulo del oído (en caso de tener arete, se pone un poco más arriba). Los colores que emergen están reacionados con su ritmo cardiaco, entre más tranquilo sea su pulso se va al morado y si se accelera los led se pintan de rojo.



**Contención transparente**

Aquí el experimentante podrá sumergir sus manos en el recipiente con semillas de cilantro (molidas y enteras) para hacer contacto con la tierra y poder llevarse el olor de la pieza.

**IMAGE: RETROSPECTIVE MEMORY <<< *SAGA EL ROBOT ACTUANTE***

# *Bioscénica Retrospective 20 years in Transdiscipline*

## Selected work

Two decades of uninterrupted production confirm a process that has naturally led Bioscénica to transdisciplinarity, a leap into the abyss of empathy, playing with Ernst Saemisch's image when he proposes a leap into the abyss of the senses. From the conviction of collaboration as a horizontal process around the act of sharing and producing knowledge, the company presented work in diverse formats: festival, meeting, colloquium, workshop, laboratory, staging, seminar, exhibition, publication, residence, experience, educational television, etc. Along such a path, we aim to encourage exchange without profit among equals and peers as the best way to evolve into new territories and practices. In other words, to keep on making the World.

MORE DETAILS https://bioscenica.mx/
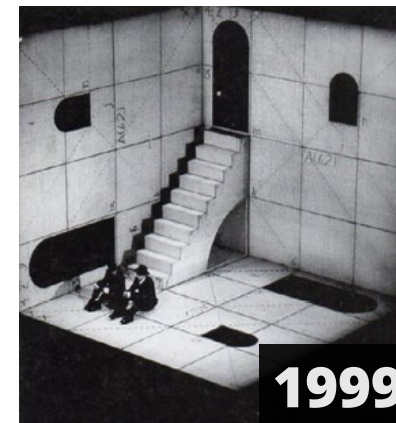


**1999**

### Tres

*Dance piece*

*Tres*, Dance piece inspired by Samuel Beckett's En Attendant Godot. Dir. ASYC/El teatro del movimiento, Minerva HernándezTrejo, assistant. It was presented at Teatro de las Artes in May 1999. Piece awarded by San Luis Potosí audience for Best Choreography at XVIII Festival Internacional de Danza Contemporánea de San Luis Potosí.



**2000**
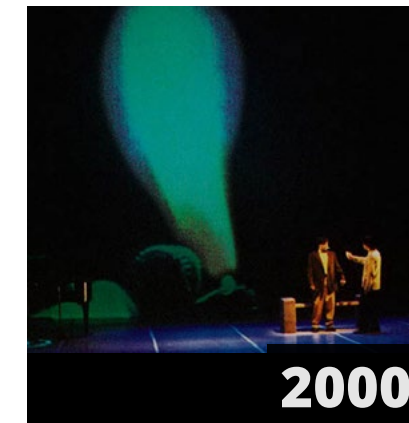
### Kalispherion

*Experimental contemporary music*

Performance concerts presented between 1999 and 2004 under Marcelo Gaete's artistic direction and Minerva Hernández's production. Proyect produced at Centro Multimedia, electronic art research space at Centro Nacional de las Artes, México.

.



**2001**

### El laberinto de Babel o los paraísos perdidos

*Physical Theater*

Stage piece directed by Bernardo Rubinstein with large-scale videoprojections and real-time video.

**1998**

Minerva Hernández Trejo returns to México after taking courses in cinematography and photography in Belgium, and initiates nourishing collaborations in the field of performing arts with new media. Joins the Digital Graphics workshop at Centro Multimedia / Centro Nacional de las Artes.

2003. Collaborations with Myriam Beutelspacher Alcántar initiate at Espacio de Experimentación e Investigación de Arte Electrónico, Centro Multimedia / Centro Nacional de las Artes, until  2014.

2000. Foundation of Company Bacaanda Multimedia (Minerva Hernández Trejo, Geraldine Eguiluz and Alejandro Ortiz González)


**2002**


**2003**


**2004**


**2005**

### Los monólogos de A

*Contemporary dance
and video-scenography*

ASYC/Teatro del Movimiento.
Black Box stage at Escuela
de Danza Clásica y
Contemporánea, Centro
Nacional de las Artes.

### In situ o la reacción humana

*Tactile interactive installation*

Minerva Hernández Trejo,
Jóvenes Creadores grant,
FONCA. The piece consists of a
device pla-ced in a half-sphere
equipped with a cardiovascular
sensor. User inserts a finger
into a cavity in the sphere and
pulse is captured and sent to
the com-puter, transforming
the signal into rhythm, sound
and colors. The relationship
between heart-beat, color and
sound is based on the study of
the Chakras
(energy points of the human
body).
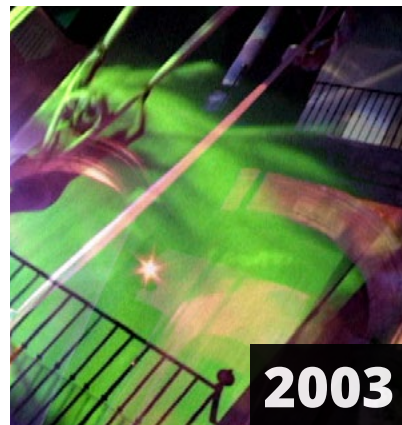
### El sueño

*Video-scenography. Multimedia
stage, aerial dance and
experimental  music*

Artistic Direction: Bacaanda
Multimedia. Based on Géraldine
Eguiluz's jazz repertoir
(Tritonia), Alejandro Ortiz's
poetry and videoart by Minerva
Hernández Trejo, a stage piece
involving performance, dance,
poetry, acrobatics, circus,
fashion, lighting and video-
scenography with the purpose
of integrating the spectator in a
multidisciplinary artform.
Participants: Andrea Peláez,
Leonardo Costantini, Karen
Bernal, Gabriel Figueroa
Pacheco, among others.

