

# **MESTIZO TECHNOLOGY:**

art, design, and technoscience  
in **LATIN AMERICA**

**Media-N Journal** was established in 2005 to provide a forum for New Media Caucus members, featuring their scholarly research, artworks, and projects. The **New Media Caucus** is a nonprofit, international membership organization that advances the conceptual and artistic use of digital media. Additionally, the NMC is a College Art Association Affiliate Society. The mission of the electronic and print journals is to promote academic inquiry conducted by **NMC** members; to reflect the wide variety of themes and fields in new media research; to further the evolving discourses related to theory and practice; to showcase the work of new media artists and their presentation environments; and to investigate the issues surrounding education and new media. Three editions are published per year: spring, summer, and fall. **Media-N's** online & print versions differ in format but are similar in content. The publication is freely available online, and the print version may be purchased through a print-on-demand service. Each has a unique ISSN. **Media-N** is a blind, peer reviewed, and invitational journal. It is open to submissions in the form of theoretical papers, reports, and reviews on new media artworks.

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# MESTIZO TECHNOLOGY:

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## EDITORIAL STATEMENT

Latin America is a very diverse geographical and cultural region embracing countries that stretch from the southern border of the United States to the southernmost tip of South America, including the Caribbean, and populated by a wealth of extremely productive new media specialists with significant local and global exposure. Yet, scarce are academic English language anthologies composed of theoretical writings that survey the status of art, technology, and design practices in and by that constituency.

With this in mind, *Media-N*'s mission has been to support a provocative theme that might begin to fill the gap. *Mestizo Technology: Art, Design, and Technoscience in Latin America* is the title proposed by Guest Editors **Paula Gaetano Adi** and **Gustavo Crembil** with the intention of employing a lens merging notions of *mestizaje* and new technologies to scan the development of new media practices distinctive to Latin America; to survey how influences from the Global North have been appropriated and adapted to particular needs, resources and interests of Latin American thinkers and makers; and to also challenge traditional dichotomies afflicting perceptions about productions emerging from the Global South: western/indigenous; modern/traditional; craft/technology; and big science/small science.

It has been extremely gratifying to work on this edition and I extend my appreciation to the Guest Editors for their vision, to the authors and artists for the essays and media that populate these pages; to *Media-N*'s Associate Editors **Meredith Hoy** and **Francesca Franco** for their role as supporting Editors for this issue; to the RISD Writing Center and RISD Graduate Studies for their invaluable backing throughout the editing process, specifically copyeditor **Maia Chao**. The combined collaboration of this team has been instrumental in the making of a rich addition to *Media-N*'s series of yearly thematic journal editions.

Further, *Media-N* enhances this issue with timely Reviews and Reports. Edited by **Francesca Franco**, this section of the journal presents reviews of events taking place in Italy, Australia, the USA, and online. Interviews with prominent international figures about their work in new media round up the Reports section.

**Jon Blackwood** reviews the book *REWINDItalia* and remarks on the editors' novel approach to the currency, history, and growth of video in Italy. This is followed by **Jiayi Young's** discussion on the growth in collaborative practices that integrate artistic aesthetics and processes with that of biological and physical sciences and technology. In the next article, **Paul Hertz** deliberates on the development of new forms of art, authorship, distribution, and political action focused on media technology, and offers an overview of topics debated during the 2015 event "Networked Practice, an International Online Symposium on Innovation in Networked Research, Artistic Production, and Teaching in the Arts." Further, **Sharon Greenfield** and **Franziska Weidle** review the *Mobile Innovation Network Australasia (MINA) Symposium* that took place at RMIT University in Melbourne in 2015. The event included a conference and multiple screening events that offered a platform for recent international smartphone, mobile, and pocket films. The edition ends with three conversations. **Abigail Susik** offers an interview with Montreal-based electronic artist Pascal Dufaux about his series of *Vision Machines*; **Laura Leuzzi** and **Elaine Shemilt** publish a conversation with Federica Marangoni, an Italian pioneer in video, performance, and installation; and **Dejan Lukic**

talks to curator **Seol Park** about Augmented Reality's potential for content development around the event *#AUGMENTED*, a 2015 outdoor experience in Miami Beach showcasing large-scale digital art installations.

This edition also marks the culmination of a vigorous six-year journey where I have had the pleasure of contributing to the exponential growth of the New Media Caucus as Officer of the organization's Executive Board and to shape the direction of its academic publication as Editor-in-Chief of *Media-N* Journal. I would like to highlight that a team of volunteers makes *Media-N* editions possible in a yearlong venture of dedicated work to produce publications that have focused on cutting-edge themes of relevance to the profession in fast track web and print on demand publishing platforms. Upon concluding my second term as Editor-in-Chief of *Media-N*, I think it is timely to extend my heartfelt thanks to the NMC board, to *Media-N*'s editorial board, to our copyeditors and proofreaders, to our web and print design directors, and to the various guest editors and authors for their efforts, the sharing of expertise, and their commitment to quality throughout the last six years. For me, it has been an invigorating project, one that an exceptional *Media-N* team will sustain and build upon in the years to come.

**-PAT BADANI, EDITOR-IN-CHIEF  
(2010-2016)**

# MESTIZO TECHNOLOGY:

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➤ CURRENT ISSUE: SPRING 2016: V.12 N.01 ◀

## GUEST EDITORS' INTRODUCTION

PAULA GAETANO ADI, Assistant Professor, Rhode Island School of Design  
GUSTAVO CREMBIL, Associate Professor, Rensselaer Polytechnic Institute

*"I am where i think,"* Walter Mignolo

*"El choque de un alma atrapado entre el mundo del espíritu y el mundo de la técnica a veces la deja entullada,"* Gloria Anzaldúa

"Mestizo Technology" is a creative conceptual appropriation inspired by the legacy of two distant, and apparently unrelated occurrences: *mestizaje* [1] not as the study of mixed-race people, but as a creative and transformative practice and cultural theory of resistance; and technology, alongside the rising interest in hands-on and critical making practices. This special issue, thus, is a compilation made possible by the sustained growth of creative modes of working at the intersection of technoscience, art, and design, in coalescence with a need to reach beyond the Western canon in search of an epistemic democratization.

How is technology-based art produced within Latin America? How is technology embodied, appropriated, transformed, and assimilated in the region within the context of art and design? How do scientific ideas and technology migrate back and forth between *El Norte* and *El Sur*, and how are they degutted and assembled into new aesthetic discourses? Questioning the dominant model that assumes that scientific technical research is a domain reserved for the Global North, "Mestizo Technology" proffers arguments for recognizing the nature and value of 'a world of sciences and arts' by presenting a selection of scholarly essays that feature work produced by artists and designers living and working in Latin America.

Commonly perceived as a region of strong territorial identity with shared geography, history, and dominant languages, Latin America is, nevertheless, an enormously diverse and contradictory territory. It is not only an open unit linked to global flows of cultural hybridization, but also an intricate block with distinctive (and conflicting) local histories, practices, and cultures. For that reason, this issue was conceived with an emphasis on the "situatedness" of technoscience, convinced that even the widest networks are local at all points and that, in a globalized world, art, science, and technology inhabit the "contact zones." [2]

Therefore, this special issue speaks about the creation of novel technologies as well as the effects of tinkering with existing ones, and portrays how creative and aesthetic practices are proving that technology is a contested arena with very complex local processes of reception, rejection, and adaptation. It is a critical reflection on technology and society through works that blend and extend the fields of design, contemporary art, and DIY/craft from the convoluted lens of *mestizaje*. [2] 'Mestizo'—a conflicted and problematic term often used to describe a quest for homogenizing regional identity based on a history of essentialized and biologized racial ideas—is appropriated here to describe the processes of creative experimentation currently taking place in Latin America. "Mestizo Technology" is a kind of conceptual placeholder that allows us to speak about the impossibility of escaping the contradictions and dilemmas of Latin America's multiple heritages. *Mestizaje* is not just hybridity, syncretism, or *mélange*, as those phenomena may not fully account for the various conflicts that *mestizaje* undertakes. While embodying heterogeneous juxtapositions and amalgamations aiming toward hybridity, *mestizaje* also acknowledges the intricate development of Westernization that began in the sixteenth century with colonization and persists today with current processes of globalization, in which modern technology plays a fundamental role.

Our original call aimed to present practices situated and operating in the frictional space between global technological frameworks and local histories and materialities, and also to challenge the 'modern' idea that technology speaks a universal language.

Collectively, the essays in this volume address how technology and art/design function in the everyday push and pull of political, economic, social, and cultural affairs of Latin America, while describing how artists, designers, and local makers/developers are using different tactics to create innovative, sophisticated, experimental, humorous, and rebellious technology-based artworks.

We open the issue with an essay that discusses the emblematic works of two of the most relevant feminist video artists from Latin America: Brazilian artist Sonia Andrade and Mexican artist Pola Weiss—two conceptual artists that feminized the concept of *mestizaje* during the second half of the twentieth century. In their essay, Sarah Shamash and Gabriela Aceves Sepúlveda situate the artists and their works in their geo-historical, sociopolitical, and cultural context and demonstrate how they cannibalized and embodied the manifestos of Oswald de Andrade and José Vasconcelos from a feminist perspective.

A hybrid journalistic report and a personal diary, "Travel Notes on Mestizaje and Technoscience," is the second essay in this issue written by the Mexican cultural producer Tania Aedo. In her essay, Aedo attempts to demonstrate how knowledge can be produced through an aesthetic object and offers a critical reexamination of the key terms of *mestizaje* and technoscience proposed by this issue. While traveling and participating in different events related to the relationships between art, science, and technology, Aedo contextualizes contemporary practices in Latin America and sets up a fertile ground for all the essays to follow.

Diana Domingues and Eduardo Castillo, two leading practitioners working in different disciplines and utilizing radically different technologies, are the authors of the next two essays. Diana Dominguez is an internationally recognized artist-scholar and a pioneer developer of virtual reality (VR) and interactive technologies. For over 20 years, in her native country of Brazil, she has created immersive “ouroboric” experiences that link primitive ritualistic spaces with contemporary cutting-edge human-computer interaction (HCI) and immersive technologies. In her essay, Domingues outlines the contours of her artistic research and provides us with new insights about the paradoxical nature of her hybrid enactive systems. Chilean architect Eduardo Castillo, on the other end, presents a very different landscape; one stripped down to its bare essentials and comprised of wood, concrete, and metal. In a distinctive poetic tone that speaks to the quotidian and the canonical, Castillo presents his architectural oeuvre developed within Chile’s ‘rurality.’ It is a work attentive to issues of the environment and the everyday, and born out of profound preoccupation about materiality as a state of resistance.

Also with a focus in design practice, the duo Pedro Oliveira and Luiza Prado introduce their “decolonial artifacts” conceived for critical speculation. In their essay, they ask us to imagine possible futures through the language of social and digital media, and they encourage collaborative design methods for political literacy that may help overcome some of Latin America’s social inequalities.

José-Carlos Mariátegui’s contribution explores developing patterns around transdisciplinary models and practices for techno-social transformations in the Andean region of South America. He presents the case of Escuelab, an emblematic experimental hub in Lima, Peru that offered a new model of institutional structure and fostered community networking as well as alternative modes of knowledge production.

Far from the dominant web-influenced discourses of Post-Internet Art or the New Aesthetic, Heber Rodriguez examines new creative practices that react critically to the language and symbolism of the Net in the formation of a new type of digital subaltern. Through the analysis of the work of the Uruguayan artist Brian Mackern, the Chilean duo Chimbabab, and the Mexican collective Astrovandalistas, Rodriguez speaks about alternative ways in which art can serve as a place to challenge and replace the embedded power dynamics of the Internet with more egalitarian ones.

From the view of another neighboring discipline, Luis Fernando Medina Cardona traces different examples of cultural grass-roots activism in Colombia arising from the political camp of Free/Libre and Open Source Software (FLOSS). Emphasizing the importance of libre software, Medina Cardona traces some of the ethics and values of the open software cultural movement to pre-Columbian practices, which fit seamlessly with the idea of open communicative processes and sharing.

Claudia Costa Pederson’s essay reflects on the significance of video game studies as a site of negotiation. In her writing, she focuses on the work of developers Gonzalo Frasca and Rafael Fajardo and demonstrates their tactics for *conscientização* (“consciousness-raising”). Two of the most well known figures in the field of social games, they appropriate and reroute a medium typically used to buttress imperialist and commodity culture, to empower players’ learning and trigger personal and social change.

Finally, we conclude this special issue with two visual essays featuring rich, diverse, and powerful contemporary artworks that connect technology back to our physical and material world. Victoria Messi analyzes a series of projects and interventions developed by artists who creatively explore the use of technology to rethink the relationship between technical progress and urban development. Referencing the work of Arcángelo Constantini, Ivan Puig, Rodrigo Derteano,



Leonello Zambón, and Gilberto Esparza, Messi describes projects that deal with some of the most alienating, unsustainable, and contradictory aspects of Latin America's megalopoli. From another perspective, Jasmín Adler illuminates new directions in Argentine electronic arts that seem to continue Argentina's long history of art/technology. Adler portrays four installations whose formal, aesthetic, and conceptual premises seem to disdain the great absence of sustainable institutional support and the lack of criticality among local institutions in approaching technology as cultural progress.

"Mestizo Technology: Art, Design, and Technoscience in Latin America" is not intended as the last word in this discussion; on the contrary, it is an introduction and a snapshot of some promising and provocative work taking place in Latin America. As such, this volume deepens our knowledge of the richness of media practices, brings new conceptual approaches for thinking

through technology-based art and design, and opens up a new arena for debate. Just as *mestizaje* is a practice of continued contestation, we see this series of papers as incitement for further examinations into the meanings, histories, futures, and critical potential of a "mestizo technology" that emphasizes formal and informal, networked, peer-led, and shared learning practices. For us, as guest editors, this issue is a perfect context to create experimental spaces for a radical "delinking" [3], one that is at once epistemic, technological, and aesthetic.

#### NOTES

1. For readings on critical *mestizaje* see scholars like Gloria Anzaldúa, George Yudice, Serge Gruzinski, Walter D. Mignolo and Rafael Pérez-Torres.
2. Mary Louise Pratt, "Arts of the Contact Zone," *Profession* 91 (1991): 33-40.
3. Delinking is understood here as a de-colonial epistemic shift that leads to different alternative narratives to the Western foundation of modernity, and brings to the foreground other epistemologies and other principles of knowledge and understanding. For further reading consult Walter D. Mignolo, "Delinking," *Cultural Studies* 21:2 (2007): 449-515.

#### BIOS

Paula Gaetano-Adi (b. Argentina) is Assistant Professor of Foundation & Experimental Studies at the Rhode Island School of Design. An artist and scholar working in sculpture, performance, interactive installation, and robotic agents, she has exhibited her works extensively in both solo and group shows in locales such as Beijing, Stockholm, Madrid, New York, Mexico City, Sao Paulo, Berlin, Moscow, and Tasmania, among others. She received awards for her work such as the First Prize VIDA 9.0 (Telefónica Foundation Spain); the First Prize LimbØ (Museum of Modern Art Buenos Aires), Argentina's National Endowment for the Arts Fellowship; the RISD Bridge Grant; and the Incentive Grant for Ibero-American artists awarded by VIDA 14.0 Art & Artificial Life. She earned an MFA in Art & Technology from The Ohio State University, and a BA in Audiovisual Communication from the University Blas Pascal in Argentina. Visiting scholar at REMAP/UCLA, professor at UNTREF Electronic Arts program in Buenos Aires, and artist-in-residence at EMPAC Rensselaer Polytechnic Institute, she has lectured in conferences and art schools worldwide, contributing actively to the field of new media art with papers and publications.

Gustavo Crembil (b. Argentina) draws from the fields of design, architecture, craft, performance art, communication, and political

activism. He holds a Master of Architecture from Cranbrook Academy of Art and a professional Architect Diploma from the Universidad Nacional de Córdoba, Argentina. A Fulbright scholar, he has received several grants and awards such as UNESCO-Aschberg, Argentina's Fondo Nacional de las Artes and Fundación Antorchas, Rensselaer Polytechnic Institute's Browns Travelling Fellowship, Acadia/Flatcut, VIDA 14.0 Art & Artificial Life (Fundación Telefónica, Spain), and The Rotch Studio Grant. Among his residencies are appointments at the Hypermedia Studio/UCLA, European Ceramic Work Centre (The Netherlands), and the Creative Glass Center of America/Wheaton Arts (Milville, NJ). His work has been exhibited internationally at Museum Caraffa (Argentina), Museum of Modern Art and PS1 (New York), Dutch Design Week, RE-New Festival (Copenhagen), Transito\_MX (Mexico), and Disruption/ISEA (Vancouver). In 2004 he was guest architect-in-residence at Cranbrook Academy of Art. He was a founding partner of THEM: Lynch + Crembil, a practice recognized as an emergent architectural voice by the Museum of Modern Art and by ACSA/JAE (Association of Collegiate Schools of Architecture/Journal of Architectural Education) for its contribution to "design as scholarship." Currently he is Associate Professor of Architecture at the Rensselaer Polytechnic Institute (RPI). He lives and works in Troy, NY.

# Feminizing OSWALD DE ANDRADE'S "Manifesto Antropófago" and VASCONCELOS' *Raza Cósmica*: THE VIDEOS OF SONIA ANDRADE and POLA WEISS

Sarah Shamash, Independent Media Artist and PhD Candidate at the University of British Columbia;  
Gabriela Aceves Sepúlveda, Assistant Professor in the School of Interactive Arts and Technology  
at Simon Fraser University

**KEYWORDS: MESTIZAJE,  
VIDEO ART, FEMINIST,  
LATIN AMERICA, FEMINIZED  
PERSPECTIVE, RAZA  
CÓSMICA, MANIFESTO  
ANTROPÓFAGO, HYBRIDITY,  
CANNIBALISM, NÁHUATL,  
CYBORG, THIRD-WORLD  
FEMINISM, NEW MESTIZA  
CONSCIOUSNESS**

The term *mestizaje* has been broadly used to denote the hybrid nature of Latin American cultures. Two of the most notable engagements with hybridity came from the Mexican José Vasconcelos' *La Raza Cósmica* (1925) and the Brazilian Oswald de Andrade's "Manifesto Antropófago" (1928). Both of these modernist intellectuals developed a strategy to resist western colonial domination and to embrace a unique culture that blended multiple histories, ethnicities, cosmologies, and practices. This paper addresses how, in the 1970s, Brazilian video artist Sonia Andrade (b. 1935) and Mexican video artist Pola Weiss (b. 1947-1990) cannibalized and embodied Andrade and Vasconcelos' manifestos from a feminized perspective.

Following the work of the Chilean critic Nelly Richard, feminization is understood as a process that breaks down the barriers of biological determinism and fixed symbolic roles, thus becoming a practice of continued contestation. This is not only relevant to those who define themselves as women, but also to a multitude of experiences that contest normative and fixed definitions of sex, race, or ethnicity. [1] From this perspective, we also position Andrade and Weiss' work as part of a meaningful dialogue with those Chicana scholars who feminized the concept of *mestizaje* during the second half of the twentieth century.

Most famously, by the mid-1980s, Chicana scholars Gloria Anzaldúa and Chela Sandoval re-engaged with the concept of *mestizaje* to theorize their experiences as mixed-queer-third-world feminists

of color in the United States. [2] In particular, Anzaldúa's new mestiza consciousness, which stressed the potential of crossbred, queer, and indigenous peoples to propose a new angle of vision—namely, a critical way of challenging the binary structures imposed by western patriarchy—became foundational to the development of Chicana scholarship. [3] Anzaldúa's new mestiza consciousness went beyond biological definitions of mestizaje: she defined a holistic epistemology as “a more whole perspective, one that includes rather than excludes.” [4] Building on Anzaldúa's work, Sandoval proposed an oppositional consciousness as a way to explore “affinities inside of difference.” [5] Sandoval's oppositional methodology describes a set of strategies that seek to build bridges and trace affinities between the work of what she calls “postcolonial US third-world feminist criticism” and canonical western postmodern cultural theorists in order to put an end to “academic apartheid.” [6] Indeed, Sandoval's work is central to Donna Haraway's “A Cyborg Manifesto” (1985), the foundational text of cyborg feminism. [7] For Haraway, the cyborg is a hybrid between organism and machine: “a matter of fiction and lived experience that changes what counts as women's experience in the late twentieth century.” [8] Significantly, one of the central objectives of Haraway's “Manifesto” is a broader political project aimed at transgressing boundaries and undoing the dualisms and essentialisms of dominant intellectual and cultural traditions that dictate the construction of hierarchies of difference.

However, it is noteworthy that in the chicana-feminist-queer-cyborg-third-world re-engagement with the concept of mestizaje/cyborg, the voices and experiences of Latin American women from the South are excluded. Consequently, this paper seeks to address this omission by discussing two emblematic videos, *Sem título* (1975) by Sonia Andrade and *Somos Mujeres* (1978) by Pola Weiss, while situating the artists and their works in geo-historical and socio-political-cultural contexts. In doing so, we collaboratively map diverse re-engagements with the concept of mestizaje (including hybrids of self and technology) developed by Latin American women as a critique of dominant social structures. And, in the spirit of Chela Sandoval's search for commonalities of strength and affinity, this paper seeks to find those commonalities of strength and affinity among women in the Americas who feminized the concept of mestizaje during the second half of the twentieth century. [9]

*Só a ANTROPOFAGIA nos une. Socialmente.  
Económicamente. Filosoficamente.*

— Oswald de Andrade [10]

The table is set with a dish of black beans; bread, beer, and coffee complete the image of typical Brazilian food and domesticity in Sonia Andrade's video, *Sem título*. [11] We see a woman seated on an apartment balcony, a television in the background. The woman sits with her back to the television

screen, facing the camera, dishing out a meal of *feijão* (black beans). The television and its soundtrack create an audiovisual disturbance in this otherwise wholesome, albeit banal, moment of repose—a woman sitting down to a meal in her home. In Andrade's video, a television station is showing a black and white Tarzan film, an American production dubbed in Portuguese, portraying the South as barbaric, primitive, and exotic.

About three quarters of the way into the video, after many long minutes of consuming her beans, Andrade suddenly abandons her spoon and starts rubbing beans on her face and neck. The banality of the ritual of eating a meal suddenly disintegrates into a new ritual, a discordant image of woman, television, and home. The woman smears black beans all over her head, face, and body, until her face is blackened. She then starts throwing beans at the camera lens in what may be considered an attack against this invasive lens, which signals a moment of voyeurism in this domestic scene, thus breaking the fourth wall. We hear the smack of beans hit the camera lens until all we see are abstracted images of the beans dripping down the lens, the dominant soundtrack of the television still ringing in our ears.

It isn't until we witness Andrade's seemingly barbaric yet calculated and ritualized behavior with the beans that our attention shifts from the television to the foregrounded woman. With a banal, minimal, and domestic *mise en scène* of food, television, woman, and body, Andrade re-conceptualizes the complex inter-relationships of the above in the context of an urgent political and social condition.

The historical moment in which Andrade made this 1975 video was one of Brazil's most politically fraught periods, characterized by a highly repressive military dictatorship and extreme censorship laws. After the 1964 military coup in Brazil, the cultural landscape shifted as artists adapted to the newly repressive

environment by broadening the relations between art and spectatorship, while challenging accepted norms of art through the use of existing technologies and modified production materials, such as in Andrade's video experiments. Significantly, in 1968—a critical year in Brazil, Mexico, and internationally, marked by abuses of human rights, mass demonstrations, political upheaval, and demands for social justice—a new law known as the Fifth Institutional Act (AI-5) was passed. [12] Under this new law, a complex system of censorship regulations was put in place, restricting any form of public commentary and entertainment, including journalism, music, film, theatre, and art. However, Andrade, and her pioneering video art contemporaries often managed to pass under the radar of this restrictive law with videos that critiqued the dictatorship, as video art was not seen as a threat in its early days. [13]

Also of note, in that same year *Tropicália*, one of Brazil's most influential cultural movements, was launched in response to the increasingly strict laws and the generally repressive climate for artists, activists, journalists, and intellectuals, who were being tortured and forced into exile. [14] As Elena Shtromberg explains, "Art is an open system ... a matrix of social exchange." [15] *Tropicália* was characterized by a fusion and hybridization of forms and influences that combined traditional Brazilian culture with foreign influences, the popular with the avant-garde, in order to create something new and unique.

*Tupí, or not Tupí: that is the question.*

—Oswald de Andrade [16]

The dominant doctrine of *Tropicália* was *antropofagia* (cannibalism), which took the original concept from the poet Oswald de Andrade's famous 1928 "Manifesto Antropófago." Of historical interest is that the first television channel in Brazil was called "TV Tupí"; it was also the first commercial television broadcast in

South America, in September of 1950 by Assis Chateaubriand, a co-founder of the São Paulo Museum of Art (MASP) in 1947. [17] In 1975, Sonia Andrade made her video *Sem título* at a time when almost no one was using video, after an invitation by the then-director of the MASP. Her 1970s series of videos, all titled *Untitled*, comprise a vitriolic critique: they drew attention to the bodily pain of torture employed by the regime, the patriarchal view of women, and the use of television as a predatory tool in the hands of the dictatorship.

Looking back at Brazil's television history, the Ministry of Communications was created in 1967, the same year that the famous Brazilian artist, Hélio Oiticica, exhibited his installation *Tropicália* (the name subsequently taken up for the cultural movement) at Rio's Museum of Modern Art as part of the *New Brazilian Objectivity* show. [18] Also in 1967, the newly created Ministry of Communications allied itself with the Brazilian government's agenda to increase control of the Amazon basin by means of the Trans-Amazon Highway.

In effect, television became the means to aggressively promote the government's ideological agenda, both in Brazil's urban hubs as well as in its hinterlands. Just as the state was investing in telecommunications technology, Andrade used the same technology as a tool to express and engage with ideas through the visual, corporal, non-verbal, and gestural. The political dimension of Andrade's work in her 1970s video series is as pervasive as the booming television in her frame. As articulated by Marshall McLuhan, "TV will not work as background. It engages you. You have to be with it." [19] In this way, the television in Andrade's work becomes a constant reminder of the invasive presence of the repressive authoritarian regime, while Andrade enacts, through corporal gesture, new ritualized relationships with food, television, and body within the confines of the frame.

Andrade drew attention to the political and social body by turning the camera on herself in her single take, fixed-camera, monochrome videos that meditate on bodily gestures. Andrade's work, which engaged her body and the medium of video, provided alternatives to television's dominant and unrealistic projections of Latin American women and their lifestyles, along with the rest of the televisual norms dictating gender, family, religion, politics, and social behavior. Feminist and cultural critic Nelly Richard discusses how the body is a site for exposing tensions in repressive societies. Richard asserts that "under circumstances where censorship is applied to vast areas of meaning in language, any superfluous discourse or unspoken pressure which escapes or undermines the syntax of the permitted can only surface as bodily gestures." [20] Certainly, Richard's arguments, made in reference to Chile's dictatorship, are apt in Brazil's political climate during the 1970s.

Ultimately, Andrade's videos, similar to those of her Mexican contemporary Pola Weiss, used the then-new medium as a poetic and utopic hybrid extension of the female body that had the power to cannibalize and attack its political enemy.