### Kalispherion

*Aerial performance concert*

Gathered more than 100 artists
on stage in a complex fusion
of aerial dance, electronic
costumes, augmented reality,
real-time generative video,
chamber orchestra and
algorithmic composition.
Artistic director, Marcelo Gaete.
Producer, Minerva Hernández
Trejo. Creative staff includes
Ricardo Cortés, Raúl Parrao,
José Luis García Nava, Tania
Aedo, Hugo Luis Barroso, Juan
Galindo, Circo de Mente and
Myriam Beutelspacher, among
many others. An integral
project of Centro Multimedia,
Centro Nacional de las Artes
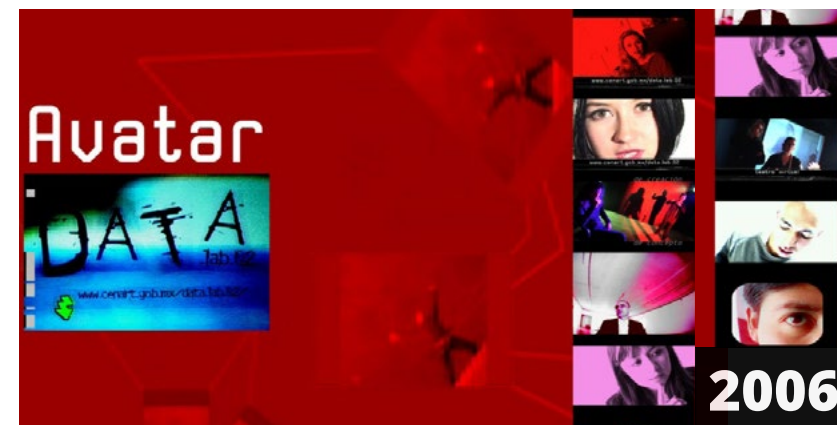at Escuela Nacional de Arte
Teatral INBA.


**2006**

### Avatar

*Educational TV series*

Educational TV Series *Data.Lab
2.0 Arte y tecnología*. Episode
*AVATAR, performing arts and new
media* for Educación a Distancia
Canal 23, Canal de las Artes
(2003-2005). A critic review and
analysis of practices and uses of
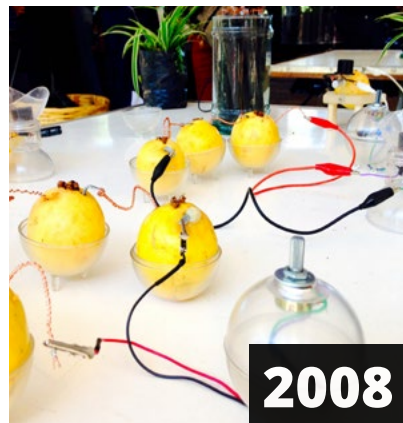technology on stage.


**2007**

### Acis y Galatea

*Multimedia Chamber Opera*

Directors: María Morett and Sergei
Tararin. Orquesta Stravaganza,
under the direction of Carlos Rosas
and Coro de Cámara de México,
Centro Nacional de las Artes.
Horacio Franco with Cappella
Barroca de México. Oaxaca (2014)
Puebla (2013).

# *Curatorships*

2008. Minerva and Myriam become part of MEDIALAB Program at CMM.

2010. After founding Translab at Centro Multimedia, they organize *1er. Encuentro de Artes Performáticas* Festival.


**2008**


**2008**

## Habitat-Draw

*Interactive Drawing Performance*

Myriam Beutelspacher, Jóvenes Creadores grant FONCA. Site-specific narration that seeks to reconcile the body and the intimate day-to-day space through real-time drawing. Participants: Galia Eibenschutz, Eduardo Meléndez, Luis Romero (Wiimote/ Openframeworks/vvvv).

## U= Energía Interna

*Organic-sound installation*

Research aimed at generating organic-sound installations carried on by Minerva Hernández and Alicia Esponda Cásares *U= energía interna* was part of Programa de Investigación y Experimentación Media Lab at Centro Multimedia, Centro Nacional de las Artes co-ordinated by Liliana Quintero, under Iván Abreu and José Luis García Nava's supervision.


**2009**


**2009**

## Historia de mi piel

*Audiovisual Performance*

Collaboration with performer Niña Yahred 1984. Real-time video processing with Isadora software.

## La madeja

*Interactive Performance*

Collaboration with Rebeca Sánchez (FONCA) Ulises Martínez, Ezequiel Netri and Ernesto Romero. Real-time audio and video processing with wireless devices on stage (Wiimote/ Isadora/SuperCollider).


**2010**


**2011**


**2012**

## Intersecciones

*On-line curatorship*

*Semantic intersections body-image-technology. Convergencia de creadores escénicos en el Centro Multimedia* is a small-scaled collection of most relevant work by mexican creators and researchers who explore body and technology from diverse creation fields: code, augmented reality, interactive drawing and real-time video/audio manipulation. Presented in collaboration with Grupo de Pesquisas Poéticas Tecnológicas from Universidad de San Salvador Bahía, Brazil.

**+ INFO**

## Performa 0.2

*On-line Curatorship*

*Performa 0.2 Artes performáticas y tecnología en México* is a research study conducted in collaboration with Rebeca Sánchez (FONCA). Curatorial concept 0.2 is based on the piece's core proposition in regard to the technologic bond with the performer on stage. Research lines are: *linear action, action-reaction* and *action construction*. Some of the artists involved were Esthel Vogrig, Alfredo Salomón, Vivián Cruz, Ricardo Cortés, Alicia Sánchez, Jorge Vargas, Moisés Regla, Paula Sabina, Cristina Maldonado.

**+ INFO**

## Liveness

*Primer Encuentro Internacional de Artes performáticas y tecnología*

From basic concept line: prosthesis, gesture and metaphor, shared experiences were mapped by pioneer artists from diverse latitudes, producing as result the design of a transdisciplinary methodology. (PADID 2012 Award). Participants Ivani Santana (Brazil), Marco Donnarumma (Italy), Martin Bakero (France), Esthel Vogrig (Mexico), Mark Coniglio (United States), Vivian Cruz (Mexico), Ricardo Cortés (Mexico), Kònic Thtr. (Spain) y Daito Manabe (Japan).

**+ INFO**
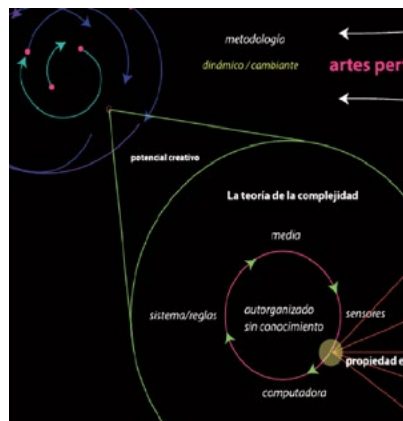
**2010** Cartographies: Theory, creation and experience

*Transdisciplinary Methodology*

Branching out from Translab theoretic structure, three theme lines guided the cartography design for *Liveness: prótesis, gesto y metáfora*. The creation of this methodology for performing arts was awarded with the prize Programa de Apoyo a la Docencia, Investigación y Difusión de las Artes 2011 and was developped in the frame of Programa de Experimentación e Investigación de Arte Electrónico MEDIALAB, Centro Multimedia under the advice of Liliana Quintero and Andrea Di Castro.
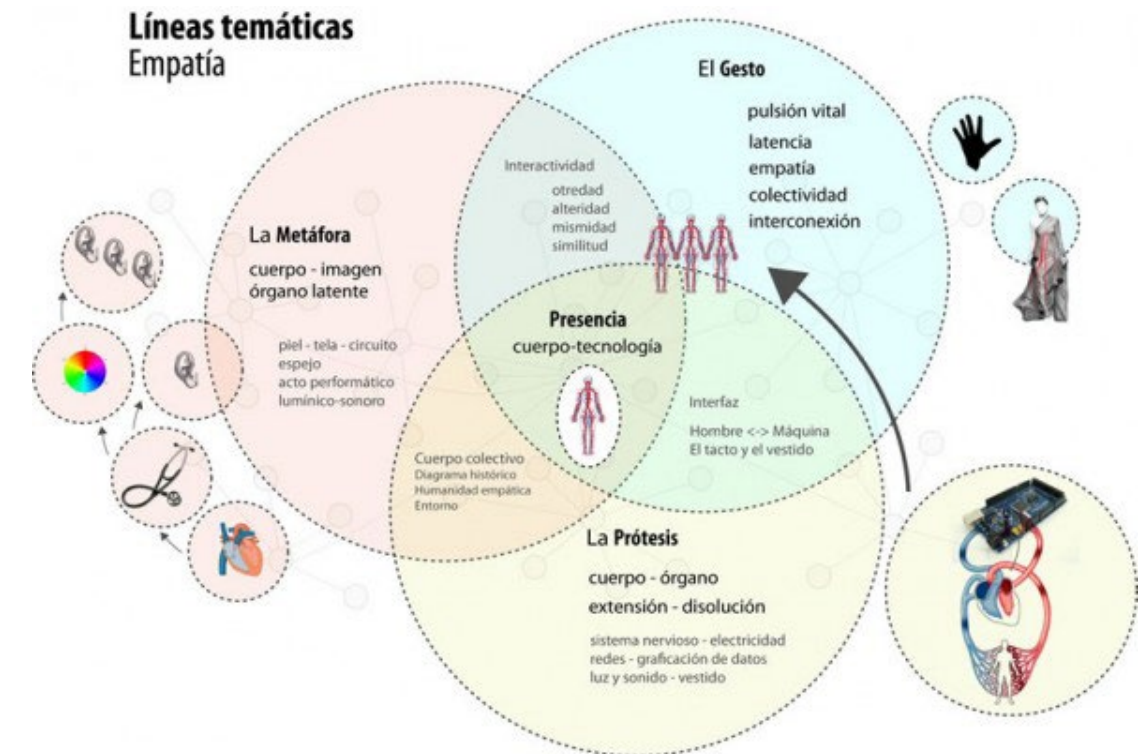


**2012**

Piel Tecnológica

*Research on haptic interfaces*

*Technological Skin* involves the research and production of different interactive costumes based in biophysical interfaces in order to give continuity to contents addressed at the workshop seminar *Cuerpo sonoro + BodyHacking* and *Xth Sense Byophisical Music* imparted by Daito Manabe and Marco Donnarumma at *1er. Encuentro Internacional Liveness: prótesis, gesto y metáfora*. The relevance of studying this concept related to performing arts emerges from the interest of students, artists and audience on the development of portable flexible devices that manipulate audio and video from sensing human body vital signs. Supported by Programa de Apoyo a la Docencia, Investigación y Difusión de las Artes 2012.