*Present world conditions favor the development of interracial sexual unions, a fact which lends unexpected support to the thesis which, for the lack of a better name, I entitled: The future cosmic race.*

—José Vasconcelos [21]

In his essay *La Raza Cósmica*, José Vasconcelos foretold the coming of a new age for mankind in which racial barriers would lose their force and ongoing racial mixture would lead to the cosmic race. According to Vasconcelos, this new race would be "gifted with the power of creative fantasy over reason" and its dominance would coincide with the "Spiritual or Aesthetic Era of mankind." [22] Vasconcelos' essay

was foundational to Mexico's post-revolutionary nationalist project of *indigenismo*, which relied on the concept of *mestizaje* as the main element that would bring radical change to Mexican society. [23] Of particular interest is that, as secretary of education from 1921 to 1924, Vasconcelos played a crucial role in the construction of national imagery based on the promotion of "mestizo aesthetics," encouraging the development of the Mexican School of Muralism, which, along with photography and film, helped to visualize and promote the values of *indigenismo*. [24]

In the 1970s, Pola Weiss looked back at Vasconcelos' cosmic race to formulate the coming of a new era rooted in the emerging role of video as an artistic medium and its connection to television broadcasting. Like Sonia Andrade, Pola Weiss began to experiment with video technology at a time of social and political turmoil. In the aftermath of the 1968 massacre of students in downtown Mexico City, the Mexican state embarked on a populist program of reforms to regain popularity. Part of the package of reforms targeted the television industry—which had been in the hands of the private sector since the early 1950s—as the most effective means to influence public opinion. [25] These reforms led to the consolidation of three main institutions that vied for televisual airwaves and programming. [26] These recently established broadcasting institutions were not only open to experimenting with video technology but also eagerly opened their doors to a new generation of media professionals—including women. [27] As early as 1973, Pola Weiss began to collaborate with these three institutions in various capacities, and soon after established her own production company ArTV (1978). [28]

Weiss believed that televisual art (or ArTV as she called it) could foster large-scale transformations that would shape a new man, one she labeled, "el hombre cósmico" (the cosmic man). [29] For Weiss, the cosmic man was an embodied critical media

viewer in touch with his/her feelings—a sensorial being who challenged dominant regimes of visibility and separated the act of viewing from other sensorial experiences. [30] Unlike Vasconcelos' cosmic race, Weiss' cosmic (wo)man would foster change not through racial mixing, but through the development of hybrids of self and technology. [31] For Weiss, the new aesthetics of *mestizaje* for this televisual era would no longer be distributed and popularized through murals, photography, or films predominately created by male artists, but through televisual images increasingly produced by women who, like her, embraced the potential of video and television broadcasting. Indeed, just like Sonia Andrade, Weiss was attracted to video because of its lack of history, which, as Midori Yoshimoto has described, afforded many 1970s female artists a clean slate, allowing them to launch their careers without the burden of an existing male tradition or established categories and genres. [32]

In Pola Weiss' *Somos Mujeres*, the camera moves quickly between shots of busy street traffic, close ups of a church, modern buildings, and women begging on the streets with children in their arms or strapped to their backs with a *rebozo*. [33] The soundtrack intermixes dialogues in indigenous languages with the weeping sounds of women and children. Suddenly, the camera takes the point of view of a child being carried on her mother's back. By using a tilted angle and subjective camera perspective, Weiss places the viewer in the position of the indigenous child. The viewer looks at the side of a building, and from this position—perhaps just like a child being carried on his/her mother's back—is unable to understand what she/he sees: the city becomes foreign, the space of the Other. The camera moves from a subjective position to an objective one, and at some point in the video, the women on the street become aware of Weiss' camera. They seem to throw things at Weiss and her camera. Like Sonia Andrade, Weiss was also interested in breaking the fourth wall. In *Somos Mujeres*, Weiss

did so by incorporating the women's responses to her camera. Shown at the February Biennale of Modern Art in Mexico City in 1978, *Somos Mujeres* was one of the first videos by Weiss where she began to formulate the utopic potential of video: namely, the medium's capacity to develop alternate televisual realities in which the subject (the camerawoman) and the object (the indigenous woman and her child) of representation could switch positions, mix with one another, and thus subvert the power relations in the matrix of representation. [34]

Weiss conceived each of her videos as an act of giving birth, and her camera as her daughter—her *escuincla* (from the Náhuatl word for daughter). The word *escuincla*, also from the Náhuatl word *itzcuintl* (a dog without hair, or a child) is commonly used in colloquial Mexican Spanish as a pejorative term to refer to an indigenous or dark-skinned female beggar, or to refer to any nuisance. As we have argued elsewhere, by conceptualizing her camera as her daughter, Weiss challenges normative female experiences by developing an incestuous coupling of herself, her camera, and the Other. [35] By using the video camera as a hybrid extension of her body and adopting television broadcasting as a conceptual model to reach audiences outside of the art world circuits, Weiss developed a unique approach to video.

Weiss, like Andrade, combined the predominant articulation of video art as a medium of self-knowledge with a concern for exploring video's relation to television broadcasting and the medium's aesthetic and technical qualities. [36] Through this approach, Weiss sought to undermine the separation between real experience and the reality structured by the medium of video. In naming her camera “escuincla” and allowing it to act as a prosthetic to extend the vision of her white, middle-class, female body, while also allowing the Other to see through it (via the use of subjective camera or feedback), Weiss gendered the process of *mestizaje* as female.

Weiss' approach was not free from contradictions. Her fusions of self, Other, and machine were at times patronizing and idealistic experiments. [37] Nonetheless, like Andrade's approach, Weiss' use of video did offer an alternative to dominant expressions of Latin American utopian impulses during the second half of the twentieth century. By blurring the division between the subject and object of representation, Weiss developed contradictory fusions of self and Other, and in so doing, Weiss feminized *indigenista* visual traditions by breaking down the barriers of biological determinism and fixed symbolic roles that once connected man to technology and woman to nature. [38] In much the same way as Andrade, Weiss provided alternative visions for Latin American women through the expansion of utopian televisual realities where the boundaries of race, class, gender, and ethnicity could be experienced and performed differently.

Among the affinities between Sonia Andrade and Pola Weiss and the parallel worlds they inhabited, this paper has discussed how both artists used video and the site of their bodies in hybridized, feminized, cannibalist experiments to subvert the masculine and authoritarian language of televisual images. These efforts speak to a common interest in undoing longstanding colonial, racial, gender, and class hierarchies present in Latin American societies.



## REFERENCES

1. Nelly Richard et al., *Masculine/Feminine: Practices of Difference(s)*, ed. Stanley Fish and Fredric Jameson (Durham, NC: Duke University Press, 2004), 21–28.
2. Gloria Anzaldúa, *Borderlands: The New Mestiza = La Frontera* (San Francisco: Spinsters/Aunt Lute, 1987); Chela Sandoval, "Mestizaje as Method: Feminists-of-Color Challenge the Canon" in *Living Chicana Theory*, ed. Carla Trujillo (Berkeley: Third Women Press, 1998), 352–370; and Chela Sandoval, *Methodology of the Oppressed* (Minnesota: University of Minnesota Press, 2000).
3. Chela Sandoval, "Mestizaje as Method," 354–355. See note 2.
4. Ana Louise Keating, ed. *The Gloria Anzaldúa Reader* (Durham: Duke University Press Books, 2009), 10.
5. Sandoval, "Mestizaje as Method," 359. See note 2.
6. Sandoval, *Methodology of the Oppressed*, 4. See note 2.
7. Donna Haraway, "A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century" in *The Cybercultures Reader*, ed. D. Haraway, D. Bell, and B. M. Kennedy (New York: Routledge, 2000), 296.
8. Haraway, "A Cyborg Manifesto," 291. See note 7.
9. Sandoval, *Methodology of the Oppressed*, 2–4.
10. "Only anthropophagy unites us. Socially. Economically. Philosophically." Oswald de Andrade as quoted by Leslie Bary, "Oswald de Andrade's Cannibal Manifesto," *Latin American Literary Review* 19, no. 38 (July–December 1991): 38.
11. Sonia Andrade, *Sem título*, 1975. Video, 8 min.
12. The law was proposed by the army general Artur da Costa e Silva, then president of Brazil. Elena Shtromberg, *Art Systems: Brazil and the 1970s* (United States: University of Texas Press, 2016), 44.
13. Sonia Andrade in conversation with the curator at the Centre Georges Pompidou in Paris, April 2, 2012. Accessed February 15, 2016. [http://www.dailymotion.com/video/xrnb3p\\_cinema-et-videos-sonia-andrade\\_creation](http://www.dailymotion.com/video/xrnb3p_cinema-et-videos-sonia-andrade_creation).
14. Tropicália is largely associated with music (Caetano Veloso, Gilberto Gil, Os Mutantes, Tom Zé, Gal Costa) but also encompasses cinema, theatre, poetry, and art. The movement gained strength in 1968 with the release of the album *Tropicália: ou Panis et Circencis* serving as a musical manifesto.
15. Shtromberg, *Art Systems*, 9. See note 12.
16. English translation of the Portuguese "Manifesto Antropófago," by Oswald de Andrade. Tupi is the popular generic name for one of Brazil's largest Indigenous peoples, also known for their cannibalistic rituals. Leslie Bary, "Oswald de Andrade's Cannibal Manifesto," 38. See note 10.
17. Shtromberg, *Art Systems*, 94. See note 12.
18. Shtromberg, *Art Systems*, 93. See note 12.
19. McLuhan, Marshall, *Understanding Media: The Extension of Man* (Massachusetts, MIT Press edition 1994), 312.
20. Nelly Richard, "Margins and Institutions: Performances of the Chilean *Avanzada*," in ed. Shtromberg, *Art Systems: Brazil and the 1970s* (United States: University of Texas Press, 2016).
21. José Vasconcelos, "The Cosmic Race: The Mission of the Iberoamerican Race," in *The Cosmic Race: A Bilingual Edition* trans. Didier T. Jaén (Baltimore and London: The Johns Hopkins University Press, 1997), 3.
22. José Vasconcelos, *The Cosmic Race*, x. See note 21.
23. Indigenismo is defined as a set of reforms and practices that attempted to integrate indigenous cultures in the development of a national narrative in order to construct a modern national identity. It was a process of internal colonization and expropriation, whereby the image of the Indian emerged as the source of mythical originality and the basis of a new mestizo national identity. Gabriela Aceves Sepúlveda, "Imagining the Cyborg in Náhuatl: Reading the Videos of Pola Weiss through Haraway's Manifesto for Cyborgs," in *PLATFORM: Journal of Media & Communication* 6, no. 2 (2015), 46–60.
24. For a discussion on the concept of "mestizo aesthetics" as it relates to the Mexican School of Muralism see Ana Maria Alonso, "Conforming Discontinuity: Mestizaje, Hybridity, and the Aesthetics of Mexican Nationalism," in *Cultural Anthropology* 19, no. 4 (2004), 463. For a discussion on how photography and cinema visualized and popularized indigenismo, Sepúlveda, "Imagining the Cyborg in Náhuatl," 54. See note 23.
25. Sepúlveda, "Imagining the Cyborg in Náhuatl," 48. See note 23.
26. These institutions included the state through the purchase of the television channel, Canal 13 (1972); Televisa (1973); and the Universidad Nacional Autónoma de México (UNAM) through TV UNAM, a closed network television production station that began to broadcast on an open network in association with Televisa in 1976. See Sepúlveda, "Imagining the Cyborg in Náhuatl," 48. See note 23.
27. Sepúlveda, "Imagining the Cyborg in Náhuatl," 48–49. See note 23.
28. For more details on Weiss' conception of artTV see Gabriela Aceves Sepúlveda, "Imagining the Cyborg in Náhuatl," 53.
29. Pola Weiss, "La TV te ve" in *Artes Visuales. Revista Trimestral del Museo de Arte Moderno*, 17, Spring (1978), 19–20.
30. Juan Garibay Mora, "El Video Arte, Superación de la Caja Idiota para los seres cuyo pensamiento es visual," in *Excelsior* section E, 1, (August 14, 1982).
31. Sepúlveda, "Imagining the Cyborg in Náhuatl," 46–60. See note 23.
32. Midori Yoshimoto, *Into Performance: Japanese Women Artists in New York* (New York: Rutgers University Press, 2005), 187.
33. Pola Weiss, *Somos Mujeres*. 1977. Video, 7 minutes 15 seconds.
34. Sepúlveda, "Imagining the Cyborg in Náhuatl," 46–60. See note 23.
35. Sepúlveda, "Imagining the Cyborg in Náhuatl," 46–60. See note 23.
36. Sepúlveda, "Imagining the Cyborg in Náhuatl," 46. See note 23.
37. Sepúlveda, "Imagining the Cyborg in Náhuatl," 47. See note 23.
38. Sepúlveda, "Imagining the Cyborg in Náhuatl," 57. See note 23.

## BIOS

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TRAVEL  
NOTES  
ON

# MESTIZAJE AND TECHNOSCIENCE

On the dynamics of *mestizaje* and technoscience in  
contemporary art and design practices in Latin America

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**KEYWORDS: MESTIZAJE,  
TECHNOSCIENCE,  
ART, SCIENCE,  
TECHNOLOGY, MEXICO,  
LABORATORIO ARTE  
ALAMEDA, KNOWLEDGE,  
OBSOLESCENCE,  
INNOVATION**

The following text is a report on *mestizaje* and *technoscience*, written during a series of trips that I propose as field trips. I will try to track down, while in transit, some of the singular dynamics of *mestizaje* as an active and problematic category—not an intersection of pure races, but one of different cultures that produces a new culture—and their relation to technoscience. Meanwhile, technoscience will be seen not only as the intersection between practices, but also as a change in decision-making and the organization of scientific knowledge. This report is being written as I participate in specific events—all related to the relationships between art, science, and technology—taking place from the beginning of February to the end of March 2016 in various cities: the closing ceremony of the International Year of Light 2015 at Chichén Itzá in Merida; the meeting of the grant recipients of the Mexican Ministry of Culture's emerging artists program at the Ex-Hacienda de Chautla in Puebla; the symposium on *Cultivos*, an exhibition by Gilberto Esparza at Laboratorio Arte Alameda in Mexico City; and Common(s) Sense City Symposium at Taubman College, University of Michigan Detroit.

A trip of four stops, undertaken with a short bibliography in my suitcase, and the questions proposed in this edition's thesis:

How is technology embodied, transformed, assimilated, and appropriated in Latin American art and design? What are the characteristic markers of technoscience in Latin America? What are the roles of Latin American traditions and scientific knowledge in

the production of digital media art, and what are the influences of Western scientific rationale and technical expertise? And, going further, how is Latin American technology-based art influencing artistic production in the West?

Three considerations need to be taken into account before the departure. First, this brief reflection on a major subject through the former set of questions needs to be localized, and any attempt at being exhaustive or generalizing Latin America as a whole needs to be avoided. Second, it shall resist using *mestizaje* as an unproblematic category. The third consideration is about the emergence of technoscience and its relationship with an epistemic turn in art. The origin of technoscience is considered here in relation to philosopher and mathematician Javier Echeverría from Spain. He started a revolution that began in the state and the military, and then spread to the private business sector, resulting in the need for government regulation and policy—basically, the need for the integration of corporations and the military in scientific committees. [1]

Art, science, and technology have been related for a long time, as media theory and archaeology have consistently shown in many different ways. From the Deep South in Latin America, we can trace many key figures fueling this conversation. Among the most important may be biologist Humberto Maturana and neuro-philosopher Francisco Varela, two scientists who, under any circumstance, could be regarded as positivists or reductionists, and two intellectuals who have influenced the ideas of many in the so-called West. From Mexico's contribution to cybernetics (e.g., the work of physiologist Arturo Rosenblueth and mathematician Norbert Wiener), to contributions from Chilean Fernando Flores, to the present science of the control of machines and humans—these are just a few examples of Latin America's hiatus that is still not well-represented in media histories. On the other hand, what Jorge Luis Borges called “reasoned

imagination,” referring to the genre known in Western literature as science fiction, might be quite close to certain intersections between art, science, and technology today. Long before that, we can trace the Mapuches who sent code signs by shaking trees over vast amounts of territory, and Mayan design. More recently, we can cite conceptual artistic approaches to scientific and technological issues, as in Brazil's concrete and neo-concrete movements. Or we can look to avant-garde proposals like Vicente Huidobro's novel-film *Cagliostro* (1934) or the *Estridentismo* movement in Mexico.

Today's art is related to knowledge in particular forms: media scholar Jens Hauser has proposed an “epistemic turn” in art, meaning a kind of art not presenting knowledge but showing how knowledge is being produced through an aesthetic object. [2] The emergence of technoscience has posed specific questions and problems for artists dealing with scientific or technological subjects. What I would like to trace here is precisely those problematics through my reflection on particular events and projects.

## STOP 01 02/06/16 MERIDA, YUCATAN

### CLOSING CEREMONY OF THE INTERNATIONAL YEAR OF LIGHT AND LIGHT-BASED TECHNOLOGIES (IYL), ORGANIZED BY UNESCO

Merida is the first stop. One event after another takes place, filled with moments in which both concepts (*mestizaje* and technoscience) emerge and take singular forms in art projects, symposia, and everyday experiences. In this trip to Merida *mestizaje* and technoscience were manifested through this region's ancient culture and its post-colonial present, as well as in the diverse approaches to science and technoscience present at the Closing Ceremony of the IYL. This was an event devoted to raising awareness of the many ways in which light,

optics, and photonics impact our lives in areas such as energy, education, climate change, and health. There was a lecture by Nobel Prize winner John Mather, who emphasized how astronomers look back in time by using light, the discovery of the expansion of the universe with a telescope, and the hope of finding life elsewhere by using light at many wavelengths. The event also addressed practical topics, such as harvesting solar energy and the ecological need to preserve dark skies.

With Chichén Itzá's main temple of Kukulcán right in front of us, one of Mexico's leading theoretical astrophysicists Dr. Jesús Galindo displayed the complex and precise calculations that Mayan architects had executed in the design of the magnificent device we were looking at. Using visualization software, he represented the amazing geometry made by the Maya to achieve these structures' orientation, the systematic observation of the main objects in the sky (the sun, the moon, and Venus), and the prediction of astronomical phenomena such as eclipses. A culture that apparently evolved in isolation from other centers of civilization, the Maya developed a sophisticated and complex writing system. Between the years 200 and 900 AD, they created a highly accurate variant of the calendar and their vigesimal number system included zero. Walking around some of the buildings, one can experience meticulously calculated acoustic effects—our clapping is responded to by an electronic-like sound, a sweeping echo that people say resembles the Quetzal bird's song. These temples can be seen as instruments with many different sensorial and responsive capabilities, and they are starting to be studied in the field of archaeoacoustics. [3]

There is a topic that is never missing in a conversation about the city of Mérida—namely, the “rise and fall” of the “green gold” industry, which refers to *henequén*, a type of agave (a plant species native to southern Mexico). This was an industry that, at the beginning of the twentieth century, was said to have

generated more millionaires per capita than any other place on the planet. They used to distribute 90% of the fiber ropes consumed globally at the time. Haciendas that used to produce *henequén* are mostly abandoned now, and some of them are tourist sites. After the Mexican revolution in 1910, and because of the rise of the synthetic fibers industry, demand for *henequén* ropes abruptly stopped. For a detailed study on the subject I consult *Yucatan, Economy and Industry*. [4]

Among the publications distributed at the IYL 2015 closing event, I found a special report on Mexico in the *Physics World* journal. An interview with the director of the National Science and Technology Council (CONACYT), Mexico's scientific research funding agency, calls my attention. [5] Dr. Enrique Cabrero answers questions related to scientific research and innovation. He discusses in which areas Mexico excels, how good Mexico is at innovation, and what the number-one challenge is for science in Mexico. In Dr. Cabrero's words, there is a very strong physics community and a good tradition in astronomy. We are also better now in biotechnology and doing well in nanoscience. One of our biggest problems, he answers, is that Mexico doesn't have good links between industry, academia, and government, so the resulting new knowledge is not transferred to the industry. An important remark made by Cabrero on the biggest challenge for research, and quite relevant to this inquiry, is that society doesn't yet value scientific knowledge. He states that surveys suggest that 60% of Mexicans believe more in magic than in science; they think scientists are weird, and so it is necessary to convince citizens, entrepreneurs, and politicians of the importance of investment in science. Historically, he remarks, society felt science was good, but it was seen as a decorative window-dressing like art or music.

One of the texts traveling with me is *Elogio del mestizaje: Historia, lenguaje y ciencia* (Praise for

mestizaje: history, language and science). [6] Physicist and historian José Manuel Sánchez Ron was elected as candidate and selected as a member of the Royal Academy of Spain. In this text dedicated to the members of the Academy, he addresses language as a vehicle of life and asks: how could we understand the enormous differences between the first exemplars of our species and ourselves without taking into account science and technology, which affects us “to the marrow of the bones”? In his praise for mestizaje he states that he is not referring to its first meaning in the Spanish dictionary—the crossing of two races—an update for which he would be partly responsible. Such a definition is a dangerous notion, he states, if we are to apply it to our species because there are no “pure” races but rather, species. Even if we try to raise genetic frontiers they would be imaginary frontiers that are based on a desire for differentiation, not on scientific knowledge. If we are to continue using the term “race” when we talk about humans, it should be in a cultural sense, not in a biological one. The text continues with a dissertation on disciplinary mestizaje in science, ranging from the tragic vicissitudes of Aristotle’s writings to nonlinear sciences.

At the Light in the Arts panel of the IYL 2015 closing event, I talked about a set of projects dealing with light at Laboratorio Arte Alameda. I realize that, surprisingly, two of them are closely related to the questions I try to trace in this report. I start with a project that was inspired precisely by Chichén Itzá: *Solar*, by Rejane Cantoni and Leonardo Crescenti, installed at Laboratorio Arte Alameda in 2012. This immersive and interactive work consists of an arc and a robotic light that simulates the trajectories of the sun. Participants supply the coordinates of a city and a specific moment in time. As a response, they receive the direction, the intensity, and the sensation of the heat and light that the sun radiated at that specific time-space. The artists visited the same archaeological site where the closing ceremony

took place when they came to Mexico to receive the *Transitio\_MX* first prize in 2009. I remember a great conversation with them about this archaeological site—on its sound responsiveness that resembled the almost extinct chant of the Quetzal bird, and the very subtle mix of formal and aesthetic elements that gives the Kukulcán temple its status as an observatory and ceremonial site. How far in time and, to some extent, how close is this ancient project from current intersections of art, science, and technology?

The second project I presented on the panel was Erick Meyenberg’s *Étude taxonomique et comparative entre les castes de la Nouvelle Espagne et celles du Mexique contemporain* (Taxonomic and comparative study between the castes of the reign of the New Spain and that of Contemporary Mexico). This is a light installation consisting of twenty columns formed by 205 polycarbonate rings with LEDs, installed at Laboratorio Arte Alameda in 2010 as part of the exhibition *Revolucion(es)*, curated by historians Esther Acevedo and Rosa Casanova. The piece was commissioned for the exhibition, which was organized to reflect on the Mexican Revolution after 100 years. The work referred directly to mestizaje. It was a critique of the anthropological and scientific views on the subject of post-revolutionary approaches, and of the present “decoding” of the so-called Mexican genome promoted by the government around the time of the Revolution’s one hundred anniversary. DNA was visualized through red, green, and blue LEDs representing Black, Indian, and European bloods. Meyenberg delved into the ideas of Manuel Gamio, considered the “father of anthropology” in Mexico. He discussed Gamio’s notion of utopian mestizaje, which would ultimately give rise to a unique and authentic national identity. As Meyenberg says in an interview conducted for the exhibition catalog, Manuel Gamio was a key figure in the construction of the institutions aimed to regulate the relationship between the state and indigenous communities. Some of Gamio’s texts were

presented by Meyenberg in a documentation area, along with sketches and reproductions of paintings representing the *castas* or social-racial strata system that was used as a kind of taxonomy to reflect the process of mestizaje in the New World. [7]

By this time, both categories—mestizaje and technoscience—have expanded in many different directions.

## STOP 02 17/02/16

### MEXICO CITY

#### SYMPOSIUM ABOUT CULTIVOS, AN EXHIBITION BY GILBERTO ESPARZA AT LABORATORIO ARTE ALAMEDA

Cultivos is close to its last days at Laboratorio Arte Alameda. This is the exhibition's second venue after Espacio Fundación Telefónica in Lima, Peru. The third session of the seminar organized around the exhibition is focused on the disciplinary intersections generated by Esparza's projects, especially by the work entitled *Autophotosynthetic Plants*, which won the Ars Electronica Golden Nica in 2015. Present at the table, in addition to the artists, are representatives of two disciplines: philosophy of technology (Liliana Quintero) and synthetic biology (Laura Espinosa-Asuar).

*Autophotosynthetic Plants* comprises a community of living organisms (protozoa, crustaceans, microalgae, and aquatic plants) that achieve homeostatic equilibrium through the production of photosynthesis in the absence of the sun or any external light. The work uses sewage samples from the main sites of the water supply system in the city where it is installed. It generates energy through a set of modular, microbial fuel cells that develop colonies of bacteria whose metabolism produces electricity released as bursts of luminous energy. I think it is a work that puts the audience into the role of both the inquirer and the subject of study.

In a previous session at this symposium, media scholar and curator Jens Hauser talked about "epistemic turns" and how he considers the present to be one. This is a hypothesis I would like to trust and try to use throughout this article. I would like to turn to his answer to the question about why critics have been so conceptually loose in their approach to "contemporary media art" or any other named category used to describe the intersections between art, science, and technology. Hauser explained that critical theory has failed to include the Kantian idea of the "mathematical sublime" in its approaches to contemporary media art. He did not say that it is not happening, but that it is not happening enough. And I remember a critique of Rafael Lozano-Hemmer's exhibition at the National Autonomous University of Mexico's (UNAM) contemporary art museum (MUAC) that was not able to explain why it is important to pose artistic questions about sophisticated technology as well as "low" technology. Thinking through old, new, low, high, conceptual, or expressive machines is important.

One of the researchers at the table, biologist Laura Espinosa-Asuar, is part of a team at UNAM's Institute of Ecology, where she is studying micro-organism communities in the Cuatro Ciénegas Basin, an important ecological reserve in northeastern Mexico. This is a unique site, considered to be a natural laboratory because of the presence of seventy endemic species, an abundance of living stromatolites (solid structures created by single-celled microbes called cyanobacteria, which are blue-green algae), and other microbial communities. *Autophotosynthetic Plants* is relevant to Espinosa-Asuar's research: its importance is considered in terms of the type of information it generates and its capacity to trigger conversations about important relations. The artist and the biologist are currently collaborating on a research paper.

Another participant, Liliana Quintero, was a graduate and postgraduate student of philosophy at UNAM, and coordinator at the research lab at Centro Multimedia, National Center for the Arts in Mexico City. It was precisely Liliana who addressed Javier Echeverría's interpretation of the term "technoscience," and started proposing relationships with the forms of knowledge present in Gilberto Esparza's work. I remember a talk by the Spanish philosopher at Centro Multimedia many years ago, in which he proposed an axiology or set of values developed for technoscientific industries to operate under an ethics directed towards decreasing their damage to the biosphere. Speakers at the symposium coincided with each other at specific points during the conversation. Environmental and philosophical issues produce intersections at ethical questions. This is one of the singular moments when the kind of experiences we name "interdisciplinary" emerges.

### STOP 03

11/02/16

#### EX-HACIENDA DE CHAUTLA, PUEBLA

#### MEETING OF THE GRANT RECIPIENTS OF THE PROGRAM DEVOTED TO EMERGING ARTISTS BY MEXICO'S FONDO NACIONAL PARA LA CULTURA Y LAS ARTES (FONCA, NATIONAL FUND FOR CULTURE AND THE ARTS)

FONCA has been active since 1989, and its program for emerging artists began supporting art and technology research and production just a few years after its creation. Twenty generations ago I took part in this program with a project on virtual reality, which consisted of a series of avatars to wear in communities on the Internet. Among the changes I perceive from then to now is the way digital and other technologies have permeated across disciplines. And if there was something that we could call "multimedia art"—the term used in the program to differentiate practices focused on science and

technology—it has also been in close dialogue and intersection with many forms of knowledge. It is now part of the contemporary arts scene as a whole and seems to have also carried its own specificity along the way.

At the interdisciplinary meeting that gathers participants from all areas, I find out that there is a poet working on the subject and media of emojis in quite an interesting way. Another participant presents a narrative project dealing with scientific topics, reminding me of a long tradition that was not represented until recently. Electronic and contemporary music are also better represented now. I don't think people ask if one can make art with a computer anymore. We put lots of time into that conversation twenty years ago, when the Greek concept of *tejne*, meaning art and technology, was my "card up my sleeve."

Many forms of *mestizaje* occur at the general presentation. A non-native speaker of Náhuatl presents a fragment of a narrative work written in this indigenous language. I like that this happens outside the group formed by writers of indigenous communities.

Throughout the sessions of the specific group I am co-tutoring with Hugo Solís, a Mexican artist and media art professor. Questions about art and its intersection with science and technology are constantly referred to. Projects are quite diverse in several senses—the members of the group have been trained in schools of music, visual arts, music production, media arts, and design. Although none of them are into fields like computer science or engineering, one of the first ideas upon which the group agrees is the claim for computational creativity. Among their influences and references I find many musicians and sound artists: Pauline Oliveros (US), Alvin Lucier (US), Steve Connor (UK), Ariel Guzik (Mexico), Llorenç Barber (Spain), Lev Manovich (USSR, US). Our key concepts for the next three-day

schedule are: database as symbolic culture, creative participation, listening and reading, words as matter, noise in text, sound sculpture, biological time, automation, and historic sound objects.

## STOP 04

11/03/16

### ANN ARBOR AND DETROIT

#### "COMMON(S) SENSE CITY SYMPOSIUM AND DETROIT CONVERSATIONS," AT TAUBMAN COLLEGE, UNIVERSITY OF MICHIGAN

This symposium was organized as part of the Michigan/Mellon Project on Egalitarianism and the Metropolis, a four-and-a-half-year academic and research initiative focused on architecture, urbanism, and humanities research in Detroit, Mexico City, and Rio de Janeiro. Laboratorio Arte Alameda will host an exhibition presenting the results of the research in 2017. One of the project's initiatives is the Architecture Prep. I visit their ground-level venue with a big window in midtown Detroit. AgitProp Activator is a workshop now happening at the program offered to high school students who are planning to study architecture and/or urban design. On top of the tables one can see models of the proposals for urban design that the students had just made as the result of the analysis of two social movements: Black Lives Matter and Occupy Wall Street. They represent aspects of these social movements and integrate this analysis into the design of modular pavilions that will be located in the streets of Detroit.

The symposium gathered architects, urban designers, artists, theorists, lawyers, and members of many other disciplines from Detroit, Mexico, and Rio de Janeiro. The project aims to allow design theory and practice to inform, and be informed by, questions about social justice, social movements, and transformative creative art movements. The two-day symposium was complemented by a series

of tours around Detroit, a set of conversations among specialists including reports on urban design in the three cities, and visits to projects focusing on the recovery of the city through different dynamics involving artistic practice.