2012. Last collaborations with Centro Multimedia supported by PADID Program.

2014. They co-found independent company Bioscénica, Cuerpo Digital y Transdisciplina with Alejandro Ortiz González.



### Empatía v.1

*Interactive Costumes*

Performance duet addressing the concept of human empathy using interactive outfits connected to multiple cardiac pulses. In essence, it attempts to create a collective subject that becomes evident through the addition and variation of chromatic pulses.

**2012**



### Desmodium-máquina

*Robotic Installation*

Copper engraving by a robot arm from plants breathing. Paper Print. (Medialab Collective 2012, CMM Cenart) in the frame of *Sin Origen / Sin semilla*, 1st. bio-art international exhibition in Mexico.

**2012**
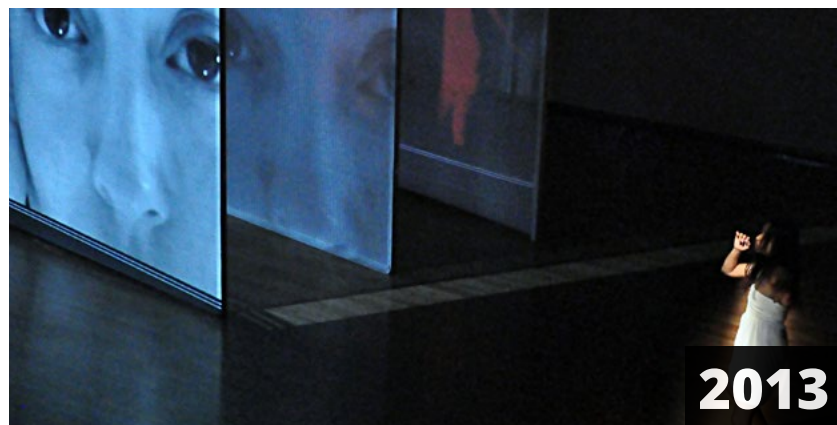


### Embodied in varios Darmstadt '58

*Telematic Dance Piece MX-BR-ES*

 In collaboration with Rebeca Sánchez, Alicia Sánchez, Ivaní Santana Minerva Hernández Trejo and Kónic Thtr. Sound-body as the core of the dancer-musician relationship, located remotely from each other. They operate in real-time through internet.
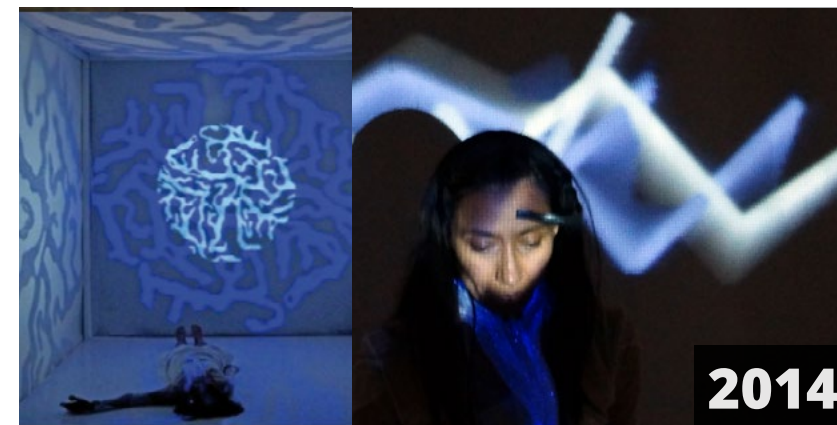
**2013**



### Desconfiguraciones

*Performance Lab*

ASYC/El Teatro de Movimiento in Residence at CASLP. Composer and choreographer: Alicia Sánchez; Movement Technique: Luis Villanueva and Aladino Cruz; Multimedia Landscapes and biosensors: Antonio Isaac Gómez, Minerva Hernández Trejo and Héctor Cruz.

**2014**



### Sociedad mimética

*Digital Performance*

A 1971 installation by artist Hersúa, conceived to be inhabited. Neural halo and technological costumes. Minerva Hernández Trejo, Rebeca Sánchez, Óscar Yañez, Beatriz Marcos and Eduardo Meléndez.

**2014**



### Poses para seguir caminando

*Dance and expanded cinema*

ASYC/El teatro del movimiento. Luis Villanueva, Minerva Hernández Trejo, and Sebastián Solórzano, Luz y Fuerza, Cine expandido. Karen de Luna and Diego Martínez-Lanz.
.

**2014**

## 2014

### Zea Mayz y los otros sentidos

*Collaborative Bio-art*

Audiovisual transduction from receiver of environmental electromagnetic signals produced by 6 indian corn plants amplified by copper spirals. In 2007, research *U = internal energy* resumes 19th century research related to electricity, the acquisition of energy as system property from natural organisms and the ecological knowledge residing in its transversality and organic interdependence of all the elements, overcoming the purely analytical, atomized and unrelated thought, typical of modernity. Minerva Hernández Trejo and Héctor Cruz at MACO, Oaxaca.



## 2015

Minerva Hernández joins collective ARTE + CIENCIA coordinated by Dr. María Antonia González Valerio at Universidad Nacional Autónoma de México.

Myriam Beutelspacher graduates at Maestría de Artes Electrónicas UNTREF in Buenos Aires and initiates node Bioscénica México-Argentina with dramaturg Ezequiel Steinman.
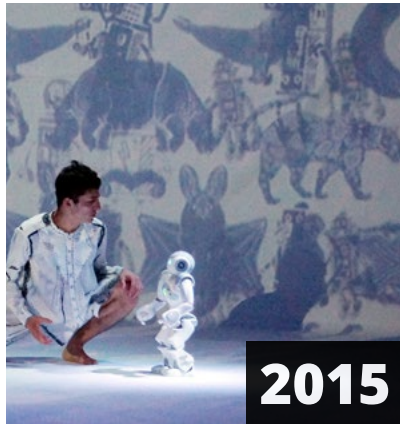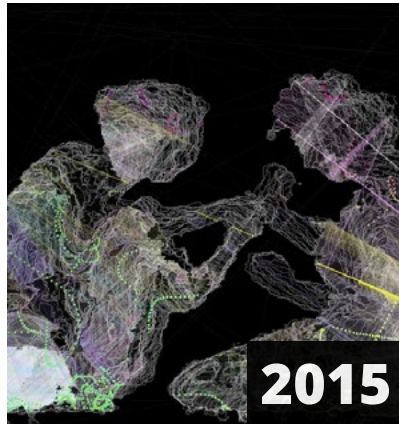
**2015**



**2015**



**2015**

### SAGA El robot actuante

*Dance with NAO humanoid*

Dramaturgy and staging that investigates human relationships during adolescence, resourcing to the Human-Robot interaction as metaphore. Dir. Alicia Sánchez. Performer: Sergio Vazquez. HRI program-ming: Gloria Mendoza Bioscéni-ca – ASYC/El Teatro del Movi-miento – Primero Sueño A.C. in collaboration with Tecnológio de Monterrey CCM – Nao Team and Laboratorio de Diseño Industrial, Posgrado UNAM.

...............

**+ INFO**

### Empatía 2.0

*Digital Performance*

*Empatía* becomes a collective creation methodology that gives path to Laboratorio de Creación Escénica Transdiscipli-nario LABCET. Collaborators in this version are mexican artists Lourdes Roth (choreographer), Mauro Herrera (musician and programmer) Cristian Delgado (cientist) and Minerva Hernán-dez Trejo (visual artist).

### Efusión: código y producción de sentido

*2do. Encuentro Internacional de Artes performáticas, ciencia y tecnología*

Participants are pioneering artists in software development, neuroscientists, physicists and philosophers, among them Klaus Obermaier (Austria), Giorgio Sancristóforo (Italy), Jean-Marc Chomaz (France), Beatriz Marcos (Spain), Fabricio Costa and Ale-jandra Ceriani (Argentina), Aniara Rodado (Colombia), and Jaime Lobato, Lourdes Roth, Alicia Sán-chez, José Luis García Nava and Gabriel Pareyón from Mexico.

**+ INFO**



**2016**



**2016**



**2016**

### Empatía 3.0

*Collective performance*

Presented in the frame of *Encuentro de Arte Interdisciplinar Simbiosis,* Parque científico y Tecnológico de Pachuca. Curated by Colectivo Fronda.

With participants of our work-shops *U=Energía interna (*co-im-parted with Cristian Delgado), and *Paisaje Ánima Mundi* at La Quiñonera.

**+ INFO**

### Transpiksel MX

*Art, Science and Free Technology International Festival*

Curatorship Mexico-Norway-Colombia-Peru

Collective Exhibition, 19 workshops, 14 live performances and 12 conferences under free license and collaborative comunitary processes, with participation of 44 artists and/or collectives, 35 Mexican and 9 foreign. Curatorship in Mexico: María Antonia González Valerio, and Minerva Hernández Trejo.

**+ INFO**

### Arquemáquinas

*Master Degree in Technology and Electronic Arts Aesthetics*

*Arquemáquinas. Indagaciones estéticas en torno al devenir electróncio del fuego*, a thesis by Myriam Beutelspacher, digital performance research project. Directed by Mg. Claudia Valente, adviced by Ezequiel Steinman and Liliana Quintero. Showcased at Transpiksel_MX; *Juguetes filosóficos* FASE 7; *Máquinas de Pensamiento*, UNTREF, and in congresses *Tecnoestética y Sensorium* /UNC and *Antropología del Cuerpo Performance-Investigación* /UBA. Supported by Programa de Becas para Estudios en el Extranjero FONCA-CONACYT

**+ INFO**

>>>>>>>>>>>>>>><<<<<<<<<<<<<<

2018. Plataforma Bioscénica obtains the support of Proyecto BI / BBVA Bancomer with its annual program including LABCO, International LABCET 'Epigenética' and LABCET 'Empatía 5.0 / Dispositivos Hápticos', as part of Festival N and the present digital bilingual publication.



**2017**



**2017**



**2017**



**2018**



**2018**



**2018**

### 'Arte, Ciencia y Filosofía' Diploma

*Postgraduate Program UNAM*

A Diploma with multi and transdisciplinary edge: Focused on technologies (from programming to 3D printing), sciences (from DNA sequencing and recombination to contemporary science theory), philosophy and art history (from aesthetics to art critique), and communication and science dissemination. Directed by Dr. María Antonia González Valerio. Bioscénica imparts contents related to Performing Arts.

**+ INFO**

### Empatïa 4 / La Emociön

*Portugal / France / Belgium / Argentina*

Transdisciplinary performance / Transnational Collaborations / Poetry / Visual Landscape / Performatic Participation / Organic Sound Landscape / Bio-interactivity / Body-Sound-Image Interaction IMD + GEM (Digital Music Instrument + Hand Gestuality) / Live Sculpture.

**+ INFO**

### Núcleo del solsticio

*Astronomical Experience*

Collective Improvisation based on an open score to achieve a deep experience of winter solstice through the body and light. Participants: Claire Filmon, Dulce Trejo, Minerva Hernández, Ezequiel Steinman, Myriam Beutelspacher and Salvador Cuevas.