On our way back to the hotel I recognized the name of a street in one of John Dos Passos' contributions to *The New Republic* journal in 1932: the article is entitled "Detroit, City of Leisure," and the street is Woodward Avenue. This is an important historic site in the United States. It is the same place where Dr. Martin Luther King gave his famous speech, "I Have a Dream." As Dos Passos wrote, it is a street "of dusty vacancy, [of] unused buildings," and it is one of the streets onto which "several thousand workless men" were turned out "all over the vast unfinished city." [8] At the entrance of the hotel there is an electric guitar exhibited like those one can see in rock cafes around the world, only this one is made out of wood reclaimed from abandoned or collapsed Detroit buildings. [9]

Detroit has been experiencing a population decline that began more than eighty years ago, according to Francesca Berardi, author of *Detour in Detroit*, an interesting publication we found in the Museum of Contemporary Art Detroit. [10] In an interview, Dan Pitera, an urbanist working in Detroit Future City, argues that to understand population decline one must understand the practices of redlining and blockbusting, which have had a great impact on racial segregation. Pitera says that in 1935 the Home Owners' Loan Corporation was asked to make "residential security maps" based on assumptions like racial homogeneity, thus defining inner city neighborhoods as insecure and suburban neighborhoods as secure. As a result, the housing values in inner cities dropped. Suburban neighborhoods were mostly white, and covenants were made in neighborhoods that were designed to keep them racially homogenous. Consequently, people were rejected



for home loans, insurance, etc., without taking into account an individual's qualifications and credit-worthiness. Furthermore, blockbusting was the practice of people going to the neighborhoods that were deemed insecure and convincing the white residents to leave before "it was too late."

The Detroit Institute of Arts, site of Diego Rivera's enormous fresco, *Detroit Industry* (1932-33), commissioned by Henry Ford, still reigns on Woodward Street. There is something else we share with this avenue: the electric streetcars that were part of the city's public transportation network (which was dismantled in 1955 by the General Motors Company) were sold to Mexico City. They are building new streetcars right now, and it will take three years to reconnect neighborhoods with public transportation. One can feel the scars that this old transplant left on the city. I can remember the 1950s streetcars still running in Mexico until not too long ago.

At the symposium, the group of Mexican participants included Laura Janka (urban designer and former director of Chapultepec park), Hector Zamora (artist), Arturo Ortiz (architect), and myself. It also included artists Jaki Irvine (originally from Scotland) and Melanie Smith (born in England), Mexico's representative at the 2011 Venice Biennial.

In my suitcase, and part of the brief book list for this step of the journey, is Melanie Smith's recent book on her film *Fordlandia* (2014), which addresses Ford's failed attempt to establish an industrial settlement for producing natural latex in Brazil's Amazon region in the 1920s. [11] Ford's English suppliers of latex had previously transplanted *Hevea brasiliensis* to South-east Asia, where it could grow without the threat of the Amazon's plagues. Very much as in Merida, the emergence of synthetic materials produced out of oil made natural latex practically obsolete. *Fordlandia* experienced a fast decline and was sold to the Brazilian government in 1945. Due to the remoteness

of the site, it was never used again and was rapidly reclaimed by nature, becoming the ruin in the jungle it is today. I brought with me another book by John Dos Passos: *The Big Money*, part of the trilogy in which Detroit is one of the cities portrayed. [12] There is a character in this novel who had a major influence on the history of *Fordlandia*—Frederick Winslow Taylor, a mechanical engineer from Pennsylvania who developed and wrote *The Principles of Scientific Management*, the theoretical machine aimed at administering workers' movements in the work-flow to enhance productivity. [13] In the novel, Taylor believes he has found that every improvement in the factory's system would provoke the aggressive opposition of the workers. He used to faint since he was in high school from being overworked. He was close to losing his eyesight from fatigue, and he died after physical prostration in 1915. Perhaps the reasons why he couldn't calculate nature or society's opposition to *Fordlandia* were the same reasons behind the constant collapses in Detroit's industry, and many others.

Knowledge seems to have conducted the twentieth century's destiny, and our present is its product. Scientific and technical knowledge not only need to be criticized, but dealt with hands-on. The many ways in which art is dealing with such important phenomena, as well as *mestizaje*, are worth paying attention to. In *Alien Theory: The Decline of Materialism in the Name of Matter*, philosopher Ray Brassiere identified a "fundamentally reactionary tenor of contemporary philosophy in its general critique of science as reductive and subjected to fallibility." [14] Among other works, Bruno Latour also wrote on this subject in the essay, "Why Has Critique Run Out of Steam?" and the book *We Have Never Been Modern*. [15] There seems to be more need to think about technoscience and its consequences than is currently taking place. Artists and theorists have long been responding to the former provocations, along with many others engaging in cross-disciplinary endeavors.



## REFERENCES AND NOTES

1. Javier Echeverría, "La revolución tecnocientífica," *Confinos de relaciones internacionales y ciencia política* 2 (2005): 9, accessed February 10, 2016, <http://confinos.mty.itesm.mx/articulos2/EcheverriaJ.pdf>.
2. "This is a phenomenon of our time: after the linguistic turn, the pictorial turn, and the performative turn, we have arrived now at an epistemic or epistemological turn, which basically deals with and analyzes the manner in which knowledge and objects are being presented. So this art is not about presenting knowledge, but about questioning and showing how knowledge is being produced, through an aesthetic object. In my opinion, this kind of art is oriented towards the representation of its production.," Daniela Silvestrin, "Dialogues on 'Bioart' #1: A Conversation with Jens Hauser," *Digicult*, accessed February 7, 2016, <http://www.digicult.it/news/dialogues-on-bioart-1-a-conversation-with-jens-hauser/>.
3. Clara Eugenia Garza Hume, et al., "Arqueoacústica Maya. La necesidad del estudio sistemático de efectos acústicos en sitios arqueológicos." *Estudios Cultura Maya* no. 32 (2009): 411, accessed February 27 2016, doi: <http://dx.doi.org/10.19130/iifl.ecm.2008.32.68>
4. Canto Sáenz, Rodolfo, "From Henequén to Maquiladoras," in *Yucatan Economy and Industry 1984-2001* (Toluca: Instituto Nacional de Administración Pública, 2002), 51.
5. Martin Durrani, "The Political Vision Interview: Enrique Cabrero Mendoza," in the *Special Report Mexico: Physics for culture and development*, *Physics World*, (2015):16.
6. José Manuel Sánchez Ron, *Elogio del mestizaje: Historia, lenguaje y ciencia* (Madrid: Real Academia Española, 2003), 22. [http://www.rae.es/sites/default/files/Discurso\\_Ingreso\\_Jose\\_Manuel\\_Sanchez\\_Ron.pdf](http://www.rae.es/sites/default/files/Discurso_Ingreso_Jose_Manuel_Sanchez_Ron.pdf)
7. Esther Acevedo and Rosa Casanova, "Entrevista con Erick Meyenberg: Estudio del artista, 27 de julio 2010," in *Revolucion(es)*, ed. Esther Acevedo and Rosa Casanova (Mexico D.F.: Instituto Nacional de Bellas Artes y Literatura, 2010), 101-107.
8. John Dos Passos, "Detroit: City of Leisure," *The New Republic*, July 27, 1932.
9. The official website is <http://wallacedetroitguitars.com/>.
10. Francesca Berardi, "It's Like a Caterpillar Becoming a Butterfly: An Inspiring Lunch With the Urbanist Dan Pitera," in *Detour in Detroit*, ed. Francesca Berardi (Milano: Humboldt Books, 2015), 3-11.
11. Melanie Smith, "Fordlandia," *Editorial RM* (2014), 15.
12. John Dos Passos, *The Big Money* (New York: First Mariner Books, 2000), 15.
13. Fredrik Winslow Taylor, *The Principles of Scientific Management* (New York, London: Harper & Brothers, 1911).
14. Ray Brassiere, *Alien Theory: The Decline of Materialism in the Name of Matter* (Coventry: University of Warwick, 2001). [http://wrap.warwick.ac.uk/4034/1/WRAP\\_THESIS\\_Brassier\\_2001.pdf](http://wrap.warwick.ac.uk/4034/1/WRAP_THESIS_Brassier_2001.pdf).
17. Bruno Latour, "Why has Critique Run Out of Steam?: From Matters of Fact to Matters of Concern," *Critical Inquiry*, vol. 30, no. 2 (2004): 25-248. <http://www.bruno-latour.fr/>. Republished in: *Harper's Magazine*, (April 2004): 15-20. Republication reprinted in: Bill Brown *Things*, ed. Bill Brown (Chicago: University of Chicago Press, 2004), 151-174; Bruno Latour, *We Have Never Been Modern*, (Cambridge: Harvard University Press, 1993).

## BIO

Tania Aedo is a cultural producer with a long trajectory in the development of projects at the intersection of art, science, and technology. Since 2007 she has been the director of Laboratorio Arte Alameda, and she is former director of Centro Multimedia at the National Center for the Arts in Mexico. She studied Visual Arts at the National Visual Art School (UNAM), where she was given the Award for Artistic Creation; and Artistic Education at Escuela Superior de Artes de Yucatán (ESAY). She attended the Museum Management Program organized by Instituto de Liderazgo en Museos (ILM) and the Getty Leadership Institute, and has been honored with grants like the Media Arts Fellowship from the foundations of Rockefeller, Ford, and MacArthur. She has taken part in the Creative Residencies Program at the Banff Center for the Arts funded by the Fondo Nacional para la Cultura y las Artes (FONCA), and has received additional support from several programs by the same institution. She has been involved as author and/or editor in the publication of books such as *Techkné 1.0* and *Interdiscipline School and Art* (CONACULTA, Mexico), *ARTECHMEDIA* (Madrid, España), *Estado de situación* (Buenos Aires, Argentina), *Five Variations of Phonic Circumstances and a Pause* (CONACULTA, Mexico), *SEFT 1 Sonda de exploración ferroviaria tripulada* (Mexico, Tierra Adentro). She has also developed curatorial projects such as *Surrounded*, at the School of Media and Design at the Nanyang Technological University in Singapore.

# OUROBORIC perception and the EFFECTS OF enactive affective systems of the NATURALIZATION technologies

Dr. Diana Domingues, LART - Laboratory of Research in Art and TechnoScience, Biomedical Engineering Graduate Program - FGA Gama/Graduate Program in Health Sciences and Technology, University of Brasília FCE/UnB, University of Brasília - CNPq/CAPES, Brasília, Brazil

*When we feared that new technologies could take us apart from our origins and separate us from our past - and this remains possible - Diana Domingues shows us the opposite, that they are not forcefully incompatible with the deepest forms of our imagination. A new paradoxical hybridization is still there, in the work, between body and calculation, between trance and algorithm. [1]*

## DAILY RITUALS AND MIXED REALITY: THE BIOCYBRID BODY AND THE NATURALIZATION OF TECHNOLOGIES

I have always taken into account the human factor when investigating interactive technologies in their potential to transform ways of living. How can we understand types, levels and intensities of changes in post-biological, post-human, neo-biological, trans-human life installed by technologies? At the end of the 20th century, when interactive technologies - and mainly the inclusion of the WWW - started to invade and feed the creative minds of artists in the Media Art scenario, I had already anticipated:

*Without intending to be taken for a visionary I dare to forecast that in the next couple of years, people will normally use wireless interfaces, and matter-of-factly will be connected in all microtimes of their lives. Existence will become a cybrid existence during the twenty four hours of life time. People will increasingly have interfaces and will be rather TV-like, to use an analogy to the contemporary technological and the society of the spectacle. Symbiotic technologies will be facilitated as permanent prostheses and they will be attached on us and into our bodies and thus we will be reinventing our lives and the ultimate nature of our species. [2]*

Nowadays by the effects of mobile technologies as calm and transparent interfaces installed "in the periphery," as proposed by Mark Weiser's ubiquitous computing, [3] in the post-desktop era, the computer is almost invisible and has disappeared in the hybrid world. Notwithstanding, technologies have gained biological tasks and are increasingly installed in our habitat. I believe in the naturalization of technologies and how they are enhancing the humanization technologies scenario. HCI technologies, with their devices and systems, take part in our organisms and work as part of our nature by expanding our sensorium as living systems in our landscapes and in the social engine. [4]

During Afro-Brazilian rituals, entities such as Ogum, Oxum and Iemanjá, who are called 'guides' or spirits are incorporated by the participants, who are in medi-unic states. These guides provide their own identities and expand our potentials to act as human beings. In a similar way, we can experience human altered identities during social, cognitive and emotional behaviors shared with the responsive environments of social platforms, mixed reality, or other technologies. We are in enaction, reaffirming the ecological perception with the environment, and the mutual influences exchanged with the invisible data modify our perception and cognition. In the case of the recent mobile technology, the interfaced body feels and acts by sharing qualities that come from the connectivity of the synthetic vision of cameras, satellites, physiological sensors, Bluetooth, tags, codes, wireless devices, GPS, or other technological components that transmit and exchange data, and co-locate us in virtual and physical worlds, thus transforming us into biocybrid humans. All those technologies provide us with altered limits of the human condition.

The enactive condition is referred in the theories of embodied cognition. It is about the interdependence between the organism and its environment, and their mutual, reciprocal exchanges, bringing the idea of autopoietic and emergent phenomena. In the relation with *mestizaje*, it gave me the inspirational figure of *ouroboros* to make visible the seamless condition lived by the interface of body and technologies. When compared to a ritual, it implies the logic of

participation, tribal logic, collaborative actions, spirit of communion, of object-taboos, similar to that logic implicit in the offerings of religions: offering and receiving, sharing and attempting to get to invisible forces. Technological apparatus and artificial systems empower artists' exploration of how technologies are changing our world perception.

### FROM MEDIA ART TO ART AND TECHNOSCIENCE

Since the beginning of my career I have proposed environments for a strong experiential dimension in interactive installations and immersion in VR Caves, requiring software development and specific hardware. I have always been an artist-engineer of communication interested in developing a hermeneutic and metaphorical proposal for those systems.

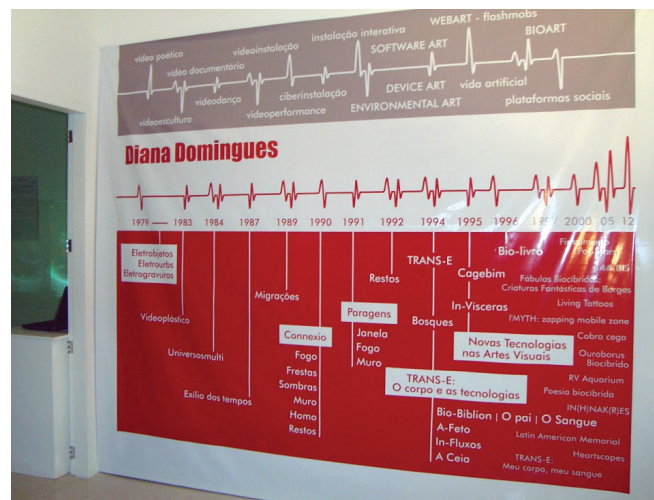


Fig. 1. Timeline From Multimedia. *Video Art 1970s to Art and TechnoScience*, 2015. Brazil. © Diana Domingues/CNPq.

What is my role as an artist-engineer? The crucial point is to think the relation between art, life, and technologies. What esthetical qualities will I explore with the kind of systems being proposed? What behaviors will I create for an expanded sensorium? What kind of social relationships can people share in a certain environment? What kind of post-biological nature am I generating? Can I visualize physical phenomena such as water pollution, climate change, dengue proliferation, narratives of a diabetic body? Consequently, my task is to decide on the system design following the interface conception and the embedded systems' dynamics in levels of unpredictability originated by concrete experiences to the coupled body and its enactions with the environment. Every technology embeds different esthetical qualities, and supplies specific responses. [5] Ted Kruger highlights that perception is a laboratory phenomenon because we create the kind of perception following the qualities of the device output. This kind of artwork is managed by an enactive system, related to complex theories about perception and cognition, that goes back to Gibson's ecological perception on human/environment relationships. [6] Similarly, I propose the ouroboric perception to emphasize the Latin American mythological figure of the serpent that eats its own tail in a constant autopoietic feedback to the ecoscosmos. In Art and TechnoScience, I amplify the "mestizaje" theme not only as hybrid realities, but also connecting biocybrid systems (bio+cyber+hybrid) with epistemology and methodologies related to the coupled body and the autopoiesis of complex systems by enactive affective systems. This is to say that I have embraced the context and concept of enactive affective systems as biological enactions during embodiments that include the physiological data+cyber data+hybrid environment intertwined with mutual exchanges. The continuum and symbiotic zone between body and flesh –cyberspace and data– and the hybrid properties of the physical world are the themes that generate a biocybrid zone.

Considering my discussions from the 1990s, now seen through the lens of "mestizaje" and decolonization, it seems clear that for over 20 years I have been discussing artworks' interactions and the use of interfaces in rituals. In art we have the concepts of support and surface. Interactive art enhances the sensorial experience by the principle of feedback provided by the interfaces and the dialogue between body and environment. It is the art of experience, which is no longer the restricted visual, retinal art, but now the entire body is involved. Interfaces and body actions go back to the tradition of body paintings, tattoos, masks, feathers, maracas, whistles, just as in rituals, which imply communication and collaboration. The body is invited to act, dance, breathe, drink in order to participate in the ceremony that is performed to exchange unexpected sensations and meaning in dialogues with the ecosystem.

[7] When interacting with technologies, we are closer to primitive societies. An example of this (see images 4 and 5) is what happens during rituals, when natives dialogue with the powers of the cosmos. They paint their bodies and dance to invoke animals, assume animal identities, call for rain, for plants to grow etc., for the health and well-being of the tribe. I propose that the connected body accomplishes rituals in biocybrid zones by manipulating data, and that its unfolding during flows of feedback, causes the body to be affected and, in turn, affects the environment. Similar to the serpent in a permanent feedback, the enactive corporeal condition expands human actions in zones that blend biological signals, cyberdata and also the hybrid properties of the physical space.

Since 2009, my work has evolved from interactive Media Art to enactive affective systems in terms of Art and Technoscience, along with developments in biomedical engineering and investigations in aesthetics, physiology and synaesthesia. Enactions are part of philosophical discussions. Aristotle's poetics and enactment theories are the remote references



Fig. 2. (left) Diana Domingues with the Kuikuro chief in the Xingu Indigenous Park in the North of Mato Grosso, Brazil, 1997. © Diana Domingues/CNPq, Brazil.



Fig. 3. (right) Kuikuro tribe during ritual in Alto Xingu, Brazil. © Diana Domingues/CNPq, Brazil.

for creative levels and the understanding of our relationship to human and environment in the “drama of life”. [8] Chilean philosophers Humberto Maturana and Francisco Varela [9] are references for discussions on the mutual influence of organisms with the environment and autopoietic feedback. Phenomenology, cognitive sciences, and biomedical engineering laws, provide the foundations for our Bioart practices by building a set of concepts and metaphors resulting from enactions, and here I consider perception and actions in terms of Noë’s theory. [10] The expansion of the sensorium in the post-biological context of Bioart faces the “transformation du vivant” [11] at a physiological level. I highlight Ted Krueger’s contribution on prosthetics and sensoriality. [12] Nowadays, I expand the discussions to the Spinozan body, [13] which is affected and endowed with the affective ability to communicate with the environment when enacted by the rates of EOG, EMG, EEG, GSR sensors. The signals recognize the body/environment affection intensity of heat, cardiac output, respiratory flow, muscles activity, tactile vibrations, and other measured sensations gained by sending and receiving, exchanging signals and the intertwined relation with the environment, i.e. the enactive affective system responses. The ouroboric perception comes true. It appears in complex feedback, similar to when the serpent eats its own tail. So, we expand kinesthesia, [14]

body movement schemes or motion sensors’ activity, that recognize the environment through synaesthesia, by adding physiological data from all properties by signal processing, skin temperature, heart rates, cardiac flow, breathing, and muscular rhythm. Human actions in enactive affective processing systems and the processes of knowing, learning and teaching affections generate living maps and affective geographic narratives in an ouroboric perception. In the tradition of *mestizaje*, ouroboros bites its own tail, in a constant feedback, reaffirming the autopoietic condition. The symbolic connotation of the Ouroboros encircling the earth and eating its own tail is related to the returning cyclical nature, self-fecundation; disintegration and re-integration; truth and cognition; self-regeneration, the idea of beginning and end. The embedded systems, using sensors, and in most recent artworks using physiological sensors, offer the effects of the body biological rates, changing mutually and reciprocally with the environment. Consequently, characterizing an ouroboric autopoietic perception. See examples later.

Consequently, biocybrid systems for enactive affective perception created at LART –the Laboratory of Art and TechnoScience at the University of Brasília at Gama (UnB/FGA) in 2009, envision creative technologies towards innovation and the reengineering



of life in three axes: reengineering of sensorium, reengineering of nature and reengineering of culture. At LART, a transdisciplinary group of researchers work in collaborative practices integrating artists, professors and students of the Biomedical Engineering Graduate Program, and five engineering undergraduate programs. Our Lab attempts to work with creative technologies and innovation in levels of disruption, using existing technologies but proposing innovation and reinvention of ways of living. Proprioceptive devices for movement map participant's displacements or gestures and provide feedback for navigation and positioning. This principle constitutes the basic idea of kinesthesia in the domain of aesthetics, which was largely explored in many applications in VR paradigms. These paradigms were traditionally related to the Cinetic Art of the 80s and now assume qualities of disruptive technologies for perception and sensorial measurement, offering a compelling experience. This issue will be dealt with later here in relation to the project "Reengineering Life: Creative Technologies for the Expanded Sensorium," developed at the Camera Culture Media Lab at the Massachusetts Institute of Technology (MIT).

### OUROBORIC PERCEPTION AND POETICS

Mestizaje and ouroboros are inspirational seeds to discuss my artworks through a poetic lens. These metaphors have guided my interactive art of Media Art since the beginning, and are expanded in the recent domain of Art and TechnoScience in BioArt and innovation.

I have discussed the ouroboric perception and poetics in my interactive artworks since my first cyberinstallation in the 90s, *Trans-e my body, my blood*, [15] which became an emblematic artwork and inserted the theme of interactivity and ritual into the artistic-scientific community. It is related to Afro-Brazilian popular religions as in a shamanic trance. Northeast Brazil's Inga Stone's projections show metamorphoses sprouting from prehistoric inscriptions. People interacting become metaphorically

shamans who consider the stone as a 'veil' between their world and the 'spirits' world. The software "shaman 32," based on artificial intelligence researches, has autonomy to self-regenerate the life of the cavern and the 'mutant visions' by surprising people with unexpected emergent 'realities'. In 2007, the piece reincarnated in a new, more complex version called *The Cavern of Trance, a more complex version of the embedded system*—it was expanded to immersive and crossmodal technologies, multi-sensorial interfaces and immersive multi-display synchronized large screens in VR—and it was also adapted for mobile connections.

In a dark room, a large panoramic screen offers images and sounds as if on the walls of a cave: scenes, textures, lights, gleams, animals in stereoscopic vision allow a spatial navigation responding to bodies' motions and gestures by providing a ritual: sets of video images changed through three levels of a shamanic trance; infrared sensors captured the body heat and a blood-like liquid kept moving in a bowl, like an offering to life. A special quality of this artwork was to provide physically-impaired people with equal capability to act using infrared sensors zones and/or by multi-sensorial interfaces of sound interfaces using Afro-Brazilian musical instruments: flute, maracas, whistles, afuches, rainsticks, shakers and other ritualistic instruments. People were tracked to synthetic objects that moved according to sounds and noises. Non-mobile people could only interact with their mouth making sounds with whistles, flutes, or singing, making noises, and so interacting with the system in a kind of ritual. On the other hand, people's displacements and gestures generate several proprioceptive interactions. A wireless tracker and an accelerometer with a gyroscope provide responses and motions in proprioceptive interaction, and by focusing with a flashlight the walls of the cave, magically people manipulate the objects: thunders, butterflies, spiders, vases, crosses, worms, animals appear in the room in stereoscopic visions creating a sensation of enhanced trance.

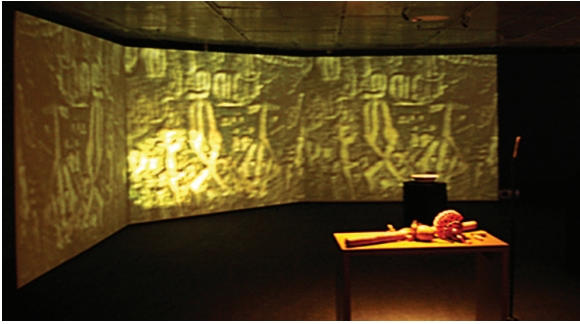


Fig. 4. (top left) *The Cavern of Trance*, 2005, 2007, 2009. Large screen, Ingá Stone projections. *Memories of the Future, 10 Years Art and Technology*, Instituto Itaú Cultural São Paulo, Brazil. © Diana Domingues/CNPq.

Fig. 5. (bottom left) Multiple situations of the cyberinstallation. *The Cavern of Trance*, 2004, 2007. NTAV CAVE immersion. *Memories of the Future, 10 Years Art and Technology*, Instituto Itaú Cultural, São Paulo. © Diana Domingues/CNPq.

Fig. 6 & 7. (top and bottom right) People interacting with musical instruments, 2005, 2009. © Diana Domingues/CNPq.

Another ritualistic proposal is the web art installation *INSN(H)AK(R)ES* (1998), which offers a telematic ritual to incorporate a robot snake, in a seamless connection, allowing participants to inhabit and act in a remote serpentarium through the embodiment of a robot snake. When connected, the remote actions confirm the seamless condition with the robot's body using the web, and let come true the desire to incorporate an animal body during an interactive telematic ritual. The connection with the robot consists of a physical incorporation of the snake body represented by the robot that lives among real snakes, as shown in the images. Connecting the robot enhances the body to a planetary scale, involving decisions that are made

in cyberspace without any physical or geographic boundary. When connected, remote actions materialize the desire to incorporate an animal body and gain the shamanic powers necessary to become an animal –and acquire its powers during the ritual. Connections allow immersions and teleactions in a remote serpentarium in a Museum of Natural Sciences in Brazil. The remotely controlled robot called Angela, makes several trajectories led by the orders of participants, who steer the movements with the arrow keys of a keyboard of their own computers wherever they are. Presence sensors capture the action of the robot and release amounts of water and little mice that supply the serpents' basic needs. Life in this environment is a result of the mixture of biological and technological signals. The body was enacted by enabling an effective remote action. Among other exhibitions, I highlight those at MUCA (Mexico) and Lima National Gallery. (Figure 2) In the catalog of the exhibition, Roy Ascott emphasizes that the artwork offers a cyberception at the level of the reptile.



Figura 1 – INS(N)AK(R)ES webart installation

Fig. 8. (top) *INS(N)AK(R)ES*, 1998, web art installation. © Diana Domingues/CNPq.

Fig. 9. (bottom) *FIRMAMENTO* 2005-2009, cyberinstallation. © Diana Domingues/CNPq.



*Firmamento* Popstars, Installation: Exhibition: Telemar Museum 2005 and Cinetic and Digital Itaú Cultural, 2005

In the same magic and ritualistic mestizo poetics, I highlight another installation, *FIRMAMENTO* [16]. It allows a conversation with the stars in a synthetic ecocosmos, inside a biocybrid landscape in A-Life. People receive shamanic powers for affecting natural phenomena when absorbed in an aesthetic experience in front of a huge lake, the 'eye of the earth'. People have a dialogue with the lake as if it were a mirror of the firmament of the synthetic cosmos peopled by idols. The behaviors of the stars represented by dots of light in A-Life, create a living organism in a stereoscopic vision. By interacting with a tablet, visitors move the stars in the lake visualized on the floor. The stars represent different idols of cultures given by a flocking

algorithm, and are activated by the stars' proximity and their desire for light. Internet searches of a list of words come from the database stored on the system, which return through data mining as surprising sentences written on the walls of the dark room. The same process could be performed by sending SMS messages from the mobile phones to the stars. By using a list of idols, i.e. famous people in human culture, such as Einstein, Marilyn Monroe, Mother Theresa, Cleopatra, Carmen Miranda, and a list of terms related to their life and actions that characterize their life, we send SMS messages and the cell phones return sentences by associating in data mine process, surprising narratives about their lives. It is the collective voice of the planet



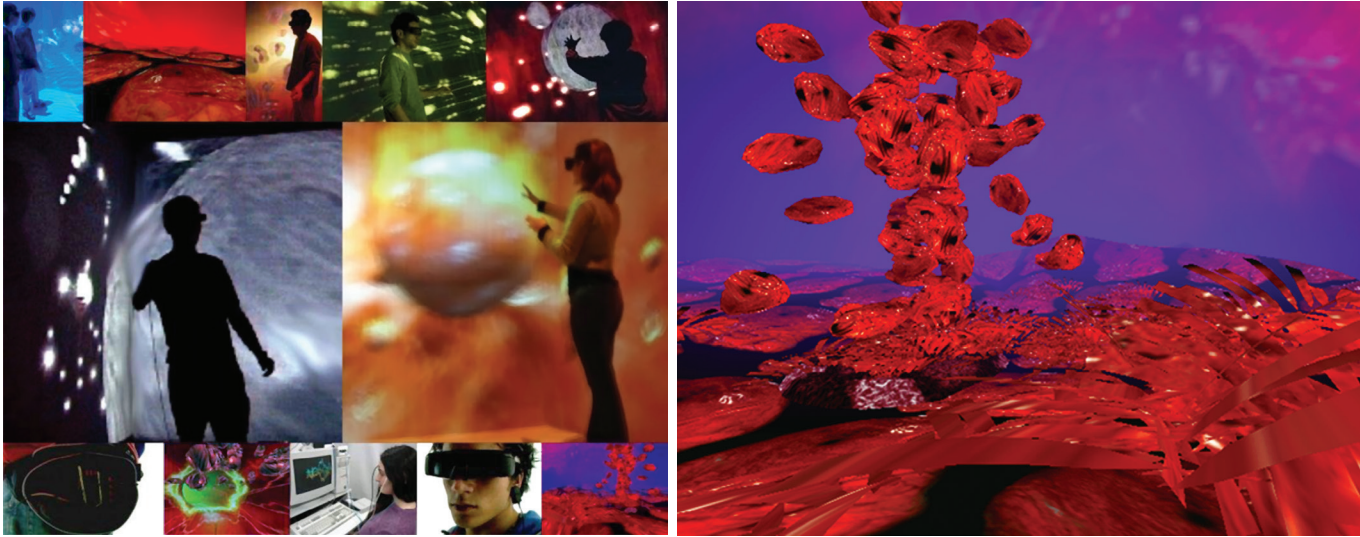


Fig. 10. (left) *HEARTSCAPES*, 2005-2009, NTAV CAVE, immersion in a data landscape of the heart controlled by trackers, stereoscopic glasses, biofeedback of heartbeats and electrooculogram (EOG). Brazil. © Diana Domingues/CNPq. Fig. 11. (right) *HEARTSCAPES*, 2005-2009. Dynamic of particle systems. Brazil. © Diana Domingues/CNPq.

in emergent states. Unknown authors write sentences related to the idols' personality, and the dots in A-Life projected in the lake of the landscape change in a surprising, mutant firmament.

In the field of VR and immersive poetics inside a Cave, I highlight the magic of *HEARTSCAPES*. [17] It allows responses from synthetic objects and navigation in the 3D ground, and offers the atmosphere of a ritual, metaphorically giving shamanic powers inside data landscapes of a heart, and the immersion in a synthetic landscape, mixing visual effects with

noises of indigenous rituals, natural environments and phenomena of the ecosmos. The result of this investigation is published in the chapter "Human biology" in Stephen Wilson's recent book *Art + Science Now*. [18] Physiological devices and biofeedback of electrical waves in EOG electrical signals offer mutations of forms in real time and are also commanded by another biological interface that captures heartbeats, sending signals from the participant's heart to the system. The interactivity of physiological signals results from the heartbeat frequency (ranges 60/80, 80/100, 100/200, 120/140, 140/160). The action



Fig. 12. *VR AQUARIUM*, telepresence, immersion, and A-life in the CAVE. © Diana Domingues/CNPq, 2005-2009.



**Living tattoos** Fig. 1: Sending the tattoos picture by MMS. fig. 2. Transforming a 2D image into a 3D graphic interface. Fig. 3: Creatures in 3D AL in the tattooarium. Fig. 4: Graphos of datamining coming from tattooed people. Fig. 5: People in buses sending SMS and MMS. Fig. 6: flash mobs and google maps – locality and existential maps in the social platform;

Fig. 13. *Living Tattoos*, 2007. © Diana Domingues/CNPq.

of the biofeedback sensors activates a VR particle system of *HEARTSCAPES*, move the position of the objects, and changes colors on the screens, confirming the dynamics and kinematics of the virtual, by communication by the electric waves of the eyes with the VR world.

Another immersive environment that mixes virtual and augmented reality installed in a cave is *VR AQUARIUM*. [19] Telepresence images of fish living in an aquarium of the Natural Science Museum next to the cave on the same floor are transmitted and combined with synthetic 3D scenes. The body enters the cave populated by real and synthetic animated fish in relief seen through stereoscopic glasses that let the synthetic fish pass through the immersed body of the visitor. The interaction with the virtual fish uses a body movement tracker, enabling the participant to touch the creatures by simple gestures and activating an artificial life boids algorithm that gives them a collective behavior. The virtual fish move together, showing a behavior similar to that of the biological world. The interfaces blur the real and the virtual, confirming the magic of interactive technologies.

In terms of mobile condition and tribal logic, I select *LIVING TATTOOS* as a social platform that enables people to produce contents by adding information on their lives. Each person sends us his/her own tattoo by mobile phone or by email. The shapes are turned into 3D models and placed on the synthetic ground of the tattooarium, where they can live together. They become living creatures in A-Life. Their evolution is determined by their dialogue coming from a search engine - data-mining system - which provides us with specific traits of their personalities. The other proposal is the urban interventions in flash mobs titled "tattoos mob," another part of the project that installs tattooed communities in different locations of the city and also develops data visualization of the urban tattoo flows in the mobile mobilization in the physical space of the city. Their communication generated through ubiquitous computing, locative, pervasive and sentient mobile technologies (cell phones MMS and SMS) communicate with locative interfaces as GPS and Google Maps. It is a storytelling mobile narrative of tattooed people in urban spaces.

## RITUALS AND CURE: HEALTH AND WELL-BEING

"Electricity is life," says the futuristic premise. Sensors and embedded systems allow electrical signals' embodiments and enactive affective aesthetics, adding further data of all senses in the principle of synaesthesia, thus enhancing the kinesthetic laws of movement and proprioception. Synaesthesia, meaning all the senses together, enhances aspects of motion, electricity, graphic design to the translation of signals of data from the other senses. In an analogy to smallest units such as phonemes, graphemes, morphemes etc., I have chosen to use 'kinemes' and 'synaesthemes' to express parts of a ritual motion and body language. Experts in human motion explain the nature and effects of movements and gestures in rituals (e.g. *candomblé*, samba, tai chi). Thus by studying rituals we can see how everyday gestures such as grabbing a glass or extending





Fig. 14. *Biocybrid Ouroboros: Ecstasy's Geographisms*, 2012. Workshop and exhibition. The Oncena Bienal de La Habana. © Diana Domingues/CNPq.

a hand can help health research, rehabilitation and well-being investigations. Body movements, gestures, postures, fragmentation, reinstatements, dynamics, internal-external connections and motor schemes deal with gestures, rhythms, not only at each stage of the movement, but also considering what affects the participant and the environment in a mutual exchange. Synaesthemes unleash a complex chain of senses' impressions, previously experienced, stored in the memory of sensations, affections, emotions and thoughts. Attempts are made for the system to read the rhythmic patterns of movement to bring about ecstasy and ouroboros life. That was the proposal of the artwork *Biocybrid Ouroboros: Ecstasy's Geographisms* [20] at the Oncena Bienal de La Habana (2012).

During Afro-American rituals, simultaneously, information generated visualizations and sound patterns. The concept of trance that I proposed in the 1990s was modified by the discussions with the expert in Brazilian Maria Aparecida Donato. [21] Rising from ecstasy in Brazilian rituals such as carnival and candomblé, research results affirm that shamanic trances differ from ecstasy states. In an ecstasy state, sensations, emotions and thoughts come from bodies that are conscious of their sense of presence, albeit the condition of transcendence ecstasy here is significantly different. Trance is an unconscious and mediunic state, while during ecstasy we are aware and live rhythms and structures of the body autopoiesis with the environment. Using data visualization and signal

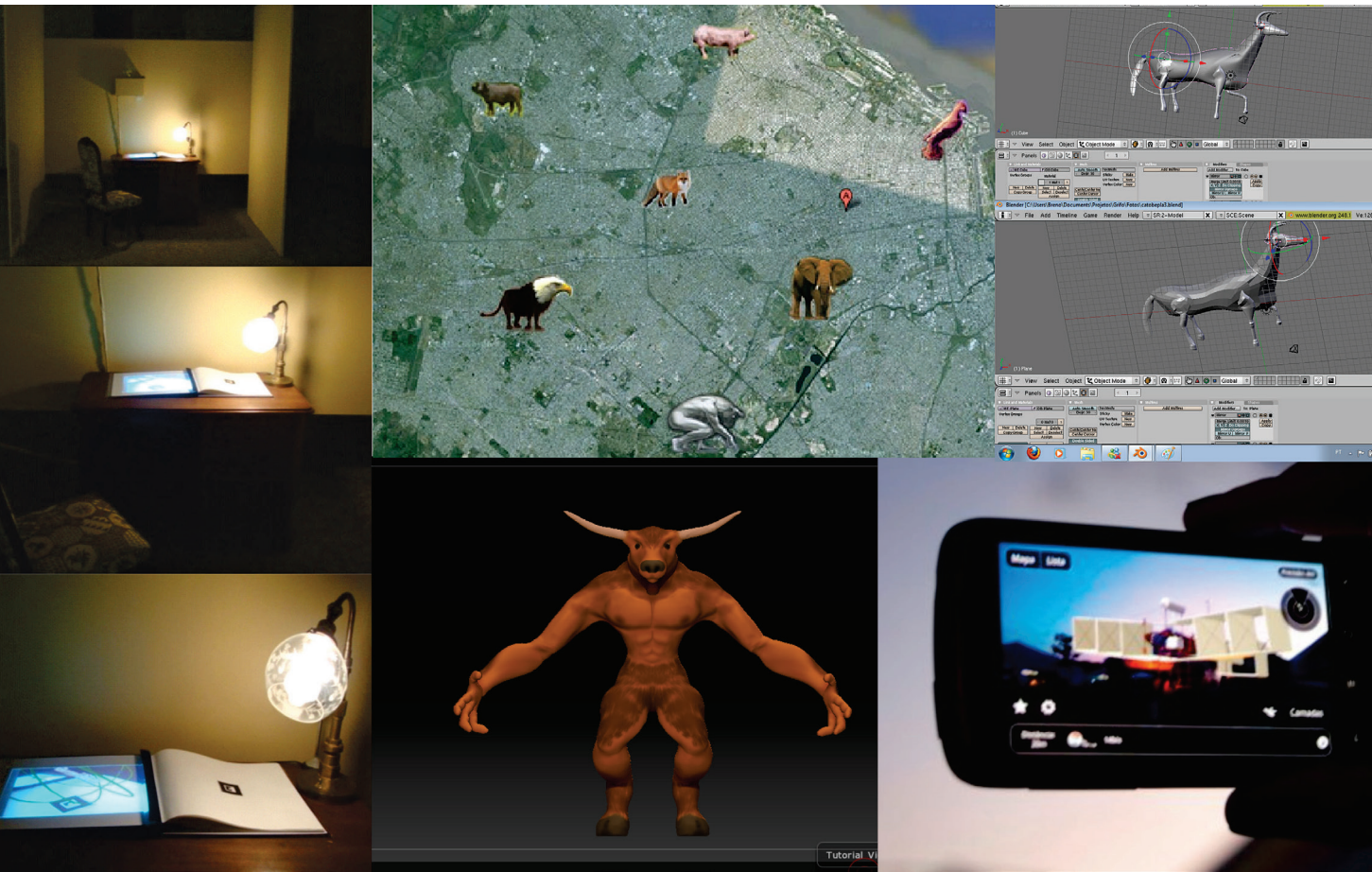
processing we create 'biograms' (data visualization) of corporeal living maps in kinesthesia and synaesthesia as a result of perceiving and processing data of human physiology for the understanding of body actions and their cosmic relationships in daily rituals. The workshop and exhibition related to the Habana Biennial developed specific software for the analysis of measured data of physiological rates and motion traces for the generation of graphics visualization that changed dynamically during the rituals offering data visualization landscapes of a new abstractionism. In the exhibition, two large screens presented impressive body rituals and data visualization landscapes.

The workshops demonstrated the importance for artists and scientists to engage in the processes, and methods for creating common viable systems

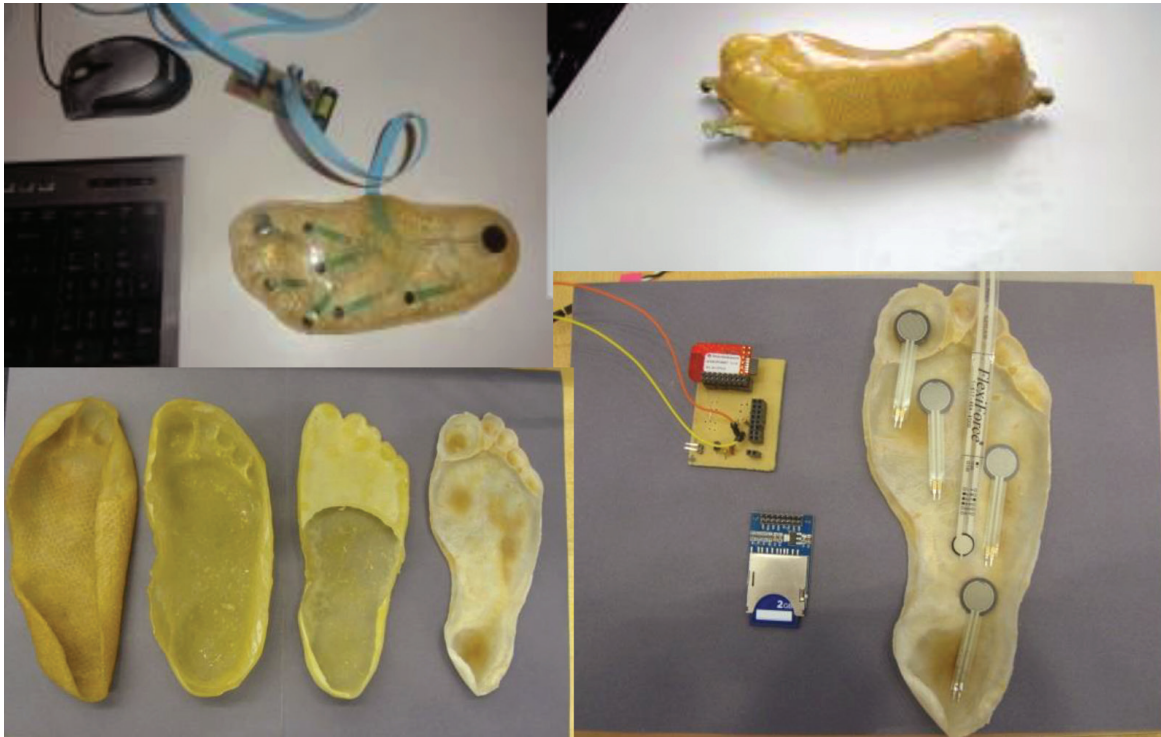
from which artists as well as scientists can benefit and express a systems' capacity for processing data, and human cognitive capacities for dealing with logic and hermeneutic dialogues. The results confirm the possibilities for human/ systems sharing introspections and poetry, and revealing complex behaviors and human identities taking the remote history of the rituals, which present actions and gestures of our daily life. The rehabilitation field in health and well-being is confirmed as a rich domain for this kind of artwork. Or for art to reinvent the ultimate nature of our species, close to ancient beliefs.

What is vision now? What is real now? What is landscape now? What is urban life now? What is mystery? What is magic?

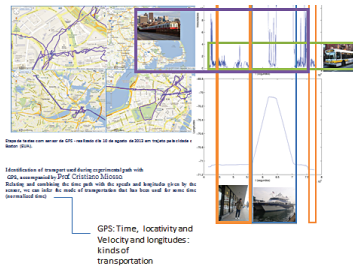
Fig. 15. *BIOCYBRID FABLES: BORGES' FANTASTIC CREATURES*, 2011. Urban intervention in MAR (Mobile Augmented Reality) and Installation in AR, Buenos Aires. © Diana Dominguez/CNPq.







Visual analytics: mobility, locativity and variables of velocity-accelerometer



Figs. 16. *Cidadepathia*, 2014. Brazil. a) sensorized insole b & c) living maps in enactive affective systems and innovation for art and technoscience and health. © Diana Domingues/CNPq.

Regarding vision, urban life, our habits, landscapes, survival and biodiversity, and societal challenges in terms of anthropological issues, the mobile condition amplifies the phenomenology of 'being here.' Computers have disappeared and technologies are transparent, cyberspace is everywhere, as Gibson states. Life is altered by cyberspace, and the use of cell phone, mob cameras and locative and geographic interfaces radically change our landscapes. Data visualization and computer vision allow the postbiological extrusion of human vision, and in terms of Bioart and biomedical investigations, peripheral perception provoke the postbiological extrusion of human vision into an altered process of perception/cognition. The postbiological extrusion of human

vision in the act of seeing shared with the eye in the sky, and with the eye in the hand, i.e. the act of seeing shared with the eye of the satellite in the sky and the eye of the mobile device in the person's hand, configure an enactive act extending the sense of seeing or expanding human perception by the extrusion of our visual apparatus. AR tags placed on GPS, and the possibility of seeing in computer vision using geodesic coordinates create a co-located event for the human body.

In 2010, the artwork *BIOCYBRID FABLES: BORGES' FANTASTIC CREATURES*, in two modalities -urban intervention in MAR Mobile Augmented Reality and Installation in AR- translates imaginary creatures

into synthetic objects. Modeled in 3D and distributed in tags, the synthetic creatures are scattered by geodesic coordinates, and through tags, are stored in a satellite. The intention is to create a mysterious vision near the Cultural Center San Martín (Buenos Aires, Argentina). The Augmented Reality Mobile Technologies (RAM) distributed transbiomorphic shapes as snakes, minotaurs, pigs, tigers, among others translated from the reading of Jorge Luis Borges' fables in "The Book of Imaginary Beings." The urban intervention used using mobile technologies and computer vision, GPS, network connections, to insert Borges' synthetic creatures in real scale, providing a geotagged vision in the streets of Buenos Aires. Another biocybrid artwork was the response to the invitation for special guest artist at the Art exhibition "La cultura argentina en la edad digital" at the San Martín Cultural Center. The use of tags allowed the act of reading a book in computer vision and augmented reality. Reading the book, every page showed animals of the 'bestiarium' growing from the paper and thus reinventing daily life things in domotics and the act of reading a book.

Bioart and health are also included in the study of Brazilian rituals in a transdisciplinary approach in the fields of arts, humanities and sciences. This approach was dealt with in the project *Reengineering Life: Creative Technologies for the Expanded Sensorium*, developed at the Camera Culture Media Lab at the Massachusetts Institute of Technology (MIT). The act of walking and the use of embedded systems to analyze relations between people and space as well as the proxemics involving inhabitants, patients, doctors, places and things etc. are the object of innovation of a system to diagnose diseases - mainly diabetes - and also for other applications in well-being similar to a personal assistant who gives information in mHealth and mobile applications. [22] The particular innovation is the application of that system for diagnosing and treating diabetes, as well as other applications in mHealth. [23] The prototype

called *Cidadepathia* consists of a sensorized insole built with Brazilian latex (*Havea brasiliensis*) as a mobile (wearable) device. Lucena defends that the insole is a sensorial device to capture the energy and the pathos of the city. [24] The insole made with a biomaterial acquires physiological data combined with locative tools. I make a similar reference to the ouroboric perception when creating living maps of the city. Processing signals and data visualization reveal enactions and affective narratives of passers-by. The tool tells stories about people and urban activity in a kind of bio(geo)graphies recording journeys. Although Lucena alludes to the mythological figure of Hermes and his winged sandals, I prefer to insist in sandals similar to the ouroboric serpent and the reinvigoration when giving and receiving energy in the autopoietic feedback with the ground.

Finally, I believe that challenges of the world increasingly faced by circuits of sensors and transparent technologies are blurring the limits of the natural and the physical, and are reengineering reality. We are facing the transformation of our life in nature itself, signaling the emergence of the naturalization of technologies and the engineered reality for a healthier future.

## REFERENCES

1. Edmond Couchot, "Between trance and algorithm," in Diana Domingues, *Trans-e: my body, my blood*. Exhibition catalogue (Caxias do Sul: Lorigraf, 1998).
2. Diana Domingues, "The desert of passions and the technological soul," in *Digital Creativity* vol. 9. (Lisse: Swets & Zeitlinger, 1998), 11-18.
3. Marc Weiser, "The computer for the twenty-first century," *Scientific American*, September 1991, accessed March 29, 2016, <http://www.ubi.com/hypertext/weiser/SciAmDraft3.html>.
4. Olivier Dyens, "The Human/Machine Humanities: A Proposal," *Humanities*, vol. 5, issue 1, March 1, 2016, accessed March 29, 2016, <http://www.mdpi.com/2076-0787/5/1/17>.
5. Diana Domingues, "Art Interactif, corps couplé et sentiment post-biologique," in *Dialogues sur l'art et la technologie*, org. F. Soulages (Paris: L'Harmattan, 2001), 123-138.
6. James J. Gibson, *The ecological approach to visual perception*. (New York-London: Psychology Press, 1986).
7. All these issues are related to the experience I had, being immersed in a tribal world together with a small group of artists when we lived with the Kuikuru Indians deep in the Xingu Indigenous Park in Mato Grosso, Brazil.
8. Aristotle, *Poetics*. Accessed March 29, 2016, <http://www.iep.utm.edu/aris-poe/>.
9. H. H. Maturana and F. J. Varela, "Autopoiesis and cognition: the realization of the living," *Boston Studies in the Philosophy of Science* 42, 1st ed., 1980.
10. Alva Noë, *Action in perception* (Cambridge, MA: MIT Press, 2006).
11. Ernestine Daubner and Louise Poissant, *Bioart: transformations du vivant*, (Québec: Presses de l'Université du Québec, 2012).

## BIO

Diana Maria Gallicchio Domingues is the founder and director of LART (Art and TechnoScience Research Laboratory). She is a CNPq (National Research Board, Ministry of Science Technology and Innovation) researcher, and senior artist/researcher of the National Program of Visiting Professors (PVNS) of the Ministry of Education, Capes (2010-2014), Brazil. She has traced the plan of 'New Leonardos' at the University of Brasília, based on the creative minds of artists and scientists to redefine the boundaries of art and contemporary science, building innovative practices that contribute to contemporary forms of art and technoscience. She is a senior professor at the Post-Graduate Program in Biomedical Engineering at UnB Gama and at the Post-Graduate Program in Science and Technologies in Health at UnB in Ceilândia. She is involved in projects with international collaborations such as MIT - Camera Cultura/CNPq, advisory board of the Program MediaAC, Department for Image Science (Danube University Krems), and OCADU in Toronto. Results of her researches have been published in high impact communities such as IEEE, ISEA, Leonardo, SPIE. She holds a post-doctoral degree from ATI - Art & Technologies de l'Image, Université Paris VIII, and a PhD in Communications and Semiotics from PUC São Paulo. She has published and organized around 10 books such as EDUNESP:

*Arte, ciência e tecnologia: passado, presente e desafios* (2009); *Arte e vida no século XXI: tecnologia, ciência e criatividade* (2003); *A arte no século XXI: a humanização das tecnologias* (1997); *Criação e interatividade na ciberarte, Experimento* (2002). She has written approximately 100 chapters in books, articles in journals from Harmattan, Presses UQAM, LAVAL, and other publishers in Mexico, Spain, Italy, France, the UK, China, Japan, and the US, including Leonardo and Digital Creativity. She is an artist with over 50 individual exhibits, and over 130 collective exhibitions in São Paulo Biennials, Bienal de la Habana, Bienal do Mercosul, HKW (Berlin), MN Belas Artes (Rio de Janeiro), MAM and MAC (São Paulo), and in galleries and museums in France, Italy, Sweden, the US, Greece, China, Mexico, Peru, Argentina and Colombia. She has curated international events such as Ciberarte Zonas de Interação (II Bienal do Mercosul), engaging with over 300 scientists and artists. Awards include The 2000 UNESCO PRIZE - 7th Biennial la Habana; The First LEONARDO Global Crossing Prize; 2004 Rockefeller Foundation; Personalidade do século XX (Caxias do Sul, Brazil); and Prêmio Sergio Motta 2011. Her work is published in reference books such as *Art + Science Now*, by Stephen Wilson, Thames and Hudson, 2009; *Information Arts* by Bruce Wands, MIT Press, 2002; *Digital Art*, 2004; *Latin American Art in the 20th Century*, by Edward Lucie-Smith, Thames and Hudson, 2003.

<http://fga.unb.br/lart>

12. Ted Kruger, "Perception prothétique: vers une conscience élargie," in *Bioart: transformations du vivant*, org. E. Daubner and L. Poissant. (Québec: Presses de l'Université du Québec, 2012), collection Esthétique, 179-193.

13. Benedict de Spinoza, *Ethics*, ed. and trans. Edwin Curley (New York, NY: Penguin Books, 1994).

14. Alain Berthoz, *The Brain's Sense of Movement*, trans. Giselle Weiss (Cambridge, MA: Harvard University Press, 2000).

15. Cyberinstallation exhibited firstly at ISEA 97, at the School of Art Institute in Chicago Isea Montreal, Modern Art Museum, Buenos Aires, 1999, II Bienal do Mercosul, VII Bienal de la Habana, when receiving the 2000 Unesco Prize, Lima 2000), Kibla Multimedia Center, Maribor, Slovenia, 2003 and Exhibition Valfisken Gallery, Simrishamn, Sweden, 2003.

16. Diana Domingues, "Firmamento PopStars," in *Revista Eletrônica Itaú Cultural Ciberultura*, 2005.

17. Diana Domingues and CNPq Collection, *Heartscapes*, 2005-2009. The artwork was installed in a cave. See in: Diana Domingues, "Human biology," in *Art + Science Now*, Stephen Wilson (London: Thames & Hudson, 2010), 70 and, "The immersive poetics of artificial worlds". In *Hybrid Reality: Art Technology and Human Factor*, Hall Twaits et al., Ninth International Conference on Virtual Systems and Multimedia, International Society on Virtual Systems and Multimedia - Hexagram Institute, Montreal, Canada. October, 2003b.

18. Stephen Wilson, *Art + Science Now* (London: Thames & Hudson, 2010).

19. *VR AQUARIUM*. Exhibited in a cave. Diana Domingues and CNPq Collection, *VR AQUARIUM*, 2005-2009, NTAU. Exhibited in a cave.

20. The artwork *Biocybrid ouroburos: ecstasys' geographisms*, exhibited at the 11th Havana Biennial (2012). Diana Domingues (artistic and scientific director); Adson da Rocha (engineer and scientific director); Cristiano J. Miosso (engineer and scientific coordinator); André L. G. de Oliveira (musician and composer); Carine S. Turelly (artist and workshop coordinator); Cida Donato (artist and workshop coordinator); Tiago F. R. Lucena (media director); Henrique G. Debarba (computer scientist); Alexandre A. Barbosa (computer scientist).

21. CNPq fellowship holder (PDJ). Discussion in her postdoctoral research, focusing on body and Bioart, at LART (UnB), under Diana Domingues' supervision. 22. Diana Maria Gallicchio Domingues et al., "Innovation in art and technoscience towards creative technologies and the transdisciplinary research for the reinvention of life," forthcoming in *The culture of digital education: innovation in art, design, science and technology practices*, senior eds. Lanfranco Aceti, Nina Czegledy and Oliver Grau (LEA, LEONARDO ELECTRONIC ALMANAC).

23. The project resulted in the PhD dissertation by Tiago F. R. Lucena and the post-doctoral research Suélia Rodrigues, integrating the two laboratories LART/FGA and Camera Culture/MIT/CNPq in a series of activities of the Program MIT International Science and Technology Initiatives -MIT-Brazil Seed Fund/CNPq - Project titled: "Reengineering Life: Creative Technologies for the Expanded Sensorium." Directors Adson Ferreira da Rocha and Diana Domingues and American Research Leader: Ramesh Raskar/MediaLab-MIT.

24. Tiago F. R. Lucena, "Sistemas enativos afetivos em arte e tecnociência: experiências vitais dos deslocamentos na cidade," (Enactive affective systems in art and technoscience: vital experiences of displacement in the city) (PhD diss., UnB, 2013).



# MATTER MADE from TRADITION

› Eduardo Castillo ‹

TRANSLATED FOR  
MEDIA-N JOURNAL  
BY GUSTAVO  
CREMBIL AND PAT  
BADANI FROM THE  
ORIGINAL SPANISH  
TEXT, "DESDE UNA  
TRADICIÓN HECHA  
MATERIAL"

1.