### Festival N

*Art, Science and Technology*

An Arte+Ciencia project in collaboration with Bioscénica, Cultivamos Cultura, FACTT (Lisbon-New York, CDMX, Toronto), Arte Institute, Coloquio Internacional TTT (Taboo -Transgression – Trascendence), Ionian University, Greece with Audio and Visual Arts Departament, Fundación Bancomer through its Proyecto Bi, ACT, Red CUDI and Fundación Telefónica. Collective Exhibition 'Espacios de Especies' from November 10 to February 15, 2019 at Centro de Cultura Digital.

**+ INFO**

### Empatía 5.0 / DH

*Performance - Instalation Festival N*

*Empatía 5.0/DH Dispositivos hápticos para recordar lo que no sabemos* is composed by four devices: Immersive Sound Chromatic Capsule for mixed realities, Sound Transporter, Sound Mover, and a Containment Station with cilantro seeds. Collaborators: Abigail Jara, Alberto Cerro, Alejandro Ortiz González, Eurídice Navarro, Minerva Hernández, Irasema Serrano and Héctor Ugalde.

### LABCET Epigenética

*Laboratorio de Creación Escénica Transdisciplinario, Festival N*

Experimental methodology by Bioscénica. The opening of an unstable zone of intercrossed trajectories in order to recognize the arsenal of mnemonic tools the body keeps (self-allusive meditations, eyelid cinema, telluric therapoetry, microperformagic, etc.) Collaborators: Aniara Rodado, Alejandro Ortiz, Ezequiel Steinman, Jean-Marc Chomaz, Kònic Thtr., Martín Bakero, Minerva Hernández, Myriam Beutelspacher, Abigail Jara, Alberto Cerro, Carmen Maya, Eurídice Navarro, Jorge Iván Suárez, Paulina Hernández, Tadeo Valencia, Emilio Sánchez and Héctor Ugalde.

In 2018, Bioscénica, in collaboration with Asociación Civil PLACCA (Plataforma Cultural Comunitaria) obtains the support from Arte, Ciencia y Tecnología (ACT) for Science Dissemination awarded by Secretaría de Cultura and UNAM to develop project 'Mosaico Genético en México: una mirada desde las artes' (Genetic Mosaic in Mexico: A gaze from the Arts') in collaboration with a multidisciplinary team of artists and scientists.
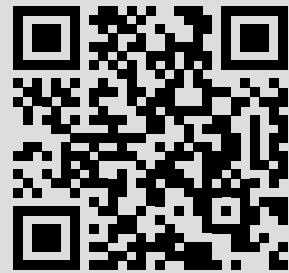
## 2018-2019

### Mosaico genético en México. Una mirada desde las Artes

Our proposal is to open a space of information and reflection as a contribution to creatively enrich genomic disclosure for society's knowledge, as well as making visible the scope, limitations and implications of genomic studies. In order to achieve this, a genomic study of ancestral composition will be performed on a population actively engaged in art and culture, from different disciplines.

**+ INFO**

**Alejandro Ortiz González**
Writer, (PLACCA).

**Sandra Romero**
Researcher Instituto Nacional de Medicina Genómica.

**Minerva Hernández Trejo**
Multimedia Artist, (PLACCA)

**Víctor Acuña**
Physical Antropologist, Escuela Nacional de Antropología e Historia (ENAH).

**Gabriel Pareyón**
Composer and Musicologist, Centro Nacional de Investigación.

**Silvia Piña**
Mathematician, Datametrix.

**Miguel Ángel Contreras**
Physical Antropologist, Escuela Nacional de Antropología e Historia (ENAH).

**Martha Lucía Granados**
Physical Antropologist, Escuela Nacional de Antropología e Historia (ENAH).

**Myriam Beutelspacher**
Multimedia Artist, (PLACCA).

**Juan Carlos Guevara**
Physical Antropologist Intern, Escuela Nacional de Antropología e Historia (ENAH).

# We are

## Art & Transdiscipline in Mexico
vol. 1

Those who write here are vastly experienced in their own geographies and fields of knowledge. Their efforts in promoting live and performing arts with use of technology, as well as their research in Science, Philosophy and Aesthetics prove themselves invaluable to describe a context for current Art and Culture. Their uniqueness and the quality of their contributions make Bioscénica count with them for multiple instances. Here they refer to the evolution of their precedent, present and future work. Together we create memory and resonate collectively.

**ABIGAIL JARA DURÁN**

Choreographer, dancer and fashion designer. Member of Fonca's Sistema Nacional de Creadores 2018. First Mexican choreographer to work with robots (2014) and with multiple realities. Develops Empatía 5.0 / DH (Bioscenica 2018) with support of Fundación Bancomer. With LAIDETEC Laboratory of Technological Development and Innovation, Mexican robot makers, she carried out TRANSKIN-ESTESIA CYBORG, with the support of Programa de Apoyo a la Producción e Investigación en Arte y Medios (2014-2015). Selected for international creation lab of choreographer Ali-Sami (France-Algeria) DIES DE DANSA International Festival, Barcelona (2003). Directs MUSSE DC (2001-current). Professor at Diplomado Transdisciplinario en Experimentación y Producción Artística TRÁNSITOS CENART 2015. Professor at Centro de Investigación Coreográfica INBA.