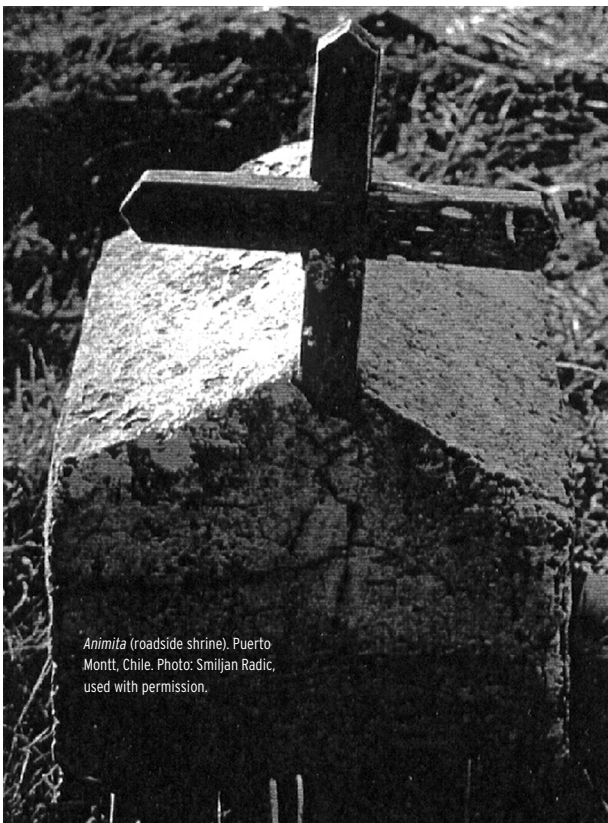
Grayness dulled all colors; it was a dense and solid layer. Furthermore, there was a forlorn air about that construction, as if it could not bear its destiny. Everything fell to pieces at mere sight, a pitiful time tirelessly resting over it.

2.

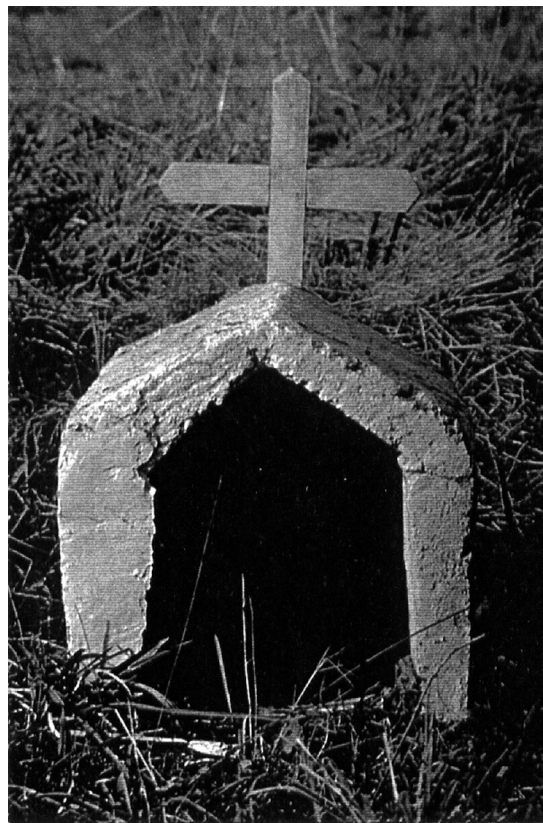
Fragile structures without ambition, without hope, without repair. As if their useful lifespans had come to an end, discarded out of fatigue; worthless, embodying the weight of their own exhausted memory. Such fragility, such beauty, is all I search for.

3.

A mantle of roof-tiles deformed by the passage of time, roadside scenery of our abandoned silos, fantastic barns devoid of interest, popular *animitas* (roadside shrines) dripped with candle wax... Those are the only structures that attract me; the only ones I stop to contemplate.



*Animita* (roadside shrine), Puerto Montt, Chile. Photo: Smiljan Radic, used with permission.





(left) Eduardo Castillo, *Gallinero House*, 2000-2007. Interior, pine, and cedar wood, 110m<sup>2</sup>. Florida, Concepción, Chile. Photo: Cristobal Palma, used with permission.  
(right) Eduardo Castillo, *L' Animita Chapel*, 1997-2000, 55m<sup>2</sup>. Florida, Concepción, Chile. Entrance, interior view. Photo: Jessica Ramirez, used with permission.

#### 4.

In the periphery, in the rural, in the margins, buildings are erected without qualms, without masking their execution, without extraneous intentions other than the particular manner in which they are made. Those structures are the ones I most appreciate, where materiality and time have filtered into their own bodies, where their fragility is their beauty—their eternal present.

#### 5.

Only concrete, only wood, only metal... Building at the margins with only one material does not point to the only way of building; rather it means: building the only way possible.

#### 6.

Concrete exposing its crude framework, the worn-out orange of brick, the tragic red of rusted metal, the gray of time-aged wood, all this appears marvelous to me—a

dramatic sensation. Materials placed with obstinacy, driven by the pleasure of building a body that, at every instance, involves the whims and weaknesses of its materials.

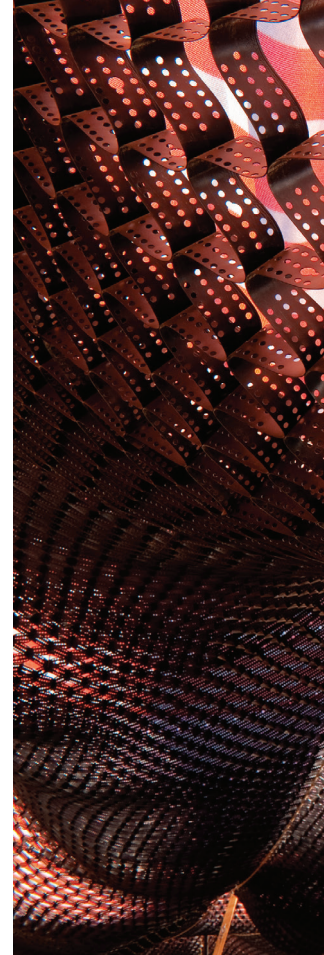
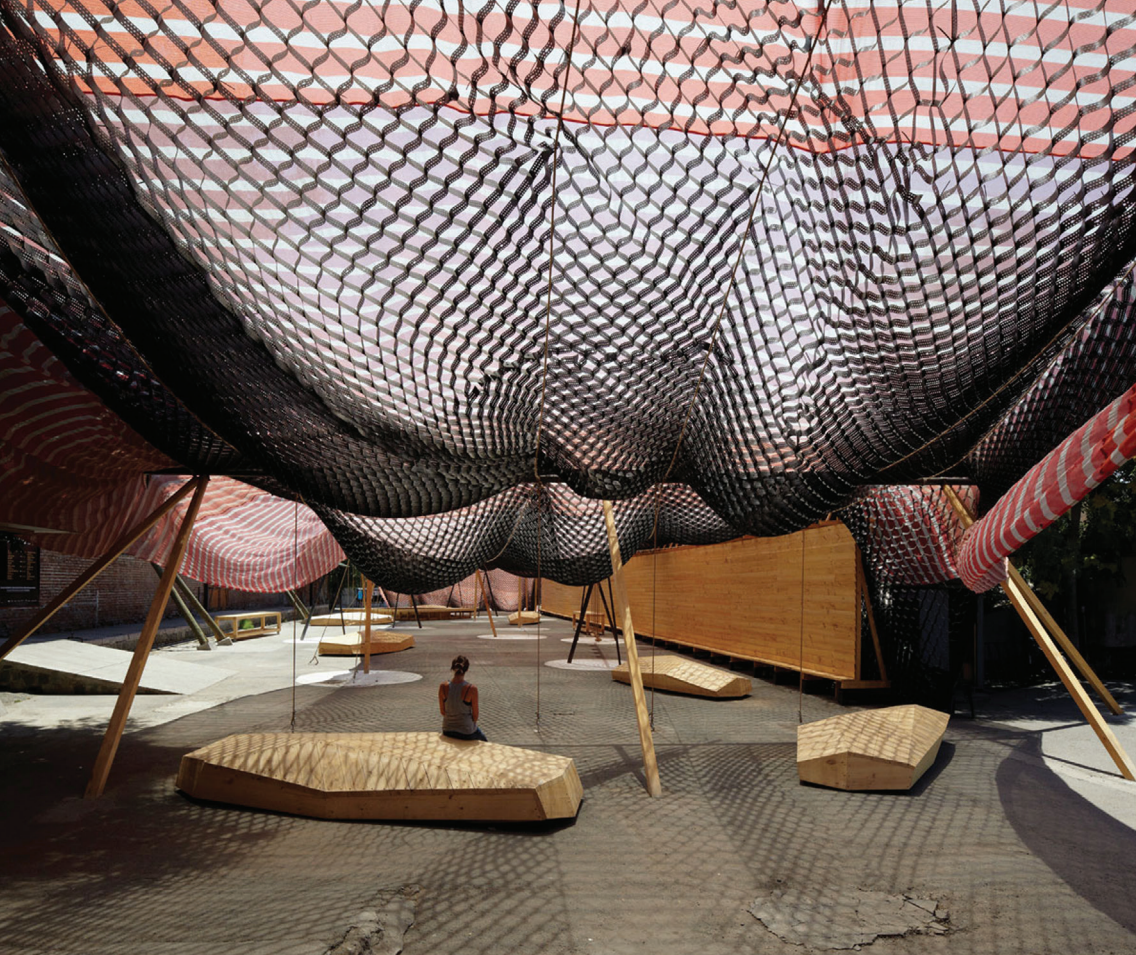
#### 7.

In the end, one is what one sees—well, at least partly. All that I have observed with affect and intention has contributed to building my political gaze, and it arises from a way of seeing architecture through the range of the opacity of materials—these reveal a silence that builds interiority within its own skin.

#### 8.

Pleasantly sinking into such interiority would allow a serene beauty, awaking to our own poverty, without pain, without remedy, without solution, relieved beyond recall.





9.

Something I read by filmmaker Wim Wenders reminded me of that particular moment: "The 'broken' buries itself deeper into memory than the 'whole.' The 'broken' has a kind of brittle surface, which one's memory can grab hold of. On the clean surface of the 'whole,' memory slips away. . ." [1] There is something in Wenders' words that may be compared to architecture. It may well be time's imprint, settling itself on matter and materials. We could say that they are a written memory, an engraving; or, more accurately, a texture that affects rotting bodies—or more optimistically, bodies being cleansed. An infiltrated time, "holding on," as Wenders puts it, and decanting everything that may bear memory.

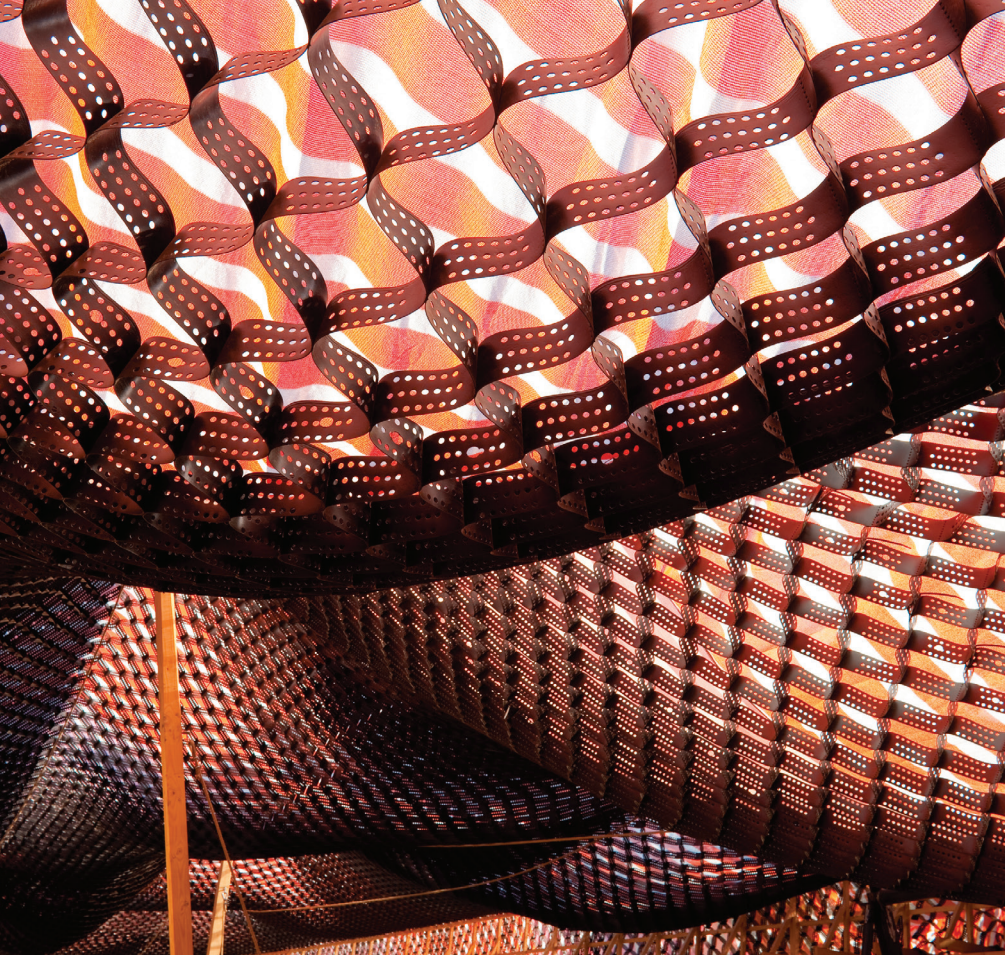
10.

In a beautiful poem Joseph Brodsky says, "Apart from death / all that relates / to space is indispensable / our body, in essence." [2]

11.

Yet, how to define that which body surfaces respond to, bodies infected on a daily basis by time, in a process that every so often seems not to discriminate? Be them lively or inert bodies, artificial or natural, discrete or flamboyant, all of them must resist, to a greater or lesser extent, the assault that results from exposure, from care, or lack of care; in a nutshell: the years which relentlessly go through their lives. Paradox lies in the life that springs through such a state of calamity. This is the image that represents a great part of the architecture I so desire to find: "an authentic construction," just as a vast part of the photographic records of Bernd & Hilla Becher who, since the 1950s, have extracted with fascination from the world of big industrial objects an unending variety of grays, which, armed with an exceptional charm, tell us without objections about their knackered story. [3]





(left & right) Eduardo Castillo and Ma. Francisca Navarro, *Color & Shade*, 2010-2011. 1500m2. Santiago, Chile. YAP - Constructo. Canopy, Ega203p, envirogrid membrane. Photos: Guy Wenborne (left) and Cristobal Palma (right), used with permission.

## 12.

I could affirm without doubt that the construction (process) does not disappear into the architecture –no matter the expertise of the makeup stylist– since richness appears in this continuous state of resistance.

## 13.

However, if we understand that the method of building bodies does not only allow fabrication –to erect or to bury an architecture– but also to cue the decanting of what life holds on to, the tension between execution and permanence in architecture (whatever this may be) shall always have to confront an elliptical narrative of successive events that take place from the moment foundations are traced on the soil until time itself removes the effort.

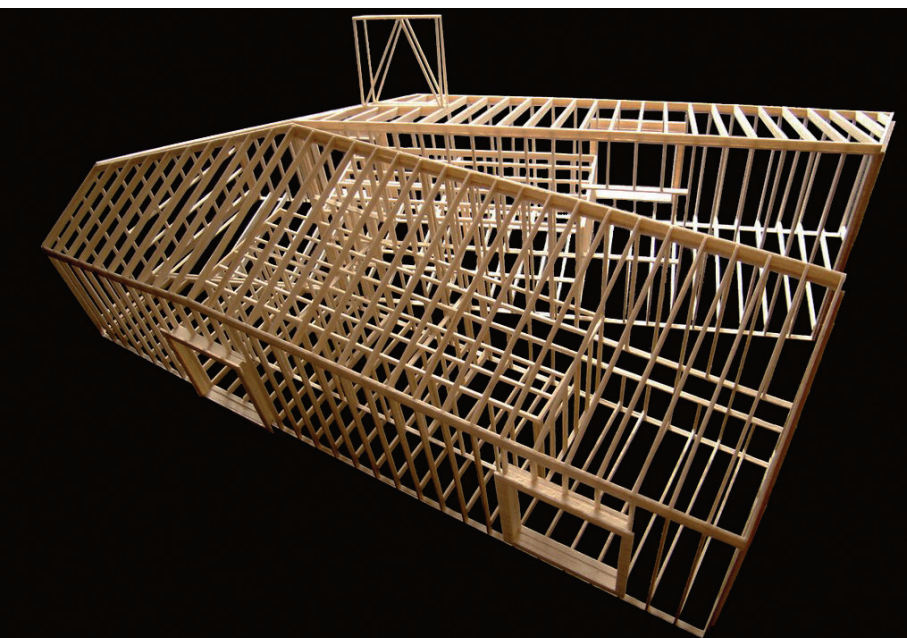
## 14.

“Things are as they are,” claims an advertisement campaign for a soda drink. This affirmation, often used in a trivial manner, bears the preoccupation or, better said, the interest that nothing appears or looks out of its condition, nature, or quality. The architecture that interests me encompasses this assertion as an ethics of reparation, or translated from Latin: “a moral of correction.” This means that even when things may have multiple meanings, what should not happen is that they *be or represent that which they are not, both physically and materially*. Possibly, one refers to the other, in some sort of succession, proper to its manipulation.

## 15.

To build without appearance, as if “naked,” seems perhaps the correct thing to do, even though not central; but devoid of allegories, devoid of explanations, privileging only its attributes, its effort, its resistance. That should be its first expression upon which to load everything else as may be wished.





## 16.

Something symptomatic in architectural construction is the capacity to discern and arbitrate means and resources “fairly.” Let’s pause for a moment on León Battista Alberti’s thoughts in this regard. “Him I consider the architect, who by sure and wonderful reason and method, knows how to devise through his mind and energy, and to realize by construction, whatever can be most beautifully fitted out for the noble needs of man, by the movement of weights and the joining and massing of bodies.” [4] In sum, architecture requires the resolution of physical-material problems; loading and unloading, movement and permanence, storage and absence, and so on...

17.

Mathematician Manuel Corrada claimed that technology is a type of knowledge coupled with discourse—with some sort of theorization. He says that the materials and associated technologies will bring with them—whether we like it or not—small deposits of discourse. [5] Every choice of material and accompanying technology is political and inscribed within a specific cultural sphere through which it attains validity. Knowing the techniques for constructing with nobleness so that these may be manipulated, will always help in shaping the clarity of (place and) remembrance, and in this way, yield constructions in synchronicity with the cultural territory in which the building is erected. Austerity, absence of ornament, basic geometries—at the foundation as much as in the built volume—affirm a search for an elemental architecture reconciled with its tradition. But this is not to be taken as an instance of “regionalism,” rather the contrary—an instance of architecture for a Global Periphery.

18.

Octavio Paz once said, “In order to become really modern we must first reconcile with our tradition.” [6] There is something quite significant in his thoughts, and I would like to believe that the architecture that I am interested in practicing fully complies with them—drawing and erasing figures, objects, and constructive technologies that are not always inscribed in the great history of architecture, but are rather everyday acts happening around us—part of traditions installed as a “conciliatory” language

19.

In his 1935 manifesto, “Towards an Impure Poetry,” Pablo Neruda underscored the importance of “[looking] closely at the world of objects at rest” to perceive in them “the confused impurity of the human condition... footprints and fingerprints, the abiding presence of the human engulfing all artifacts, inside and out.” [7]



Eduardo Castillo, *Gallinero House*, 2000-2007.  
Exterior, pine, and corrugated PVC, 110m<sup>2</sup>.  
Florida, Concepción, Chile. Photo: Cristóbal Palma, used with permission.





20.

Let us imagine the Central Valley in Chile, an untilled field, peasants clearing stones while the fresh dawn dissolves in their breath. After converting the soil into prairieland, they take those stones, they prepare the mud and straw-made mortar, and in a single borderline they construct a *pirca*—a dumb, monotonous exercise. They apply undeviating improvements dictated by utility, with the single ambition of building the limits around what is being protected. Perhaps that *pirca* is the best example of an architecture that receives what is offered as a gift, without wishing for what is lacking, but rather revealing the opportunities that might be hidden in the problems presented.

21.

I remember some sculptures by Anthony Caro that physically and conceptually embody everything I am trying to name: constructions as fruit of an elemental culture, where parts are put together as required by the need to support material weakness and to reveal the dignity of human life, even in its worst conditions. Delicately improvised constructions whose makeshift

repairs manage to hold the weight that sinks them in misery. Such a state of punishment will no doubt highlight their more beautiful present. [8]

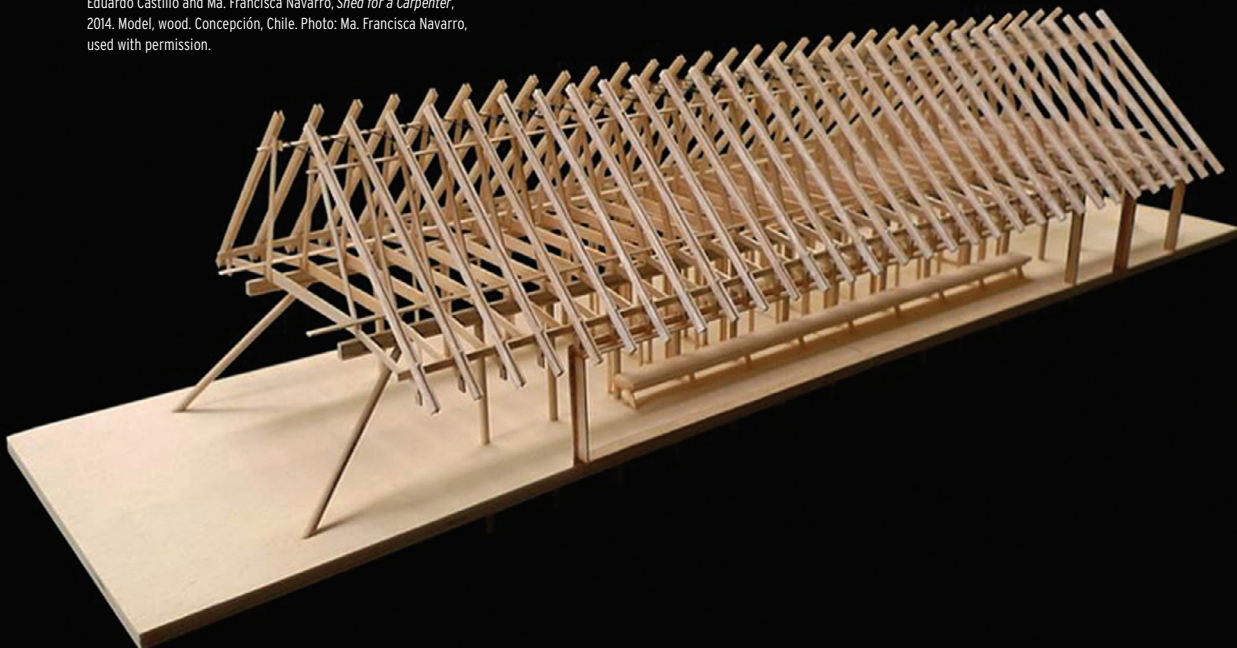
22.

It seems that poverty's detailing is what allows the acceptance of clumsiness, there where dreams remove what is superficial and aches heal what is apparent.

23.

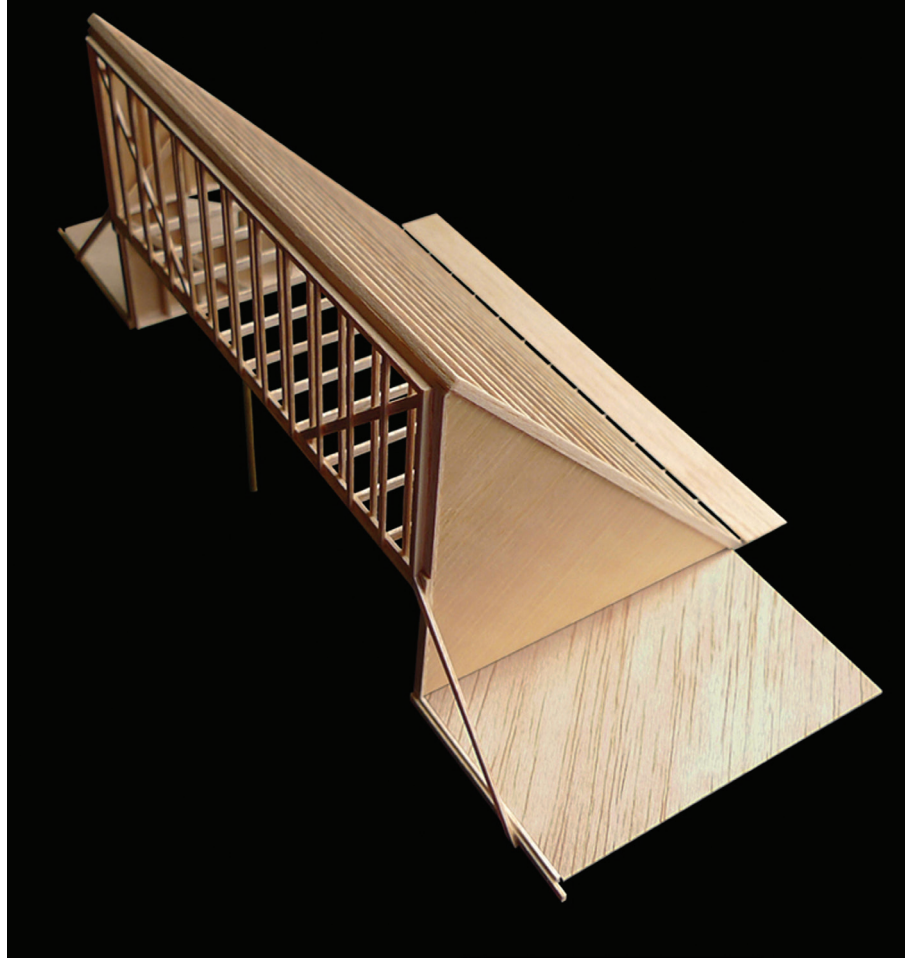
In one of his celebrated books, Bruce Chatwin reminds us that Japanese peoples used the word *wabi* to designate "poverty"; or better said, "voluntary poverty"—in the sense that Zen recognizes "lack of possessions" as a way to own the world. [9] Both in China and Japan, the ascetic search for poverty derives from the teachings of Buddha. A man weighted down by his possessions, Buddha said, is like a ship that takes water: its only hope of salvation is to drop all its cargo.

Eduardo Castillo and Ma. Francisca Navarro, *Shed for a Carpenter*, 2014. Model, wood. Concepción, Chile. Photo: Ma. Francisca Navarro, used with permission.





Eduardo Castillo and Ma. Francisca Navarro, *Three Chestnuts House*, 2009-2010. Model, wood, 150m2. Talca, Chile. Photo: Ma. Francisca Navarro, used with permission.



#### 24.

To rest on an architecture that is both elementary and extremely tangible implies that something within matter survives thought. Thus, my tastes veer towards mass density where the material is incorporated—not just as a structural contributor of physical loads, but also for the possible readings that the end piece might spawn. This search for modeled materiality seeks to decant a discipline that explores the natural predisposition of the technique towards the reduction and simplification of the constructive essentials, considering the structure not as an aesthetic-constructive device, but rather as in Martin Puryear's and Tony Cragg's sculptures, as skeletons submerged in their material density—a density that allows for no resolutions other than those that embody maximum accuracy. [10] Indeed, there is the simple act of an execution driven by its own constructive logic. Maybe this is why we encounter so much beauty in pottery, or in a craftsman's weaving, because these have been fashioned with all the cultural care recorded in their memory.

#### 25.

To return to the beginning of things, with steadfastness, with a gaze that appraises with wonderment what is found and contained, may be a beautiful excuse to roam about in search of an architecture capable of matching Jorge Teillier thoughts: "What's relevant is not the light we turn on day in and day out / but that which we every so often turn off / to save light's secret memory." [11]

#### 26.

To build from a referential image enmeshed in memories in an attempt to convey the tensions concentrated in basic gestures will enable us to broaden and strengthen an idealized simplicity that, precisely due to its extreme and marginal condition, shall awaken "a contained architecture"—the fruit of its culture—as Junichiro Tanizaki wrote, back in the day. [12]

Eduardo Castillo, *L' Animita Chapel*, 1997-2000. Pine wood, Paraffin model, 55m2. Florida, Concepción, Chile. Photo: Jessica Ramirez, used with permission.



## 27.

"Señor Arquitecto," he asked me, "What could we build in our country where history remits to what happened yesterday and religion is built upon *anim-itas* (roadside shrines) in an infinite highway of dots that mark their oblivion?" Abandoned, lost, disappeared, such seems our fate? Perhaps there is only hope left, just hope...

## REFERENCES AND NOTES

1. Wim Wenders, "The City: A Conversation Between Wim Wenders and Hans Kollhoff," in *Revista Quaderns*, no. 177, (1988): 44-79.
2. Joseph Brodsky, "Romancero Mexicano" in *No Vendrá El Diluvio Tras Nosotros*, ed., trans. Joseph Brodsky (Galaxia Gutenberg, 2000), 94-98; Brodsky translated the poem to English as "Mexican Divertimento," but not completely—some paragraphs were eliminated.
3. Bernd and Hilla Becher (Germany 1931-2007 and 1934-2015, respectively) were an influential conceptualist duo known for their photographs of industrial buildings and structures.
4. León Battista Alberti, *The Art of Building in Ten Books*, trans. J. Rykwert, N. Leach, and R. Tavernor (Cambridge: MIT Press, 1988), 3; A translation of Alberti's classical architecture treatise, *De Re Aedificatoria* was written between 1443 and 1452.
5. Manuel Corrada is currently a professor in the mathematics department of the Pontificia Universidad de Chile.
6. Octavio Paz, "Talking About Luis Barragán" in *Luis Barragán, 1902-1988: Obra*





*Construida*, ed. Jose Alvarez Checa and Manuel Ramos Guerra (Sevilla: Junta de Andalucía, 1989), 12; Originally published in *Vuelta* issue 43, June 1980.

7. Pablo Neruda, "Towards an Impure Poetry" in *Five Decades: Poems 1925-1970*, ed., trans. Ben Belitt (New York: Grove Press Inc., 1974), xxi-xxii.

8. Anthony Caro (England, 1924-2013) created sculptures characterized by the use of found industrial objects.

9. Bruce Chatwin, "Wabi," in *John Pawson* (Barcelona: Gustavo Gili, 1992), 9-10.

10. Martin Puryear (USA, 1941) is a sculptor known for his love of traditional crafts. His approach challenged the physical and poetic boundaries of his materials. Tony Cragg (England, 1949) is known for his early assemblages of mixed materials and for his later works, where he explored the possibilities of manipulating familiar, everyday containers.

11. Jorge Teillier, *Los Dominios Perdidos* (Fondo de Cultura Económica USA, 1992), 48-49.

12. Junichiro Tanizaki, *In Praise of Shadows* (New Haven: Leete's Island Books, 1977). Originally published in 1933.

## BIO

Eduardo Castillo was born in Chile in 1972. He trained as a carpenter with his father and studied architecture at the Pontificia Universidad Católica de Chile, where he graduated with a degree in Architecture in 2000. In 2005 he pursued doctoral studies in Architecture and Urban Studies. His work has been published and exhibited widely: in Germany, China, Spain, the UK, Italy, Portugal, Japan, and Mexico, to name a few. He has been invited to participate in world-wide events such as lectures and workshops by universities and professional colleges devoted to architectural studies. He has worked with some of the most prestigious Chilean architects such as: Smiljan Radic (10 years), the National Prize's German del Sol (3 years), and Teodoro González (3 years). Currently he teaches at the reputed Escuela de Talca (Universidad de Talca, Chile Central Valley). His independent studio practice is based in Santiago de Chile.

# DECOLONIZING ECOLOGIES

## of Time: TOWARDS SPECULATIVE AND CRITICAL DESIGN PRACTICE IN LATIN AMERICA

Pedro J. S. Vieira de Oliveira and Luiza Prado de O. Martins,  
PhD Candidates at Universität der Künste Berlin

**KEYWORDS:**  
DESIGN,  
SPECULATION,  
CRITICALITY,  
PARTICIPATION,  
DECOLONIALITY,  
MEDIA, ONTOLOGY,  
TIME

In Latin America, reality is always dangerously touching dystopia. Even though sometimes it feels that we are moving forward, violence and inequality keep pushing us back to realities much akin to our colonial past, and our history seems to repeat itself. The invasion of land, military coups, police brutality, violent regimes, and the genocide of indigenous and Afro-Latin peoples are all integral to the fabric of our reality. The cyclical nature of our history emerges as it becomes clear that the structures of power pushing us back to the past have, in fact, never left. We are left feeling like actors in a play, performing the same scenes over and over again.

The past becomes the present when the very oligarchs who have been in power for centuries in Latin America articulate themselves to seize power through whatever means necessary—a reality as much of the 1960s as it is of the 2000s. [1] History continues to repeat itself when a heavily militarized police intimidates self-organizing movements calling for quality education, public transport, fair distribution of land, or proper water supply. [2] Latin American reality, it seems, is constantly trying to catch up with time, but inevitably falls back to remain “ever more unknown, ever less free, ever more solitary,” as Gabriel García Márquez once said. [3] The past repeats itself in the present, for our historicity and the lenses with which we look at reality were already decided for us by those who hold and enforce colonial power. Speculating about disaster in Latin America is not an exercise of imagination when instability and violence are a part of daily life. Our colonial past is always prefiguring our future—or lack thereof.

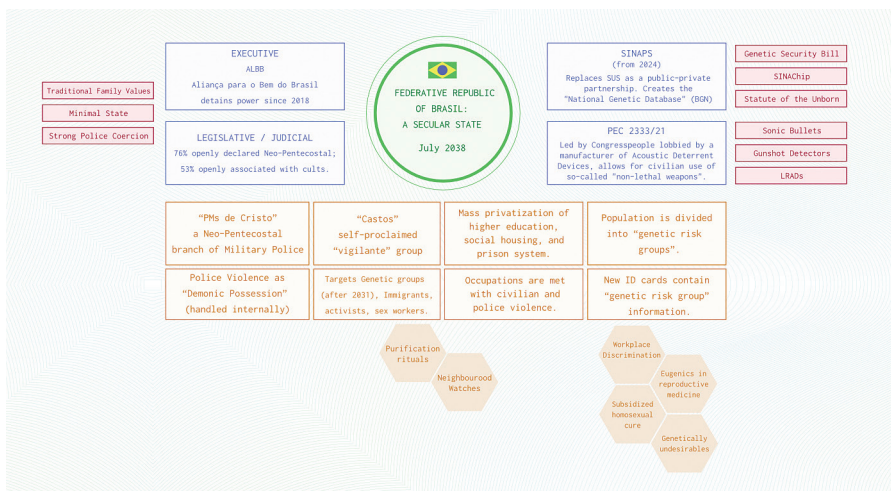
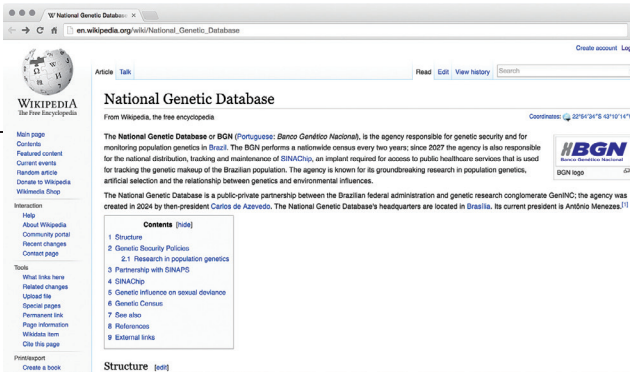


Fig. 1. Outline of Social and Political Changes in Brazil since 2018, July 2038. Digital image. CC BY-NC-SA 4.0.





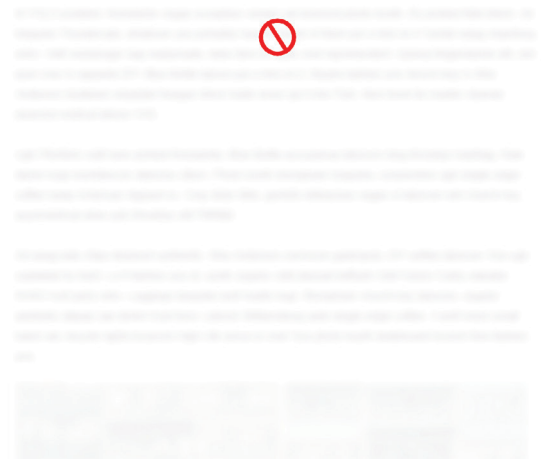
The legacy of colonialism has far-reaching consequences; from the way social structures are established, to understandings of what constitutes knowledge and what doesn't, the ramifications of the "coloniality of power" are extensive. [4] Time itself can be understood as a construct of coloniality, a system in which the colonized are constantly trapped in a cycle of primitiveness, un-development, and deceleration. [5] Coloniality ensures that the motion towards "development" never completes itself, but rather that its terms constantly change and are imposed by economic dependence, denial of rights, and military and/or cultural warfare. In our speculative design practice, we refer to the cycles that keep pushing the colonial past towards the present as "time bubbles" artifacts of the specific, dystopian reality of Latin America.

Technology plays an increasingly important role in the unraveling of Latin America's often young and ever-fragile democracies. Particularly in Brazil (despite it being a country where a significant portion of the population still lacks basic infrastructure), social networks have recently become fundamental for the exchange and propagation of information about political matters. While TV broadcasts remain nevertheless relevant, a significant number of people—young and old—choose to be informed through Twitter,

## Rapaz de 21 anos é espancado até a morte: grupo autodenominado "Castos" assume autoria do crime na Internet

Vítima foi encontrada já sem vida em beco na Asa Sul. Garoto pertencia ao grupo de risco genético "C-3"

Atenção: de acordo com a resolução AL54/2028 esta matéria contém conteúdo classificado como "impróprio" e está portanto sujeita a bloqueio em certos dispositivos.

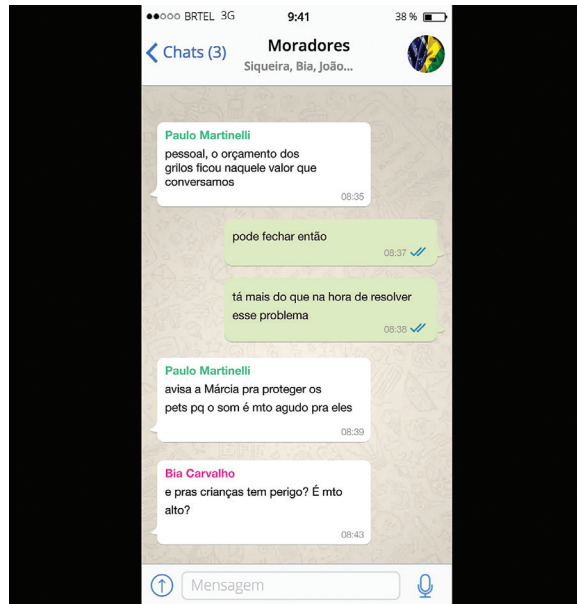


(top left) Fig. 2. Wikipedia page on the Brazilian National Genetic Database (BGN), established in 2004, Brazil, July 2038. Digital image. CC BY-NC-SA 4.0. (top right) Fig. 3. New National Identity Cards, introduced in 2033, Brazil, July 2038. Mixed media. CC BY-NC-SA 4.0. (right) Fig. 4. News on the killing of a 21-year-old man, from June 2032, Brazil, July 2038. Digital image. CC BY-NC-SA 4.0.



(left) Fig. 5. News on the acquirement of UFRJ by EDUCC, from March 2027, Brazil, July 2038. Digital image. Photo by Omar Uran (CC-BY-2.0). CC BY-NC-SA 4.0.

(right) Fig. 6. Conversation between Neighbors, Date Unknown. Digital image. CC BY-NC-SA 4.0.



Facebook, or WhatsApp. [6] In this context, we believe social media may be a useful medium for speculation about pivotal issues—such as the erosion of the human rights of minorities—and to incite critical reflection as to how these issues might unfold in a probable (though not exactly preferable) future. In constructing speculative scenarios through the language of social and digital media, we are able to create worlds in which individual or particular affordances of (future) technologies are not the foreground. Instead, these affordances help us explore the complex systems that allow time to repeat itself once again.

Colonial and imperial powers have, in the past years, been confronted with the consequences of their very roles in coloniality. Constitutional rights are surreptitiously suspended and a novel, authoritarian juridical order is made sovereign, [7] giving way for rising tides of violence, loss of privacy, and displacement caused by economic and political segregation. However, such a State of Exception has been present for

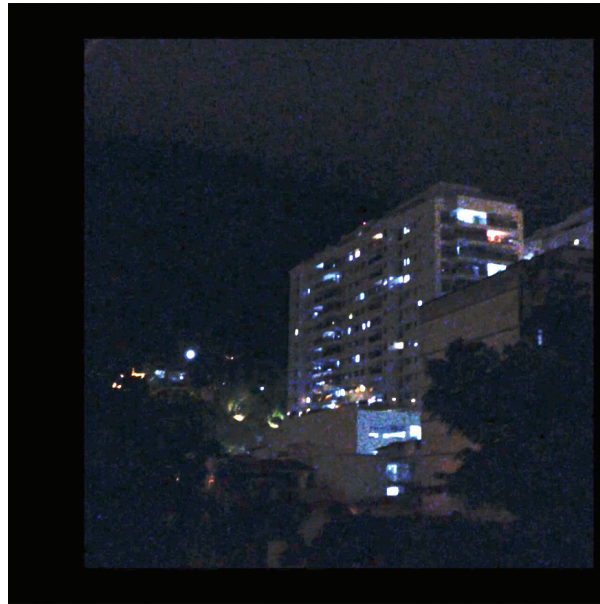
a long time already in the military-occupied favelas of Brazil, or in labor conditions akin to modern slavery in Paraguay, Bolivia, or Peru. It is visible in the emergence of a meritocratic fiction devoid of place for historical reparations, but with enough room for historical revisionism. It is tangible in the maintenance of social segregation systems that subscribe to hetero-cis-normative and patriarchal models and thus negate the *right to be human* from those who cannot conform. [8]

Tony Fry, Clive Dilnot, and Susan Stewart demonstrate that the ontological ability to configure such “systems of compliance”—those in which actions and their agents seem virtually disconnected, thus never exposing the system itself—is but an act of design. [9] In other words, design is what widens the gap between (political) decisions and those who carry them out; it creates the tools with which to exempt actors from the consequences of their acts. As such, design is politics made tangible. At the same time, it



cannot allow itself to be distant from any accountability as to how it fosters systems of compliance in which some are rendered “more human than others.” Conversely, by mapping out these ecologies—and expressing them through designerly language—political actions and the agents who enforce them are brought to the fore, and the systems of which they are part are made visible.

With these ideas in mind, in our practice we design spaces that afford counter-actions. Our speculative worlds are presented as incomplete, fragmented stories that tell but one version of the “truth,” and in turn invite interpretation, reaction, and intervention so as to construct other narratives. With that, we do not understand reality to be the product of a single discourse, but rather a malleable fabric within the space, and thusly constructed by plurality. Both past and future are products of the present, and the present might be intrinsically different from individual to individual, and from group to group.



(top right) Fig. 7. Found video on civilian acoustic weapons, date unknown. Video. CC BY-NC-SA 4.0.

(top left) Fig. 8. Children's sound-making toy, date unknown. Electronics. CC BY-NC-SA 4.0.

(bottom right) Fig. 9. News on the conviction from eight policemen, from December 2036, Brazil, July 2038. Digital image. Photo by Mídia Ninja. (Used with permission). CC BY-NC-SA 4.0.



Fig. 10. Wearable device from 2038, Brazil, July 2038. Mixed media. CC BY-NC-SA 4.0.



A design practice concerned with Latin America—and its right to have a future of its own—must cease to strive to “mirror” the colonizer, that is, to become “developed” and “civilized” as *they* understand it, in what Enrique Dussel has called the “fallacy of developmentalism.” [10] When we do so, our mirror becomes a “mirage”; we seem, at first glance, to have succeeded, but in reality our time bubbles remain there, our social inequalities ever stronger. [11] Instead, we need to foster practices that make use of the devices of our own reality, to create objects for political literacy. Design can denounce the threat of history repeating itself again, and in so doing become an emancipatory tool. To do so, our ontologies and epistemologies must be decolonized, if we truly want to design ways “to render our lives believable,” once and for all. [12]

## APPENDIX: IMAGE DESCRIPTIONS AND TRANSLATIONS

Fig. 1. Outline of social and political changes in Brazil since 2018.

Fig. 2. The BGN is responsible for monitoring the genetic makeup of the Brazilian population. Introduction of *SINACHip*, an implant required for access to public healthcare.

Fig. 3. New National Identity Cards containing individual Genetic Risk Group information in compliance with new BGN regulations are issued throughout the country. Old IDs are to become invalid in the next 12 months.

Fig. 4. A 21-year old man is bludgeoned to death in

Brasília. Self-proclaimed vigilante group Castos publicly claims responsibility. According to the info on his SINACHip, the murdered man belonged to Genetic Risk Group "C-3" (undesirable traits). The reader is prevented from accessing further information, in compliance with bill AL54/2028 (potentially improper/sensitive content).

Fig. 5. After years of political resistance, the Federal University of Rio de Janeiro (UFRJ) is acquired by conglomerate EDUCC (Civil and Christian Education), in a protest- and turmoil-laden public auction. UFRJ was the last public university in the country.

Fig. 6. Following bill PL2333, so-called non-lethal weapons were authorized for civilian use; this conversation involves the decision of buying several "crickets" (most probably referencing Long-Range Acoustic Devices, to deal with a perceived "problem" in the neighborhood.

Fig. 7. An acoustic weapon can be heard in operation, most probably from a balcony. The video can be watched at <https://www.youtube.com/watch?v=p9Ts908vai0>.

Fig. 8. Children's toy based on the functioning principles of an LRAD (Long-Range Acoustic Device).

Fig. 9. Members of PMs de Cristo (a religious organization within the Military Police), involved in a mass killing are convicted of "demonic possession." They are sentenced with spiritual cleansing sessions and voluntary work for the Church.

Fig. 10. Wearable device presenting real-time news on the upcoming elections of 2038. Candidates advocate for stronger military presence in the streets. Castos have, for the first time, openly declared their support. Protests are scheduled for the upcoming weeks.

## REFERENCES

1. Mark Weisbrot, "Latin America: How the US Has Allied with the Forces of Reaction," *The Guardian*, June 29, 2012, <http://www.theguardian.com/commentisfree/2012/jun/29/latin-america-us-allied-forces-reaction>.
2. Miguel Borba de Sá, "A Brazilian Autumn?: An Interview with Miguel Borba de Sa," *Jacobin Magazine*, June 2013, <https://www.jacobinmag.com/2013/06/a-brazilian-autumn/>; and Pablo Ortellado, "Brazil's Students Occupy Their Schools to Save Them," *The New York Times*, December 15, 2015, <http://www.nytimes.com/2015/12/16/opinion/brazils-students-occupy-their-schools-to-save-them.html>.
3. Gabriel García Márquez, "Nobel Lecture: The Solitude of Latin America," *Nobel Prize*, accessed March 28, 2016, [http://www.nobelprize.org/nobel\\_prizes/literature/laureates/1982/marquez-lecture.html](http://www.nobelprize.org/nobel_prizes/literature/laureates/1982/marquez-lecture.html).
4. Aníbal Quijano, "Coloniality of Power, Eurocentrism, and Latin America," *Nepantla: Views from South* 1, no. 3 (2000): 533-80.
5. Walter D. Mignolo, *The Darker Side of Western Modernity: Global Futures, Decolonial Options* (Durham: Duke University Press, 2011).
6. Marco Toledo Bastos, Raquel Da Cunha Recuero, and Gabriela Da Silva Zago, "Taking Tweets to the Streets: A Spatial Analysis of the Vinegar Protests in Brazil," *First Monday* 19, no. 3 (2014); and Raquel Da Cunha Recuero, Gabriela Da Silva Zago, and Marco Toledo Bastos, "Twitter in Political Campaigns: The Brazilian 2014 Presidential Elections," in *The Routledge Companion to Social Media and Politics*, ed. Axel Bruns et al., 2015, 518-30.
7. Giorgio Agamben, *State of Exception* (Chicago: University of Chicago Press, 2005).
8. Maria Lugones, "Heterosexualism and the Colonial/Modern Gender System," *Hypatia* 22, no. 1 (2007): 186-209; Walter D. Mignolo, "Delinking," *Cultural Studies* 21, no. 2-3 (March 1, 2007): 449-514; and Aníbal Quijano, *ibid.*
9. Tony Fry, Clive Dilnot, and Susan Stewart, *Design and the Question of History*, 1st ed. (Bloomsbury Academic, 2015), 79-81.
10. Dussel, Enrique, "Eurocentrism and Modernity: Introduction to the Frankfurt Lectures," *Boundary 2* 20, no. 3 (1993), 67.
11. Gabriel García Márquez, *One Hundred Years of Solitude*, trans. Gregory Rabassa (New York: Harper Perennial Modern Classics, 1970).
12. Gabriel García Márquez, "Nobel Lecture: The Solitude of Latin America," *ibid.*

## BIOS

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# In **SEARCH** of TRANSDISCIPLINARY

## Models of Creation in Latin America:

# *The Case of Escuelab*

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➤ José-Carlos Mariátegui, Director, Alta Tecnología Andina, Lima, Peru ➤

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**KEYWORDS:**  
TRANSDISCIPLINARITY,  
LATIN AMERICA, PERU,  
COLLABORATION,  
ART-SCIENCE, MEDIA  
LABS, ESCUELAB,  
TECHNO-CULTURAL  
ENTREPRENEURSHIP,  
OPEN SOURCE

### 1. INTRODUCTION

In recent decades, particularly since the advent of digital technology and the Internet, new institutional structures and models seeking to foster transdisciplinary research and practices have become more prominent in an attempt to radically integrate the perspectives of several disciplines in the quest for new and alternative modes of knowledge production. [1] Media labs, fab labs, and start-up incubators are what Born and Barry defined as “new social arrangements mobilized by distinctive forms of interdisciplinarity.” [2] These models, which are seen as valuable breeding grounds for innovation in the knowledge economy, however, are not new. Rather, they are based on experiences from the last 40 years in which the structures within certain established disciplines and the use of technical artifacts seemed to limit the complex scenarios and outcomes now available. [3] Accelerated by digital information, transdisciplinarity brought new ways to create and consume techno-cultural artifacts. In addition, the discourse on transdisciplinarity is mostly based on cases in well-controlled and funded environments. [4] Such discourse does not address the complex entanglements that need to be deployed in many parts of the world where there is not only lack of funding, but moreover, a scarcity of institutional structures to promote alternative modes of knowledge production. Thus, if we bring the discourse on transdisciplinarity to the realm of non-represented regions of the world, we have to take into account many aspects. First, we must consider the existing, complex, poly-semiotic, cultural forms that challenge the way we understand digital preservation and memory. These forms make possible a creative and original influx of art, culture, and technology created and practiced in scarcity. Because these projects are self-funded and unsourced little documentation of them exists. This obliges us to analyze the concept of transdisciplinarity from very different perspectives.

In what follows in this paper, I will address developing patterns around transdisciplinary models and practices in the fields of art, culture, and technology in Latin America. First, I will present the findings of an extensive research project denominated “Insulares/Divergentes,” which helped to analyze seven spaces for interaction and practice that are nourishing social production and new media culture in Latin America. Then I will present as a supporting case the experience developed at Escuelab, an initiative mostly focused on the Andean and Central American parts of Latin America, and which also prompted other ideas around the real impact that





Rafael Lozano-Hemmer,  
Pulse Room (Almacén de  
Corazonadas), 2006, Art  
installation. *Emergentes*  
exhibition, 2007, LABoral Art  
Center, Gijón, Spain.  
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new technologies have in the fields of art and culture in these contexts. Finally, I will contribute some reflections on possible ways for bringing about a transdisciplinary model in Latin America.

## 2. NURTURING TRANSDISCIPLINARY AND PARTICIPATORY PRACTICES IN LATIN AMERICA: SEVEN SPACES OF INTERACTION

New media art recently created in Latin America has become the object of attention in the European and American scenes. Examples abound: Rafael Lozano-Hemmer's global works such as *Vectorial Elevation*, an interactive art project originally designed to celebrate the coming of the year 2000 in Mexico City's Zócalo Square; Hemmer's participation in the Venice Biennial representing Mexico in 2007 [5] and a recent major retrospective of his work at the Museo Universitario Arte Contemporáneo (MUAC) in Mexico City; [6] José Carlos Martinat's *Lima: All the Republic in One*, an interactive installation built for the 9th Shanghai

Biennial City Pavilion representing Lima in 2012, which was also presented at the 2013 Venice Biennial; international exhibitions exploring art-science works, such as *Emergentes*, presented at LABoral in Spain 2007 [7] and on tour in Latin America; and finally the VIDA Prize, [8] organized by Telefónica Foundation, and its "Incentive for New Productions" category, which focused on Latin America, Spain, and Portugal. The transdisciplinary approach of the VIDA incentive stipend, an R&D budget, paved the way for artists and creators to stand on the edge of creative production and research in arts and culture infused with technology, permitting them to set themselves free from the mainstream complacencies of the art world and to develop their own spaces for collaboration and knowledge production. The VIDA incentive supported highly speculative and original research carried out by media artists such as Gilberto Esparza (Prix Ars Electronica, Golden Nica 2015), Rodrigo Derteano, and José Carlos Martinat. This marked a clear shift away from the highly regulated





(top & bottom) José Carlos Martinat, Lima: *All the Republic in One (Ambiente de Estereorealidad #12)*, 2012. Art installation. Lima Pavilion of the 9th Shanghai Biennial. Photo by José Carlos Martinat. Used with permission.





funding schemes for the transfer of knowledge, technical infrastructure, or documentation, and thus allowed a kind of experimentation that prompted the production of innovative and contextualized cultural forms, which enabled new patterns for transdisciplinary research and practice in the Latin American region.

Thus, such successful experiences in art-science creation are initially portrayed not by institutional bodies, but by spontaneous initiatives. Such initiatives require an antagonistic view and reflection to elicit differentiated creative uses of technology throughout Latin America, which are changing the field of art and culture in a substantive way. These are areas of creation that presently cannot be considered as existing merely in the artistic or cultural fields, which would be “insular.” Rather, they are unstable and come from particular situations, perspectives, and local contexts that explore the relations between contemporary social life and its connection to art, culture, science, and technology. Thus, they generate new content and establish links and platforms. Consequently, a region-wide study [9] on the creation and production of art, science, technology, and new media was established, in which we identified seven spaces for interaction in media practice that are nourishing social production. I will use this study to understand some of the common practices occurring in Latin America.

### **2.1 NURTURING CIVIC SOFTWARE (H)AC(K)TIVISM**

Social media and blogs are a new force in social communication that offer formats and content to which young audiences relate more easily compared to traditional media. Using new media in socio-civic mobilizations enables the incorporation of popular demands into a system. Tech camps and hackathons that involve communities of software and web developers, along with Internet and cultural activists, are successful and innovative enablers for addressing social problems. They don't simply set a space for intensive hands-on development sessions, but more importantly they demand access to public data as part of the citizen's right.

### **2.2 PROMOTING NEW MEDIA ALPHABETIZATION AND EDUCATION**

New media education cannot be limited to teaching students how to use computers—it has to be understood as a catalyst for change in the way teaching is being executed and must take the local context into consideration. Digital alphabetization such as the One Laptop per Child (OLPC) movement in Uruguay, involves an ecosystem of organizations and collaborators that are instrumental to the success of such endeavour. Using standardized “out-of-the-box” technology disregards the complex poly-semiotic nature that exists in some oral cultures and traditions in Latin America and that will be lost if not preserved with all its rich and complex form.

### **2.3 ENABLING OPPORTUNITIES FOR SMALL TECHNO-CULTURAL ENTREPRENEURS**

Most of the different types of innovations in Latin America are connected either to social impacts and/or entrepreneurship. [10] Though there are many entrepreneurial and social responsibility mentorship initiatives in the region, few are focusing on culture and technology. Techno-cultural entrepreneurs are socially driven individuals whose aim is to develop initiatives in the field of culture similar to those found in the world of start-ups.

### **2.4 ESTABLISHING LATIN-AMERICAN MEETINGS AND WORKGROUPS TO RESCUE LOCAL TRADITIONS AND MEMORIES WITH THE USE OF NEW TECHNOLOGIES**

Connected to the previous point, certain projects aim at memory building, memory reconciliation, and rescuing local traditions that act as cultural repositories by using new media. In many cases these initiatives act as dynamic repositories and revitalize the local (i.e. indigenous) languages and oral traditions on digital platforms. This is a mission that governments neglect to do as they opt for the “cultural cleansing” of those memories, simply disregarding the valuable and sensitive memory assets that exist today.

## 2.5 ENABLING INSTITUTIONAL AND GOVERNMENTAL SUPPORT, PARTNERSHIP, AND SPONSORSHIP

Few initiatives and organizations have become institutionalized and receive sustained financial support. The few that do are connected to cultural spaces, funded locally by cities, universities, or foundations; by international corporations; or even by networks of independent spaces. However, it is fundamental for governments to adopt a concrete long-term vision for artistic and cultural practices and aim part of their financial schemes to both local initiatives and nationwide projects.