**ALEJANDRO ORTIZ GONZÁLEZ**

(Mexico City, 1969). He published 'Verbolario' (Mexico, UAM, 1994), 'Sal Picadura' (México, Libros del Dragón, 1997), 'Gimnotos' (México, Ediciones El Camaleón, 1998), 'Elogio de la Transparencia" (Nueva York-México, Chichicastle Art Press, 2006), 'La Música de las Piedras' (Taller Raíz, Nueva York-México, 2007), 'Desde las cenizas' (Taller Raíz, México, 2008) and 'El acopio' (O Pocket Books, 2010). He has been collaborating with artists' books since 1997, and in media from México, Spain, United States, Brazil, Ecuador and Bolivia. Founder of Libros del Dragón and Múltiple, partner in Bioscénica (bioscenica.mx) and in Plataforma Cultural Comunitaria A (placca.org). He is part of Unión Comunitaria por el Pueblo de Tepepan, Coordinación de Pueblos Originarios, Barrios y Colonias de Xochimilco and Ojos de Perro vs. la Impunidad.

**ALEJANDRA CERIANI**

Doctor in Arts; Master Degree in Aesthetics and Art Theory, Facultad de Bellas Artes. Grade III Researcher, with UNLP grant for the study of body disciplines and new technology mediations. Her work involves interactive installations with optical capture of movement: Speakinteractive Project; and also other live arts collaborations. She has published work and articles on Dance Performance and Technology. Imparts seminars (UNLP, UNA, UNTREF, UNQ virtual); Has taken part of seminars and publications in different national and international media. Co-ordinates and directs Cátedra Libre, Educación y Mediación Digital en Danza y Performance, UNLP.

**EZEQUIEL STEINMAN**



**KÒNIC THTR.**



**LUIS ÁNGEL JIMÉNEZ BARRIOS**



**MARCELA RAPALLO**



**MARÍA ANTONIA GONZÁLEZ VALERIO**



**MINERVA HERNÁNDEZ TREJO**

Dramaturg and Performing Arts maker. Completed Master Degree course in Dramaturgy (UNA). Graduated in Artes Combinadas (UBA, 2002). Guest Professor at Masters Degree in Theater and Live Arts (UNA). Professor of Audiovisual Media at Instituto Vocacional de Arte Labardén. Grants and Scolarships: Fundación Williams – Nueva Ópera (AR, 2017). Iberescena Creación Dramatúrgica (2014). Residencia Creadores de Iberoamérica (MX, Fonca, 2011). Secretaría de Cultura de la Nación (AR, 2006). Project Múltiplo (UY, 2009-11), artistic applications of technology available in public schools (Fondos Concursables MEC 2009) and published by Unesco. With node Bioscénica AR he created Los Abuelos Artificiales at Laboratorio de Interactividad Corporal Residence (UCLA + cheLA Bs As, 2018).

Kónic thtr is a Barcelona-based art platform devoted to contemporary creation in the confluence of Art and New Technologies. Their activity focalizes in interactive technology applied to art projects. Kònic thtr is internationally recognized as pioneers in the use and integration of interactive technology to creative projects. Their work was presented in Cataluña, Spain, Europe, American Continent, Asia and Africa. Kònic thtr's over two decade-long researches have enabled a personal and unique language in this field of contemporary creation. Rosa Sánchez and Alain Baumann are the promoters of Kònic (Thtr&Lab) conceptual, creative and technologic line with a vast career linked to new technologies applied to installation, performance, dance and theatre.

Studied the Degree in Art History and Studies at Universidad del Claustro de Sor Juana. Curatorship is his main interest, taking part of several exhibitions between 2017 and 2018 such as *Made in Tepito*, *La política del espacio*, *(Trans)formaciones Residuales* y *Devoción. Una mirada al sublime telúrico*. In this same timeframe, he attended the Diploma *Medios y Mediaciones* with Arte+Ciencia collective. His current research line involves matter as a node that joins Physics, Biology, History and Philosophy studies from an artistic perspective.

Visual artist, performer and educational project developer. Her line of work involves live drawing and interdisciplinary experiences of collective creation. Degree in Visual Arts at Universidad Nacional de las Artes, Argentina (UNA, 2014) and graduated from ENBA Prilidiano Pueyrredón (2002). Postgraduate professor at Unidad Académica de Artes Multimediales (UNA). Involved in tool creation, collaborating with Free Software developers. She has presented exhibitions, stage pieces, performances, and imparted workshops and tutorships in Festivals, galleries, foundations and universities in Argentina and abroad.

(México City, 1977). Doctor in Philosophy at UNAM with Postdoctoral studies in the field of Aesthetics. Full-time professor at Facultad de Filosofía y Letras / UNAM and at Postgraduate studies in Philosophy, Science Philosophy, Art History and Arts & Design. Works in the frame of Ontology-Aesthetics research line and interdisciplinary Arts, Sciences and Humanities, specifically in the field of biomedia art. Director of Arte+Ciencia (Partir del pensamiento inmanente) research and creation group which gathers artists, humanists and scientists around interdisciplinary work, producing postgraduate level professorship, specialized theoretical research, dissemination, art creation and exhibitions.
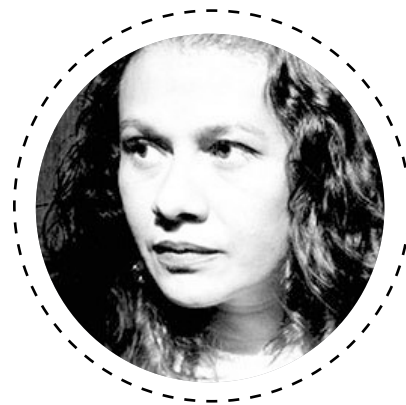
Transdisciplinary artist, curator, director, producer and activist. Member of Sistema Nacional de Creadores de Arte in 2010 and 2018. Studied Photography and Cinematography in Brussels with Thierry Zéno, 1989. Currently directs companies Bioscénica S.C. and PLACCA A.C. Part of research and creation group Arte + Ciencia / UNAM with whom she created the first Art and Science Diploma at MUAC and Facultad de Filosofía y Letras. Published in Artediseño 3 magazine of Facultad de Artes y Diseño / UNAM as well as in the book *Encuentros, arte y nuevos medios en las prácticas artísticas contemporáneas,* by Universidad Autónoma Metropolitana. Her work has been publishing in magazines, newspapers and exhibiting in Mexico, Netherlands, Belgium, United States and France for over 20 years.