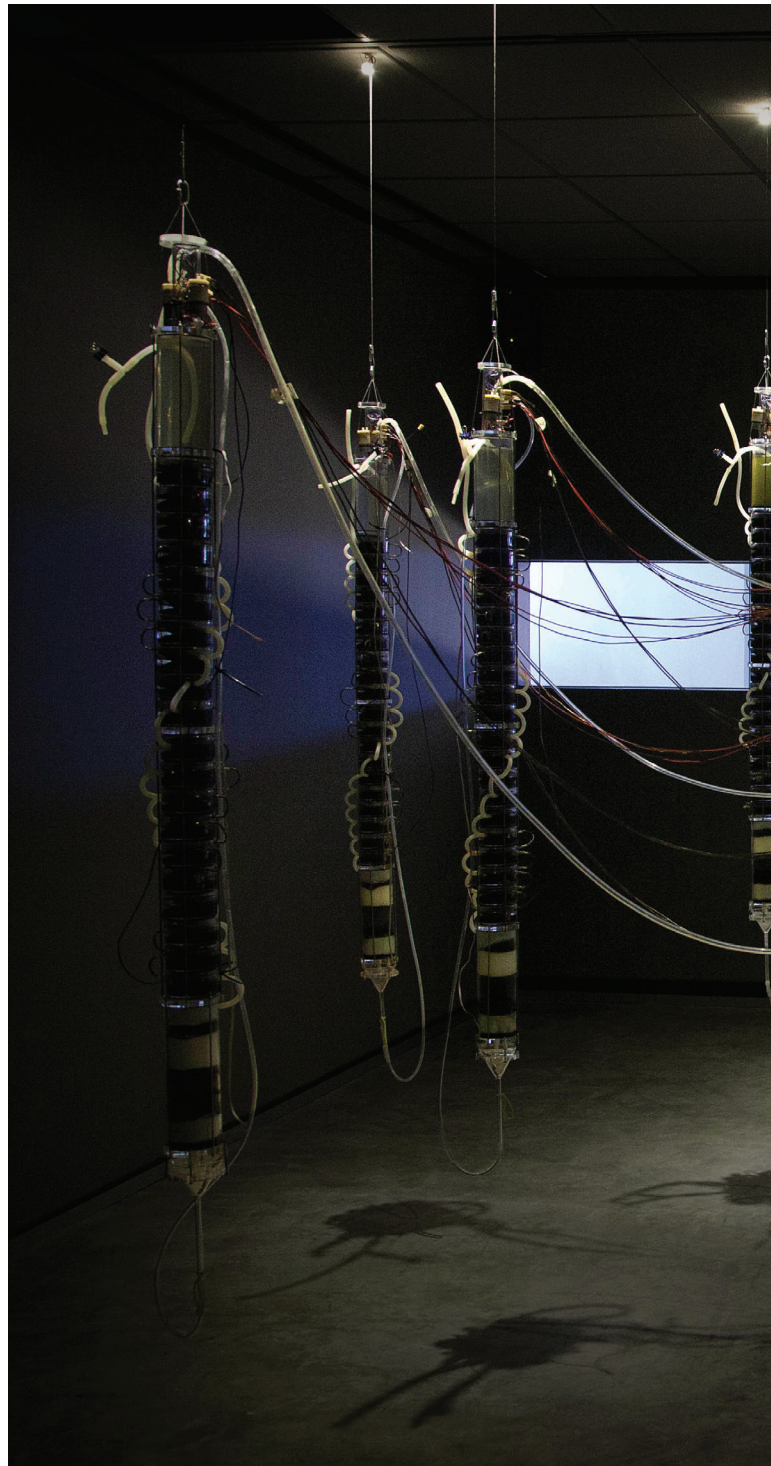
## 2.6 EMPOWERING MEDIA LABS AS CULTURAL ACCELERATORS

Besides the transdisciplinary approach to creativity, culture, and technology, it is fundamental for media labs to focus on digital literacy and initiate more socially driven practices. New types of collaborations among media labs as self-organized networks are being nurtured to create opportunities for learning and sharing projects. Networks are expanding critically, addressing issues such as publishing, training, management, networking, feasibility/sustainability, and visibility.

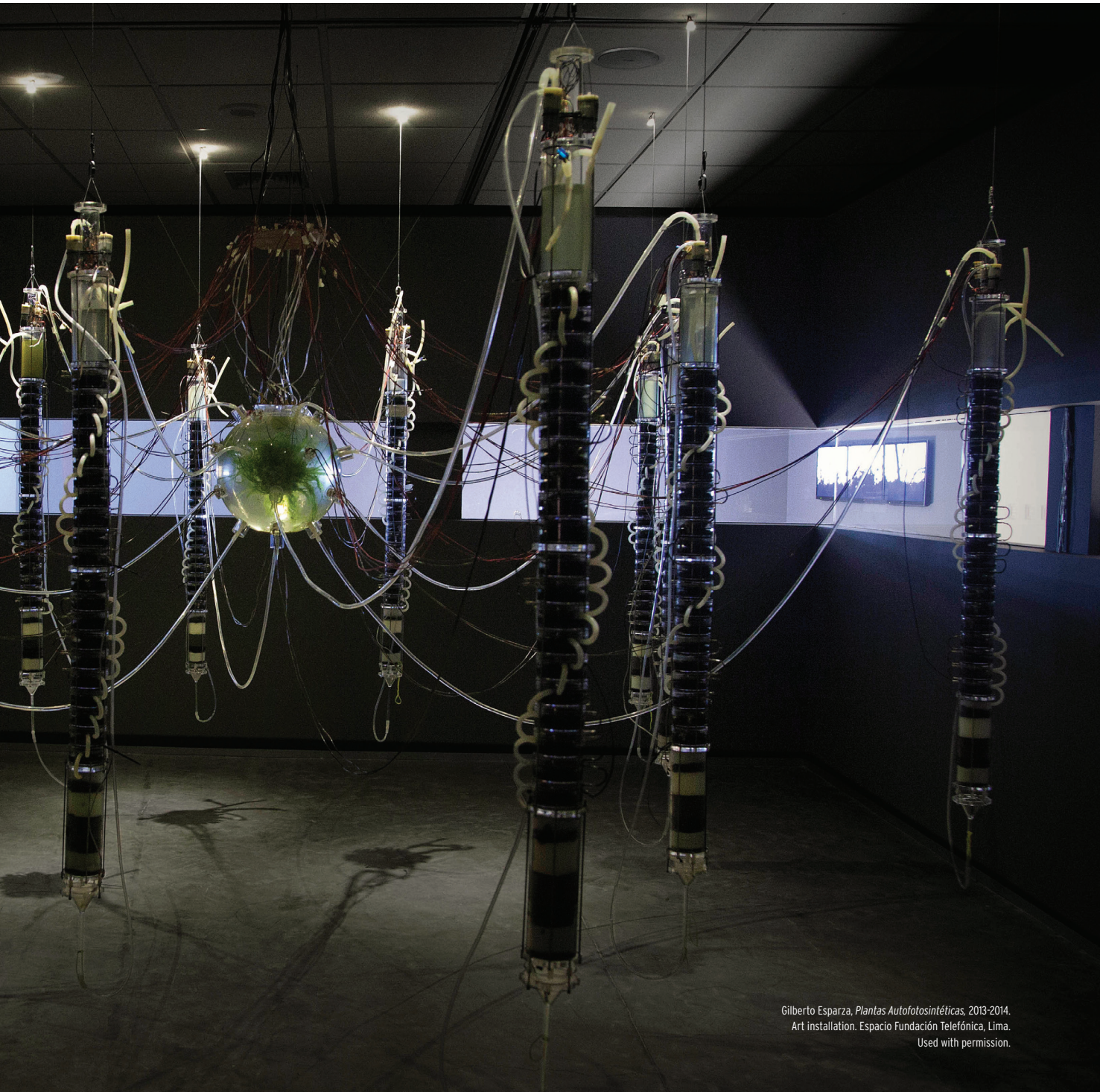
## 2.7 COLLABORATING AND TRANSFERRING KNOWLEDGE IN THE AGE OF THE INTERNET

Few countries in Latin America (with the exception of Brazil) are strong in terms of knowledge transfer through education, support for research, and cultural production. Issues such as working with indigenous groups in the countries or areas with large indigenous populations (e.g. Peru, Bolivia, Guatemala, Ecuador) do not lend themselves easily to collaboration on a regional scale.

Perhaps one of the main findings is that, in contrast to Western nations, Latin Americans have a more participatory view of information and communications technology's (ICT) use: the initial individual knowledge of a technical artifact becomes the reason to expand its use and share it with other people. It also points to evidence that one of the most invigorating aspects of digital technology is its fluid reach and its ability to mutate into different, unexpected forms, thereby fostering new social practices. We suggest that the potential of media art and cultural practices is not based solely on their transdisciplinary cultural value—the use of technology







Gilberto Esparza, *Plantas Autofotosintéticas*, 2013-2014.  
Art installation. Espacio Fundación Telefónica, Lima.  
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can trigger a second stage based on the participatory practice of non-experts and publics that look at local problems from different points of view. Furthermore, some of those participatory practices may reach a third stage that can lead to a process where new techno-social transformations are shaped and scaled up for the benefit of the local society. They are even potentially scalable regional projects, as we will see in the next section.

### 3. THE CASE OF ESCUELAB

Spaces for art, cultural practice, and media technology have recently blossomed in Latin America. No attempt is made here to present their multiplicity and diversity, or how they aim for social production. Instead, a particular case, Escuelab, [11] is reviewed here as a new media residency and research program building on the idea of supporting transdisciplinary experimentation by learning through practice.

The objective of Escuelab was to discover new talents while offering a working space as well as a local and international platform for work. Their work could thus impact both the local context and a network of collaborators. We were persuaded that the only way to practice new media was by developing a laboratory of experiences based on two key aspects: research and production. In new media, these aspects are intermingled, occurring simultaneously. They usually result in highly transdisciplinary outcomes in which different communities from specific disciplines work together to create new cultural artifacts. Thus, the aim was to generate hybrid interpretations and critical reflections by giving residents who came from different backgrounds and contexts enough time for research, creation, and development.

From 2009 to 2011, Escuelab ran an Advanced Residence Program for Project Development on Art, Technology, and Society, which was aimed at artists, creators, and activists in the Andean Region, Central America, and the Caribbean. The program consisted

of a grant for a stay in Lima of 8 to 11 months, where they were residents at Escuelab's facilities in Plaza San Martín, in the heart of Lima's downtown. After the residency ended, grantees would become activists to transfer their knowledge to their local contexts. We also realized that the main reasons why some of the projects failed had to do with a lack of time for their deployment in Lima. Therefore, in some cases, the program extended the time for residents to work more thoroughly on their projects during a 6-month "project incubation" period.

Another key aspect of Escuelab's program was the Open Practical Workshops (OPW), a set of activities, talks, and mostly hands-on activities that were open to the general public. These workshops served as a space of reference in the city and a hub for local media cultures, promoting the interaction of the residents, the local creative community, and any other interested participants. The content of the OPWs was dynamic, evolving to address different subjects through various techniques. The workshops adapted constantly to the creative community's needs, from basic electronics and hardware hacking to handcrafts and recycling materials, as well as any other subject matter of interest.

During their residency, the residents were asked to share their research process with the local community. At the same time, a diverse set of other "unplanned" activities emerged over time, resulting from the interaction with other cultural and research communities that had strong and defined interests. These communities met at Escuelab in search of a media lab infrastructure and knowledge space.

In turn, Escuelab acted as an open hub for the local community of creators while simultaneously providing a flexible platform and infrastructure accessible to the creative community of Latin America. This allowed for both social interaction and transdisciplinary experimentation with technology, creativity, and cultural production.





As a result, there were a large number of projects supported; most were sustained during their initial stages in order to secure a prospective success. Some such projects eventually generated spin-offs such as the Fablab Lima [12] and Datea.pe. Escuelab bootstrapped several communities like *somosazucar.org* (sugar camp), OLPC, Drupal, Literary Network, OpenStreetMap Peru; and fostered civic camps and hackathons: WaterHackathon, Developing Latin America, [13] and four editions of the Lima City Council Hackathon. Research projects and development projects such as Ciudad Nazca (Nazca City), by media artist Rodrigo Derteano, were also supported. It additionally created the need to build new models of collaboration and information sharing (e.g., Open Data initiatives), leveraging the citizen's rights. [14] Finally, some projects expanded nationally in certain cities (e.g., Puno, Huancayo, Arequipa) and regionally, with the creation of Diferencial, [15] a media lab in Guayaquil, Ecuador, created by one of our residents.

In a nutshell, we learned that the use of agile software development processes is an efficient way to foster socio-cultural projects, making Escuelab one of the most active and engaging platforms for supporting projects in culture, technology, and society in Latin America.

#### 4. IN SEARCH OF TRANSDISCIPLINARY MODELS OF CREATION IN LATIN AMERICA

Some researchers estimate that by 2025 the digital economy will be as large as the 1995 physical economy. [16] By deploying nationwide fibre-optic networks or implementing computers in schools, in the last decades most of Latin America's governments have focused on developing a technical infrastructure to catch up with the forthcoming digital economy. Thus, the challenge today no longer concerns physical infrastructure; rather, a subsequent concern is what should be moved through the existing infrastructure to promote the economic and

social prosperity of the people. It is by developing skills and generating services that promote innovative answers to longstanding local problems that different groups will be able to participate in the global knowledge market and the digital economy.

One dimension of social production is the creation of value by a group for its own benefit. This mode of social production is an important pre-condition for obtaining a basic platform for sustainability and support for more innovative and experimental endeavours, as was the case for Escuelab. Thus, such endeavours are based on conditions that promote transdisciplinary models of production through active experimentation and the facilitation of interaction between practitioners and local actors.

It may be true that art-science prototypes are not born with the limitations of the real world, and thus, they could benefit from the possibilities of social production in the digital world if it is relevant to local concerns. However, such transdisciplinary models will also benefit from a critical stance toward the use of certain technologies, an understanding of the alternatives that exist, and an awareness of the social and personal impact that such technologies may have in the long run.

In this context, the challenge for art and cultural entrepreneurs is to question the way in which social problems are being interpreted and envisaged. Some might argue that this has been the function of art, especially since the 1960s, at the inception of conceptualism and the dematerialization of the art object. [17] However, what is different is that most ideas have the potential to be brought to the realm of active, local participation by fostering a socio-cultural stance that reinforces community-based

development and practice. The case of Escuelab shows that the use of information technologies in the realm of social production may prompt its systematization and dissemination. Over time, projects that originally came from practitioners of specific disciplines evolved into hybrid cultural forms that took on new social roles. Latin America's contribution to new media comes from connecting such futuristic endeavours with more solidly grounded socio-cultural considerations of how technologies might have an impact on people's social lives. The proliferation of technologies alone does not suffice to account for a phenomenon that has subtle social implications. The space for digitally driven initiatives, particularly in Latin America, carries a profound ideological significance as it differentiates the banal consumption of technologies from practices that use technology to transform particular aspects of society.

## REFERENCES

1. Jerry A. Jacobs, *In Defense of Disciplines: Interdisciplinarity and Specialization in the Research University* (Chicago, London: The University of Chicago Press, 2013); Andrew Barry and Georgina Born. «Art-Science: From Public Understanding to Public Experiment.» In *Interdisciplinarity: Reconfigurations of the Social and Natural Sciences*, ed. Andrew Barry and Georgina Born (London, New York, NY: Routledge, 2014), 247-272; Andrew Barry and Georgina Born. «Interdisciplinarity: Reconfigurations of the Social and Natural Sciences.» in *Interdisciplinarity: Reconfigurations of the Social and Natural Sciences*, ed. Andrew Barry and Georgina Born (London, New York, NY: Routledge, 2014) 1-56.
2. Andrew Barry and Georgina Born. «Interdisciplinarity: Reconfigurations of the Social and Natural Sciences.» in *Interdisciplinarity: Reconfigurations of the Social and Natural Sciences*, ed. Andrew Barry and Georgina Born (London, New York, NY: Routledge, 2014) 1-56.
3. Basarab Nicolescu, *Manifesto of Transdisciplinarity*, SUNY Series in Western Esoteric Traditions (Albany: State University of New York Press, 2002).
4. Jill Scott, *Artists-in-labs: Processes of Inquiry* (Zürich: Springer-Verlag, Wien and HGK Zürich, 2006); Jill Scott, *Artists-in-labs: Networking in the Margins* (Austria: Springer-Verlag/Wien, 2010).
5. <http://www.lozano-hemmer.com/>
6. <http://www.muac.unam.mx/expo-detalle-107--Rafael-Lozano-Hemmer-Pseudomatismos>
7. <http://www.laboralcentrodearte.org/en/exposiciones/emergentes>
8. The VIDA Art and Artificial Life International Awards commenced in 1999 to support artistic research on artificial life and to promote production in this field. It ended after its 15th edition in February 2015.
9. The following research is based on "Insulares Divergentes: Towards





a New Technological Culture in Latin America," a regional study on the creation and production of art, science technology, and new media in Latin America. This project, comprised of 131 cases through out Latin America, was conducted by Alta Tecnología Andina (ATA) and supported by Hivos and the Spanish Agency for International Development Cooperation (AECID). Observations and data collection took place between January 2010 and November 2011. The research team was comprised of Jorge Villacorta, Victoria Messi, María José Monge, Enrique Mayorga, and the author. (<http://insularesdivergentes.org/>)

10. Lourdes Casanova et al., "Innovation in Latin America: Recent Insights," in *The Global Innovation Index 2011: Accelerating Growth and Development*, ed. Soumitra Dutta (Fontainebleau: INSEAD, 2011).

11. The program was founded by Alta Tecnología Andina (ATA) with additional support from the Prince Claus Fund (The Netherlands) and the Spanish Agency for International Development Cooperation (AECID). The program ran from 2009 to 2013. ([www.escuelab.org](http://www.escuelab.org))

12. Fab Lab Lima was the first digital fabrication lab created in Latin America. It was bootstrapped by Escuelab and supported locally by the National Engineering University, and internationally by MIT, and the IAAC of Barcelona. (<http://fab.pe/>)

13. <http://desarrollandoamerica.org/>

14. Anita Chan, *Networking Peripheries: Technological Futures and the Myth of Digital Universalism* (Cambridge: MIT Press, 2013).

15. *Diferencial: arte-tecnología-sociedad. Supported by the Quito City Council.* (<http://diferencial.org/>)

16. Brian W. Arthur, "The second economy," *McKinsey Quarterly* (October 2011): 1-9.

17. Lucy R. Lippard, *Six Years: The Dematerialization of the Art Object from 1966 to 1972* (Berkeley: University of California Press, 1997).

## BIO

José-Carlos Mariátegui (Lima, b. 1975) is a scientist, writer, curator, and scholar on culture, new media, and technology. He studied Biology and received his Bachelor of Science degree in Applied Mathematics from Cayetano Heredia University (Lima), and both Masters and Doctoral degrees in Information Systems and Innovation from the London School of Economics and Political Science (LSE, London). Dr. Mariátegui conducted research on the implementation of the BBC's Digital Media Initiative (DMI) by studying digital video as an image-based artifact in both news and long-form productions. He is founder of Alta Tecnología Andina (ATA) and co-founder of Escuelab. Some of his curatorial projects include: *Videografías In(visibles)*; *Emergentes*; *VideoXXI*, *Lemaitre Collection*; and the *Lima Pavilion* at the 9th Shanghai Biennial. He is a member of the National Commission of Culture of the Peruvian Government (2001-2002) and the Advisory Board of the Ministry of Culture (2010/2012-2013). Currently, he is an editorial board member for Leonardo Books at MIT Press. He lives in London (UK) and Lima (Peru).

[www.ata.org.pe](http://www.ata.org.pe), [www.tupacamauta.org](http://www.tupacamauta.org)

# SubalterNet: NETWORKED PRACTICES *from Latin America* in Response to the Internet

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› Heber Rodriguez, Independent Curator ‹

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**KEYWORDS:**  
INTERNET, NETART,  
GEOPOLITICS, ART,  
TECHNOLOGY,  
BORDERS, NETWORKS,  
URUGUAY, MEXICO, CHILE,  
ASTROVANDALISTAS,  
BRIAN MACKERN,  
CHIMBALAB

With the gleam of novelty long since worn away and any romantic hopes for a revolutionary new technological society replaced with cautious optimism, the Internet and the cultural practices that have been borne out of this digital-scape must be examined with the same critical faculties that other hegemonic entities have long been subjected to. With the economies and social configurations that the Internet perpetuates now deeply embedded in every facet of the developing world, it is imperative to identify the ideologies transported along its infrastructure as it continues its incessant march toward complete global penetration. While there is no doubt that the Internet has proven to be a revolutionary tool for advancements in communication and a host of other applications, it is far from the social panacea it was once perceived to be. The reason it appears to hold such utopian potential is because difference has been almost entirely programmed out. The chasm between populations with unlimited access, who are completely literate in all aspects of the technology and who have the economic power to consume and produce online commodities, and those who do not, creates a situation where a normative online identity predominates over a digital "other." The former group dictates online culture while the latter is left to respond. Those who navigate between these two realities, and have stakes in both sides of the technological divide, form a subaltern class.

Artists from Latin America, many living in the aftermath of colonialism and in the midst of overbearing globalization, have reason to be wary of the idyllic claims made for the Internet. Despite working in an environment of veiled racial demarcation that is entrenched in Western ideology, the artists discussed in this essay have developed practices that respond to the language and symbolism of the Net through a criticality infused with personal and collective identity. These artists operate from a categorically different position than that of dominant web-influenced discourses like the Post-Internet or the New Aesthetic, and speak instead to



the politics and identities of the Internet's subaltern. [1] While there are many examples of Latin American cultural producers working in this liminal space, this investigation focuses on projects by the *Astrovandalistas*, a transnational artist collective with a web of members from Latin America whose installations and hacking workshops comment on the politics of the web while promoting interpersonal interactions that work against disembodied virtuality; Montevideo-based artist Brian Mackern, whose multi-year project *Netart latino database* (2000-2005) uses the form of the online archive to address the lack of Latin American artists who are included in exhibitions about Internet Art; and Chimbabalab, a Santiago, Chile based media lab run by artists Claudia Gonzalez-Godoy and Costanza Piña that operated from 2008 to 2011. These projects not only use the web and its corresponding technologies as platforms, material, or points of departure for critical dialogue, they also adapt and reconfigure the forms familiar to the network to create alternative spaces that allow for other types of interactions between communities not served by typical Internet resources.

In order to understand the practices of artists from Latin America dealing with networking technologies both in and out of the Web, the need for alternatives to the Web must first be established. The argument made here hinges on there being a marked difference between the Internet as it is experienced in places like Latin America, where English is typically not the primary language and Internet penetration on average hovers around 55%, and the United States, the country where most content and content

production technology originates. [2] Anyone who has traveled to a different country and accessed the Internet may be at least somewhat aware of these differences. But this disparity goes beyond not being able to access certain content that is region-specific or being forwarded to a country-specific Google domain. The Internet that a user in Mexico navigates is not entirely the same Internet that one in the United States surfs. They are not different parts of the same ocean.

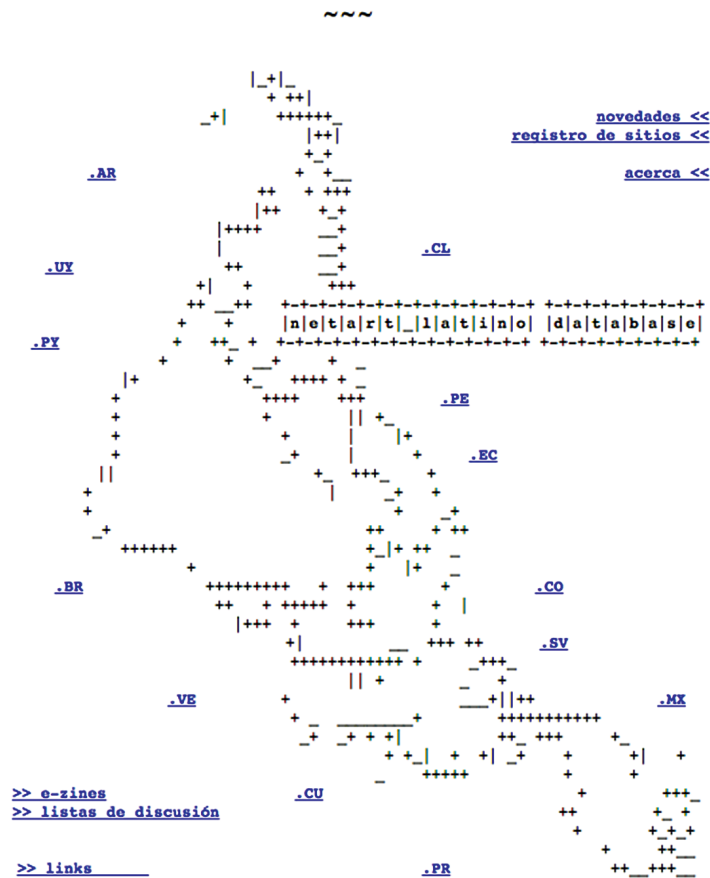
Although the Internet seems to be an amorphous, borderless space, international boundaries have an immense effect on how the Internet is experienced and regulated. Yes, the World Wide Web itself can be thought of as a singular network, but the actual experience, capabilities, and agency that a user has on the Net varies based on multiple geopolitical factors. The analogy of the Internet to the rhizome, as conceptualized by Gilles Deleuze and Félix Guattari, is the most popular model for understanding the Web as a comprehensive, multi-nodal network. [3] This ideation lends credence to the myth that accessing the net through one portal is equivalent to entering it through any other. But this is a privileged mindset. Linguistic, political, economic, and infrastructural variables across the globe are just a few of the factors that create taxonomies among user groups and determine levels of access to the net. URLs, the equivalent to addresses online, carry geographic markers that tie these virtual spaces to real world borders. Whereas sites in the United States remain neutral territory, addresses with other country code top-level domains (e.g., .mx, .ar,

and .br) are immediately identified as foreign. While there is plenty of content on the web available in the colonial languages spoken in Latin America (e.g., Spanish and Portuguese), the region still pales in comparison to more developed nations in terms of content produced, availability of Internet connections, and the population's familiarity with the tools of the web. [4] In many parts of the world, ubiquitous net connectivity is not a general cultural condition but an unfeasible distant goal, or even a cultural or environmental imposition to traditional ways of life. Furthermore, many in the developing world who are just now gaining access to the Internet are finding a highly developed cyberspace whose guidelines, etiquette, and aesthetics have already been established. Writing in 1993, Rejane Spitz, an artist and new media scholar, presciently identified the early signs of this rift when speaking about computer technology: "Some people will have access to the creation, development, and control of computer technology while others will have to follow—and fit into—the designs, rules, and logic established by the first group." [5] Online and offline minority groups have not been adequately considered by technological discourses, leaving cultural producers from the Internet's subaltern out of many of these conversations. Because of this, many artists and technologically-versed user groups in Latin America have begun building networks that fall outside of the bounds of the standard Internet.

The biases that are built into the web, when combined with differences in language, politics, culture, and aesthetics that are specific to Latin America, lead artists operating from liminal positions to work reactively to a virtual status quo. Despite the disparity in resources, the artists discussed here are fostering communities that use technology to address local issues while also adopting the hacker ethos to maximize their impact. The importance of identifying as Latin American while working in the context of new technologies is considered by Brian Mackern when he

asks: "Is the 'low-tech' made in Europe similar to the 'low-tech' made in Latin America? They appear to be the same, but I think that one 'works' from 'shortage' whereas the other 'fashions' due to 'over-saturation.'" [6] This "shortage" describes the position of artists working not just in Latin America, but also anywhere that new technologies impose a set of non-native cultural modes. Much earlier, Rejane Spitz was looking to answer a similar question: "Is the role of the artist who uses emergent technologies in the Third World different from the role of those who deal with electronic art in developed nations?" [7] These questions point to a need to identify cultural production in the field of new media through a consideration of the contextual idiosyncrasies tied to geographic location. As will be evidenced by the projects discussed, artists working from a position of "shortage" are using technological apparatuses and Web connectivity to address the shortcomings of the network while rejecting the normative modes of the Internet in favor of community-building strategies that reflect a concern for locality. It is through this position of geographic and cultural difference where the greatest revelations about the Web can be made, and it is the site from which the claims being made about art after the Internet must be contested.

Based in Montevideo, Uruguay, Brian Mackern was one of the first artists from Latin America to begin using the Internet as a platform for the production and dissemination of artworks. From 1996 to 2003, Mackern's practice focused primarily on the Net, resulting in pieces like *4ud10//pr0t3ct10n* (1997), *net.art.origin* (1998-9), and *interferences* (2000), which employed ASCII drawings, unconventional HTML code, embedded audio, and Flash animations—strategies typical of Internet-based art at the time. [8] The key difference here from other popular works from this period is that Mackern's work was being produced in a region whose Internet infrastructure was still in its nascent stages. Despite having no bearing on the legibility or quality of the work, its geographic



Brian Mackern, *Netart latino database* (detail), 2000-2005. Website. © Brian Mackern.

origins did render it nearly invisible to mainstream discussions about Internet Art. During this phase of technological development, there was very little attention directed at work from artists operating in the Global South. While there is still a lack of institutional and academic attention given to artists from Latin America working in this burgeoning cultural sphere, much progress has been made, due in no small part to Mackern's *Netart latino database*.