**MYRIAM BEUTELSPACHER ALCÁNTAR**

Artist. Co-founder of Bioscénica and PLACCA. Researcher-Professor at UNTREF. Master Degree in Tecnología y Estética de las Artes Electrónicas (Abroad Scholarship FONCA-CONACYT). Graduated from Facultad de Artes y Diseño UNAM and EDINBA. As member of Centro Multimedia - Centro Nacional de las Artes (2002-2013) co-founded research project *Translab, cuerpo y tecnología* three times awarded with PADID prize. Curator and designer of transdisciplinary methodologies for *Encuentros Internacionales de Artes Performáticas, Ciencia y Tecnología: LIVENESS* (2012), *EFUSIÓN* (2015) y *LABCET* (2018). Resident at Laboratorio Interactividad Corporal CHELA-UCLA (2018). Academic Expert (mobility) of 'Divulgación Significativa de Bienes Culturales: Red Digital Musical' at Instituto de Investigaciones Estéticas UNAM-PAPIIT-CONACYT.



**NICOLÁS ORTEGA**

Musician, composer, sound and audiovisual artist, focused in technology and interactivity development. Degree in Music and Technology, professor and member of research project 'Desarrollos Tecnológicos Digitales Aplicados al Arte' at Universidad Nacional de Quilmes. Creator of musical glove IMD+GeM which participated in performances such as Empatïa 4.0 (with Bioscénica, México), collaborative concerts via internet with New York University, Instituto Superior de las Artes de La Habana, Cuba and Universidad de Chile. This device received a 3rd place award at Premio Innovación en Arte y Tecnología (UNQ) and a special mention at Concurso ArCiTec de Arte Ciencia y Tecnología organized by UTN - FunDesCO and Mecenazgo Ciudad de Buenos Aires.



**REYNALDO THOMPSON**

Reynaldo Thompson studied Architecture at Universidad de Guanajuato and postgraduate studies at Universidad Politécnica de Cataluña, Barcelona and at the University of Texas, Dallas, where he achieved a Doctor Degree in the field of aesthetic studies focused on Contemporary Art. He participated in various individual and collective exhibitions and curatorships in Mexico and abroad. He served as director of Art and Business Department at Universidad de Guanajuato and he is currently focused on Latin America art, science and technology research. He has also contributed in national and foreign publications, most recently in Leonardo magazine, *The International Society for the Arts, Science and Technology* at Massachusetts Institute of Technology, and a book chapter, part of *Experiencing the Unconventional: Science in Art.*



**RICARDO CORTÉS ESPINOSA**

Interdisciplinary Artist, electroacoustic musician and incidental music composer for dance, theater and audiovisual media. Member of Sistema Nacional de Creadores de Arte (2014-2016). Commissioned to compose the opening for Centro de Cultura Digital's Memorial (2012). Resident at Experimental Media and Performing Arts Center, New York (2012), at Creadores de Iberoamérica en México (2011) and BANFF Centre for the Arts (2007). Invited to Festivals Visiones Sonoras XI (2015), Transitio MX (2009, 2005) and Liveness (2012). Guest professor at Universidad Católica de Chile (2012, 2010) Professor at Taller Multimedia para artes escénicas CENART (2000-2008). Digital Audio Professor at Centro Escuela de Diseño, Cine y Televisión (2008-current). Head of Laboratorio de Informática Musical at Conservatorio Nacional de Música (2009-2011).



**TIRTHA MUKHOPADHYAY**

Tirtha Prasad Mukhopadhyay studied literature, language and aesthetics at the University of Calcutta, India, before obtaining his Doctorate in Interdisciplinary Humanities at University of Texas in Dallas. Fulbright scholar at University of California Santa Cruz. He also worked as a professor of higher education in India, United States and Mexico. Mukhopadhyay has written extensively on aesthetics, archeology of consciousness and Indian philosophy. His articles were published in Viswabharati of University of Tagore, India, MIT Press' Leonardo magazine on digital art and technology, as well as in UISSP-CISENP foundation for the arts of non-literate cultures, Italy. He is founder and editor-in-chief of interdisciplinary magazine Rupkatha Online (SCOPUS) and also a practicing poet in Bengali language.

**PHOTO ARCHIVE**

Minerva Hernández Trejo
Marco Antonio Manrranéz
Mónica Dafne Alcántar Rubio
Giussepina Vignola
Jaime Rodríguez
Eurídice Navarro
Tadeo Valencia
Andrea Narro
Myriam Beutelspacher Alcántar
Héctor Cruz
Guadalupe Chávez Pardo
Mauro Herrera
Arcángel Constantini
Gilberto Esparza
Gabriela Munguía
Kònic Thtr.
Eric Kinkopf

Fundación
**BBVA** Bancomer

PROYECTO **B**

cudi

**CULTURA** FONCA
SECRETARÍA DE CULTURA

**placca**
PLATAFORMA CULTURAL COMUNITARIA A.C.

**bioscénica**
cuerpo digital y transdisciplina

Spanish and English (translated) Edition.
Free to download
https://bioscenica.mx/publicaciones