Compiled between 2000-2005, the *Netart latino database* firmly addresses the lack of consideration paid to artists based in Latin America working in digital space, serving as a locus for investigation into a network of cultural producers connected by geographic and cultural ties. Part artwork, part research project, this website-as-archive is staunchly rooted in the politics of online Latin American identity. The webpage opens with an ASCII art interpretation of

fellow Uruguayan artist Joaquín Torres García's seminal drawing from 1943, *América Invertida* (America Inverted). The drawing's inclusion at the top of the site serves a dual purpose. In practical terms, it functions as a navigation menu for the content included throughout the page. Perhaps more importantly, however, referencing García's drawing connects Mackern's site to the philosophies attributed to the image. The drawing has long been an important symbol in Latin American discourse as it succinctly portrays the drive to move away from West-centric ideas and reorient academic and cultural modes to focus on the specificities of the Latin American condition. Just below the menu, Mackern's brief description of the project reaffirms these political allegiances as he establishes the geographic zones covered by the project (i.e., Central and South America) and ends it with the exclamatory caveat, "Spanish only!" [9] This poignant reminder of the

limits of inquiry alongside the weight placed on strict linguistic confines reiterates the artist's intent to create a space that delineates a dichotomy between the audience being served and the normative Internet user, with the latter left on the outside. The main database comprises a list of hyperlinks to web-based projects organized alphabetically by the country of origin of the artist or collective that produced them and includes a short description of each project alongside the names of the artists associated with the work. Also included on the site are links to relevant e-zines, arts organizations, and mailing lists. In addition to the online archive, an eponymous publication was produced in 2010 that includes essays by Mackern and others that give historical context to the *Netart latino database* while also manifesting the ideologies of the project through texts and images. [10] Overall, the *Netart latino database* is a coherent record of a community of cultural producers and objects from a clearly defined period of time. Although many of the links no longer work, the site

still serves as an excellent point of departure for further analyses of web-based projects by Latin American artists, and it paved the way for artists like the Astrovandalistas.

The Astrovandalistas is an artist collective founded in Tijuana in 2010 whose practice straddles borders and defies geographic fixity. Made up of members Leslie García, Rodrigo Frenk, Thiago Hersen, and Andrés Padilla Domene, the collective operates transnationally, hailing from different parts of Mexico and, in Thiago's case, Brazil (although they are based primarily in Mexico City). This networked mode of working makes evident the type of geographically-displaced cultural production that is possible in the age of the Internet. At the same time, their collective practice reveals an emphasis on human-to-human communication at the local level that works against immaterial social connections and addresses the intersection of humans and technology in the public sphere.




ESTO NO ES INTERNET
COLABORA
ACCIONES TERRITORIALES
REPLICA ESTE SITIO









### SISTEMA, PODER Y SOCIEDAD I ELECTRÓNICA PARA FASCISTAS

10 noviembre, 2014  
semicerrazon

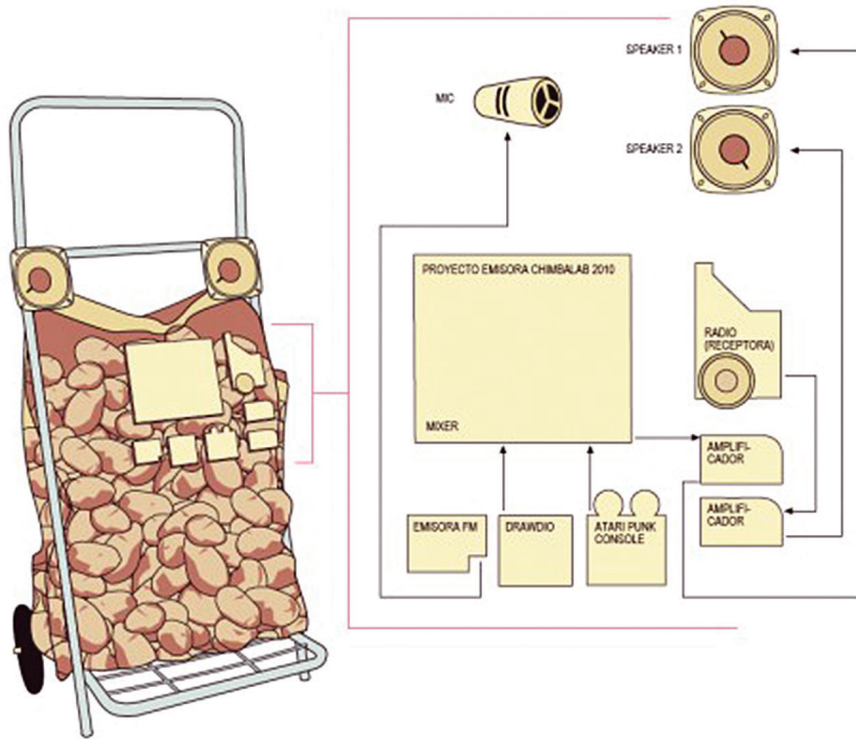
¿Cuándo surge el poder? ¿Cómo se combate al sistema?  
¿Quién controla a la sociedad? Físicamente el cuerpo humano es considerado una resistencia natural. Consumimos energía, creamos necesidades, provocamos desorden... Eléctricamente nuestro cuerpo es una oposición al flujo de corriente eléctrica, sin embargo, es gracias a esta oposición que surge lo que denominamos sistema eléctrico. Para que exista [...]



11 DELITOS FABRICADOS EN  
MÉXICO QUE TIENES QUE  
CONOCER

## PROYECTO EMISORA CHIMBALAB 2010

CARRO: FLUJO DE DISPOSITIVOS



Chimbalab, *Proyecto Emisora* (diagram), 2010. Digital illustration. © Chimbalab.

In 2014, the Astrovandalistas constructed a network that mimicked the Internet but instead served to disseminate information about Mexican cyberpolitics for a project entitled *#EstoNoEsInternet* (#ThisIsNotTheInternet). [11] Presented for *Acciones Territoriales*, an exhibition held at Ex-Teresa Arte Actual in Mexico City's historical center, the project was activated through a series of workshops where the artists led hacking tutorials, conversations, and writing sessions alongside a small group of local participants, with the ultimate goal of creating an alternative digital territory to activate for political means. *#EstoNoEsInternet* consisted of a set of hacked WiFi routers that bypassed the Internet and were recalibrated as platforms for the distribution of a digital zine that contained articles speaking against Mexico's sweeping telecommunications laws that allowed rampant

government surveillance, violations of privacy, and unwarranted censorship via the Internet. With *#EstoNoEsInternet*, Astrovandalistas created a space for discussion for a community threatened by online censorship. Not only is the issue of locality present in the content of the zine, it is also addressed by the technology used to host the zine. The modified routers used for the project emit a signal that can be detected by devices as a WiFi network named "Free WiFi," but in actuality, the only content of this "network" is the zine itself. As the WiFi routers were distributed to different locations in Mexico City, nodes were added to the network. Because the signal of the routers is limited, to access the *#EstoNoEsInternet* network a user must be in physical proximity to one of the devices, emphasizing the need to "connect" physically to one of the locations



in Mexico City that hosted a device. While they make use of the Internet as a resource, the ultimate goal of *#EstoNoEsInternet* is interpersonal communication facilitated, but not controlled, by technology. For the Astrovandalistas, excessive ties to government and corporate organizations threaten the integrity of communication that passes through technology, prompting the creation of an alternative that falls outside this sphere of influence.

Similarly, Chimbalab was another artist-run art and technology collaborative that brought together a public wanting to interact with emergent technologies, but did so in parallel to established hegemonies. Founded at the end of 2008 by artists Claudia Gonzalez-Godoy and Costanza Piña, the Chimbalab Project Laboratory for Art and Technology was a workshop-based, self-funded organization that operated

from the artists' live/work space in the Independencia district of Santiago, Chile. [11] The name of the lab refers to the part of the city in which it was located. Known locally as *La Chimba* (which loosely translates to "other side"), the area where the media lab was initially based was acknowledged to be a part of the city with limited means, where the most common resource is the plethora of second-hand items that could be purchased in its *mercados*. By identifying with the *Chimba* through the project's name, the collective adopted a sense of locality that was reflected not only in their approach to materials but also in their insistence on community building. The project originated as a response to an identification of an unmet need within their neighborhood as there was no existing organizations established for learning about and working with art and technology, despite a great interest within the artists' peer group. [12]



Chimbalab, *Chimbalab Broadcast Project*, 2012. Video. © Chimbalab.

Through mostly free workshops that were taught by local experts, amateur techies, and artists, Chimbalab became a hub for experimental practices. The application of the do-it-yourself ethos promulgated through the Internet extended to the collective's use of materials, which were typically outdated gadgets garnered from nearby used-item vendors. This resourcefulness was especially evident in Chimbalab's *Proyecto Emisora* (Broadcast Project). [13] The work was initiated in 2010 after a major earthquake left the arts group without a venue and consisted of a portable, potato-powered pirate radio station constructed from a grocery cart and electronics that could send and receive FM signals. Trying to envision a tool that could connect people in times of disaster, the piece was a manifestation of the group's ideologies. Wanting to increase communication between similar groups across Latin America, the duo also helped launch *Sudamérica Experimental*, an online network of media labs, artists, and technologists from Argentina, Brazil, Chile, and Colombia. [14] Not only did Chimbalab create a pedagogical forum for a community underserved by an existing technological infrastructure, but it also facilitated the formation and expression of a Latin American identity connected by an affinity for the "low-tech."

In Latin America, the importance of the projects discussed above and those like it cannot be understated. They are part of a web that is being cast over the digital divide that is helping new publics access what lies beyond. While these projects contribute content to an arena that desperately needs more linguistic and cultural diversity, they also point to a future where networks with embedded power dynamics and normative identities are replaced with more egalitarian ones—where resources are shared, difference is not considered a hindrance, and minority cultures and languages can be preserved.

## NOTES

1. For examples of these two discourses see: Marisa Olson, "Postinternet: Art After the Internet," *Foam Magazine*, no. 29 (2012): 63; James Bridle, "The New Aesthetic and its Politics," in *You are here: Art After the Internet*, ed. Omar Kholeif (London; Manchester: Cornerhouse, 2014) 26.
2. "World Internet Usage and Population Statistics: June 30, 2014-Mid-Year Update." *Internet World Stats*, accessed March 21, 2016, <http://www.internetworldstats.com/stats.htm>.
3. Gilles Deleuze and Félix Guattari, "Introduction: Rhizome," in *A Thousand Plateaus: Capitalism and Schizophrenia*, ed. 11 (Minneapolis: University of Minnesota Press, 1987), 325.
4. "Usage of content languages for websites." *W3Techs Web Technology Surveys*, accessed March 21, 2016, [http://w3techs.com/technologies/overview/content\\_language/all](http://w3techs.com/technologies/overview/content_language/all).
5. Rejane Spitz, "Qualitative, Dialectical and Experiential Domains of Electronic Art," *Leonardo* 28, no. 4 (1995): 320.
6. Brian Mackern, as quoted in Lila Pagola, "Netart Latino Database: The Inverted Map of Latin American Net.Art," in *Netart Latino Database*, ed. Nilo Casares (Badajoz: Meiac Museo Extremeño E Iberoamericano De Arte Contemporáneo, 2008), 38.
7. Rejane Spitz, "Domains of Electronic Art," *Leonardo* 28, no. 4 (1995): 320.
8. Brian Mackern's official website, "Netart or Notart?" accessed March 12, 2016, <http://netart.org.uyl/>.
9. Brian Mackern, "Netart latino database," accessed March 12, 2016 <http://netart.org.uyl/latino/index.html>.
10. Nilo Casares, ed., "Netart Latino Database" (Badajoz: Meiac Museo Extremeño E Iberoamericano De Arte Contemporáneo, 2008).
11. Astrovandalistas, "#EstoNoEsInternet," accessed March 3, 2016, <http://astrovandalistas.cc/accionesterritoriales/>.
12. "Sólo un paso: Del desecho electrónico al arte," *Tiempo de Balas*, June 15, 2011, accessed March 16, 2016, <http://www.tiempodebalas.cl/monos-porfiaos/solo-un-paso-del-desecho-electronico-al-arte/>.
13. Chimbalab, "Chimbalab Broadcast Project," accessed March 16, 2016, <https://vimeo.com/38499142>.
14. Sudamerica Experimental, "Sobre," accessed March 16, 2016, <https://sudamericaexperimental.wordpress.com/2013/06/>.

## BIO

Heber Rodriguez is a Los Angeles-based curator and writer whose research areas include art and technology, Internet culture, and experimental sound practices with an emphasis on Latin America and its diaspora. Rodriguez holds an MA in Art and Curatorial Practice in the Public Sphere from the University of Southern California's Roski School of Art and Design. His thesis dissertation, *Up to code: Geopolitics and its influence on cultural production on the Internet*, investigates how the legislative and technological infrastructures that regulate the Internet within a geopolitical territory affect a user's experience of the web in that area and how these idiosyncrasies are ultimately reflected in that region's cultural products.

# THE **FREE/OPEN SOURCE** Software

## AS Hybrid Concept: CONSIDERATIONS FROM A COLOMBIAN *ACTIVIST PERSPECTIVE*

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**KEYWORDS:**  
TECHNOLOGY,  
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METAPHOR,  
METAMEDIUM,  
ACTIVISM, HACKER,  
CRAFTSMANSHIP,  
DIY, HYBRIDIZATION

### INTRODUCTION

This short essay aims to expand on the notions of Free/Libre and Open Source Software (FLOSS) in relation to cultural activism and resistance in Colombia. This activism aims to confront the software's hi-tech Global North origins in relation to the socio-political and economic conditions of the region, where traditional indigenous practices and related referents allow the emergence of more compatible local narratives. To present these ideas I will focus on some local examples, as well as present a more personal narrative of a project in which I had the opportunity to collaborate. As a conclusion, I aim to make clear the connection of concepts such as the "hacker ethic," "neoliberalism," and "hybridization," while highlighting the communal framework and vernacular organizational traditions behind their creative commons process.

### FREE, LIBRE, AND HYBRID

In Latin America, FLOSS [1] practices have undergone strong hybridization processes; a consequence of socio-economic realities specific to the region—particularly, in reference to media arts experiences that combined computer-based practices with a desire for social and political change. In Latin America, the real contribution of software—and FLOSS in particular—does not rely on the instrumentality of software, but rather, on its incarnation as "a culture": a way of sensing the material world through code and, most importantly, its structural values of collaboration, cooperation, and distributed coordination.

The history of computing points out that software discourse has been developed at a "global" level (in the United States and Western Europe, and to a lesser degree in Russia, Japan, and some nodes of Eastern Europe); however, FLOSS as software and as discourse had a different trajectory with a much broader impact. So, what makes Latin America or, to a greater extent, the so-called Global South, special in this narrative? Our region did not participate in the development of this technological revolution—exemplifying how big technological endeavors are closely connected to capital, its means of production, and its global holders (therefore excluding less economically developed regions such as Latin America). [2] As the FLOSS ideas spread worldwide (due to the commercialization of computer networks brought about by globalization), there were few instances of a software industry native to Latin America—let alone local hackers, in the computer sense

of the word, to provide a framework to the “hacker ethic.” At the same time, the widespread political upheaval in the region in reaction to 1990s neoliberal reforms spawned a resistance movement involving a whole new generation of activists eager to engage the global debate using new technologies that articulate vernacular practices and new communities that matched Eric Raymond’s “bazaar” model of collective participation and “productive anarchy.”

There is no novelty in pairing hacker values with activism—there is enough scholarship on hacker ethics ranging from Marxist to anarchist interpretations—and there are similar hybridization processes happening in other places. To understand the complexity of this period and the tensions between capital and (digital) technology-based social movements, one may need to consider some parallel developments occurring within the same period: Linux making its debut, the spread of the World Wide Web, the discussion of Free Trade Agreements (FTAs), and the “Declaration of the Independence of Cyberspace,” by J.P. Barlow at the World Economic Forum in Davos. [3]

To illustrate this argument let us take a look at two concurrent events taking place on January 1, 1994: the North American

Free Trade Agreement (NAFTA) and the Zapatista uprising. These events were to make a big mark on history and are considered a “key part both of the anti-globalization movement and the emergence of hacktivism.” [4] As stated by Reinhard Krüger, the Zapatista movement was among the first to be aware of media’s importance and the Internet’s increasing relevance, relying extensively on the use of communication networks for its benefit. [5] It is no coincidence that the zeitgeist of the age has left us, on one hand, with the commercialization of the Internet, and on the other, with the image of the *guerrillero* (revolutionary fighter) who chooses the computer over the machine gun as a weapon. The “struggle” was to be displaced from “taking over the means of production” to the production of one’s own media. This would be the starting point of a series of remixed and hybrid readings of the FLOSS practice, turning the hacker into an activist via the software-networks tandem as a medium.

Antonio Falcón Villalobos and Collective Agit P.O.V., *NO DESAPARECER +*, 2014. Performance using bicycle and open hardware electronics in support for the protests concerning the disappearance of Ayotzinapa students in Mexico. Collaborative workshop held by Agit P.O.V. (Petit Objet de Vélo - Alexandre Castonguay, Thomas Ouellet Fredericks, Sofian Audry, Daniel Felipe Valencia y Mariangela Aponte Núñez). Photo: Mariangela Aponte Núñez. CC BY-NC-SA 4.0.





It could be argued that values of collaboration and cooperation have always been present in human history and have been tightly connected with the evolution of technology; however, the digital network's omnipresence may provide new historical readings of FLOSS practices. [6] If European thinkers have linked them to economics of the "commons," Latin American indigenous and *mestizo* imaginaries may present a parallel development. Traditional "commons" have been described as communal facilities (such as wells, rivers, pastures, and fields) established for the beneficial use and enjoyment of a whole community, similar to practices of pool sharing of a computer code used and improved collectively. [7] Latin American indigenous communities developed their own cultures of open sharing that were to include not only resources, but forms of organization. This is illustrated by the following two examples: the *milpa*, a collaborative, Mesoamerican, agricultural system dating from pre-Columbian times that fits seamlessly with the idea of an open communicative process— "El conocimiento técnico, un conocimiento libre" (Technical knowledge, free knowledge); [8] and the *minga*, a pre-colonial system of communal organization and voluntary cooperation of South American indigenous societies. Minga could be compared to FLOSS's abstract

knowledge-sharing, rendering a physical (and also networked) space where the hacker, the indigenous people, the communitarian leader, and the public server may meet. [9]

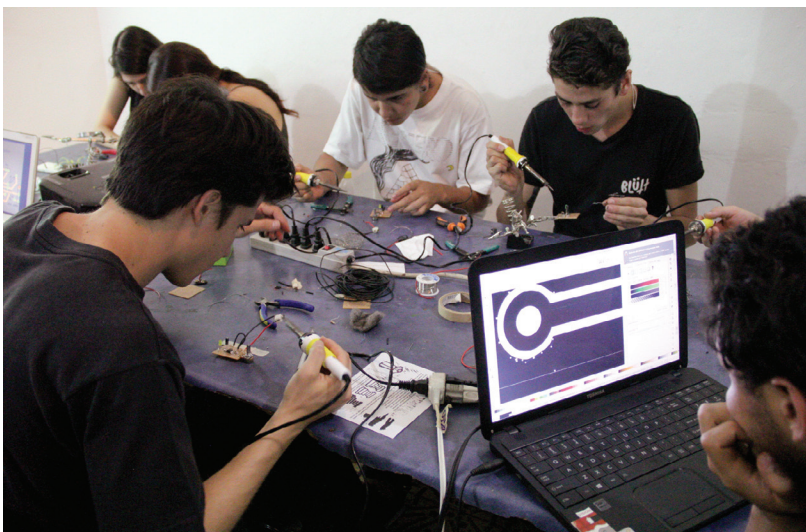
FLOSS practices blossomed in Latin America through this time period. Combined with the associated DIY ethic, it has been seen as a source of social and horizontal innovation for change outside of corporate and government institutions that were perceived as threatening failures. Projects, collectives, festivals, meetings, laboratories, and art spaces engaged the dynamics of the open and free discourse of technology, applying it to a mixture of art, education, and political action. I would like to focus on three examples to show how this hybridization has taken place in Colombia.

### INSIDE THE BAZAAR: THE COLOMBIAN REMIX PLATOHEDRO

<http://platohedro.blogspot.com/>

*Platohedro* is an independent space in Medellín, Colombia devoted to artistic and activist practices revolving around non-formal education that draws heavily on free software, free speech, and free communications rhetoric. The center aims to put in place educational alternatives in a city perceived

as violent, and in doing so, it has matched a DIY ethos with local practices such as *cacharreo* (tinkering) as a low cost approach to technology. In their projects and language they use funny yet revealing adaptations of hacktivist jargon, such as *La Jaquer es Cool* (a Spanish-English wordplay on hacker, but also on "cool" and "school") and *Parce to Parce* (a pun on the p2p movement, which translates to "dude to dude"), bringing their activities closer to regular street language.



Protoboarding and Fritzing Software Workshop, 2015. Platohedro workshop held at Platohedro in Medellín, Colombia. CC BY-NC-SA 4.0.

**MINKALAB****<http://minkalab.org>**

A project and event located in the countryside of the Risaralda Department (Colombia). Its name is a combination of *minka* (another word for the already-described pre-Columbian minga) and “laboratory.” Having taken note of the problems of rural Colombia and the divide with technology activism mostly located in urban areas, *Minkalab* is based in the midst of local indigenous groups, small-scale farmers, and Afro-Colombian communities. It attempts to generate a space for dialogue where urban activists, artists, and scientist are also welcomed. The idea of minka is materialized in the collective work and the horizontal sharing of experiences, exploring the continuum of traditional, ecological technologies and modern technologies—and the construction of a geodesic dome, which serves as a communal meeting place, reminiscent of the traditional indigenous *maloca*.

**FESTIVAL DEL TRUEQUE (BARTER FESTIVAL):****<https://festivaldeltrueque.wordpress.com/>**

The Festival del Trueque is an event held in Cali, Colombia on May 1, International Workers' Day. Due to the growth of free-trade areas and an increasing number of FTAs between countries—where even the storage and selling of seeds not approved by corporations can be considered a law-breaking offense—the search for economic alternatives has once again been extrapolated from the lessons of FLOSS discourse. This festival takes place in a well-known square and congregates students interested in exchanging used clothing, appliances, and music. The FLOSS narrative is provided by “on the streets” workshops about free media and computer applications, and by Internet radio transmissions that promote hacker ethics. Local color is given by the increasing interest in seed exchanges (given a controversial and FTA-compliant government project) and by salsa music, itself an important part of the mestizo identity of the city.



(top) Khatarina Klemm and Minkalab, *Minkalab 2015*, 2015. Video documentary of Minkalab. Used with permission. (bottom) Edition and digitization by Walter Julián Rodríguez, invitation to the Third Trueque Festival by Trabajo Libre, Cali, Colombia, 2015. Collective design, illustration, and free software digitization. CC BY-NC-SA 4.0.

I detail these experiences because they are close to me, but also because they represent a plethora of initiatives within Latin America. These initiatives can be considered as nodes of larger networks that promote the horizontal exchange of information using software tools (e.g., the activist social network Anillo Sur) and encourage local or international meetings (e.g., Labsurlab). As suggested by the use of the word *sur* (south), there is an awareness of the origins of FLOSS and the figure of the hacker (in Europe and the United States) and the resulting need for a non-colonial reading of both. Thus, what I have called “The Colombian Remix” conveniently supplies a “glocal turn” of the FLOSS metaphor, where it is possible to bridge a foreign and software-inspired imaginary with local practices (traditional and modern) without losing sight of global activist discourse. As noted before, similar processes have taken place in different parts of the world—however, whereas both corporations and activists have embraced FLOSS in developed countries, in the Global South activists have been the only ones to do so (and to a lesser extent some governments and local companies).

## FIRE AT THE PRESS

### FLIA

<http://feriadellibroindependiente.blogspot.com/>

My personal experience can also serve to support my thesis via my participative role in the FLIA project,

or “Feria de Libro Independiente y Autogestiva” (Independent and Self-Managed Book Fair). FLIA is a loose network of small DIY book fairs, which began in Argentina and have spread to different countries in South America. Even though this movement does not present itself as “FLOSS-inflected,” its practices, tools, and logic match on some levels. FLIA presents its idea, “everyone can set up a book fair in their town,” by providing a simple set of rules: fair visitors and exhibitors should not pay any money to participate; no private or state support is allowed; and all spaces, workshops, music, and advertising are negotiated based on an exchange economy where money is avoided. It should be noted that FLIA tends to identify with anarchist philosophy, and that this set of rules is provided as a kind of code that can be adapted and modified—that is, remixed—to meet local needs. As with the hacker ethics which propelled the FLOSS development, FLIA activities rely largely on voluntary labor and a list of tasks where participants choose their level of engagement. Some of its members have made the connection with other grassroots organizations, alternative communications collectives, and—of course—FLOSS activists; however, these relationships remain unstable within FLIA discourse. The dichotomy of process/product also took place when FLIA Bogotá decided to surpass the event organization and pursue an editorial product in the form of a fanzine. To do this, a set of rules was designed to allow for open participation of all submissions, distribution, and production by means of photocopying, using a silkscreen cover, and organizing the collective writing of the introductory text (which employed a well-known collaborative pad tool very popular among hacktivists). The tension between tool and ideology was also manifest in the meetings, where some people expressed the coherence between the structure of FLIA and the use of “free tools” as understood in FLOSS or non-corporate social networks. This provoked numerous and sometimes clashing points of view between pragmatism (if it works it doesn’t matter whether it is free or open



Vogel, *Independencia*, 2015. Cover of the FLIA Bogotá Fanzine. Digital collage and silkscreen. Used with permission.



or not) and activist core values closely related to the FLOSS metaphor and its ethics. The importance of the FLIA example is that it allows for comparisons to be drawn between the main software metaphor being discussed and its counterpart in technology hybrid settings (i.e., where digital tools interact with analog tools). This is direct evidence of the materiality of this metaphor—hence of software—and its significance for some Latin American “activism” movements

## CONCLUSION

The examples discussed provide a glimpse of a larger pool of projects that are offered to illustrate the complexity and extent of FLOSS in Latin America. The so-called free culture is an evident consequence of the logics of free and open software gaining ground in the field of cultural production. However, as previously mentioned, intellectual protection clauses in FTAs place the cultural vernacular in danger. Here, some counter initiatives stand out, such as the very active Creative Commons community, or examples of musicians releasing their music “freely” as a form of protest. Finally, it can be said that the main force behind FLOSS development and “mestizo hacktivism” is “the community.” In such a construct, the “hacker gift culture” meets the workshop method as a materialization of cooperation, as in ancient ritual, providing a flexible narrative where the bazaar and a minga are alike. [10] If technology reflects our ontological state, hybridization and collaboration are expected outcomes—even when sometimes veiled by the system.



## REFERENCES

1. It should be noted that in this text the term FLOSS is preferred over FOSS. While both are in common use and refer to the same thing, the term “FOSS” in English removes the Spanish word *libre* and introduces ambiguity about the term *free*. To emphasize that “free software” refers to freedom and not to price, we say “free/libre software,” adding the French or Spanish word (*libre*) that means free in the sense of freedom. Secondly, the inclusion of the Spanish *libre* represents a kind of playful language hybridization important for the main point about hybridization addressed in this essay.
2. Debra Benita Shaw, *Technoculture* (Oxford: Berg, 2008), 13.
3. Mario Tascón y Yolanda Quintana, *Ciberactivismo: Las nuevas revoluciones de las multitudes conectadas*, (Los Libros de la Catarata, 2012), 18.
4. Tim Jordan and Paul Taylor, *Hacktivism and cyberwars. Rebels with a cause?* (London and New York: Routledge, 2004), 59.
5. Reinhard Krüger, “The Maya and the Internet: Networking Structures in Indigenous Myths and Global Communication,” *Form+Zweck* 19 (2002): 68-101.
6. Howard Rheingold, “Technologies of Cooperation,” in *The Art of Free Cooperation*, ed. Geert Lovink and Trebor Scholz (New York: Autonomedia, 2004), 29-64.
7. Dongbin Wang, “Understanding FLOSS as a Commons,” in *Co-operative Innovations in China and the West*, ed. Caroline Gijssels, Li Zhao, and Sonja Novkovic (Hampshire: Palgrave Macmillan, 2014), 143-159.
8. Blanca Cruz Cárcamo and Erick Huerta Velázquez, *Haciendo milpa. Memoria del taller: Estrategias de apoyo a la formación de comunicadores indígenas* (Mexico: Redes por la Diversidad, Equidad y Sustentabilidad, 2015), 23.
9. Xabier E. Barandiaran, David Vila-Viñas, and Daniel Vázquez, *Buen Conocer Flok Society. Modelos sostenibles y políticas públicas para una economía social del conocimiento común y abierto en el Ecuador* (Quito: Flok Society, 2015), 14.
10. Eric S. Raymond, *The Cathedral & the Bazaar: Musings on Linux and Open Source by an Accidental Revolutionary*, (O'Reilly Media, 2001), 80; Richard Sennett, *Together: The Rituals, Pleasures and Politics of Cooperation* (London: Allen Lane, 2012), 199.

## BIO

Luis Fernando Medina Cardona is Associate Professor in the Department of Cinema and Television (School of Arts, Universidad Nacional de Colombia, Bogotá). He is interested in the interactions between new media, art, the city, remix theory, and DIY/DIWO (do it yourself/ do it with others) practices—particularly in how the free and open software movement provides a creation model for cultural artifacts. He combines teaching and research with creative practices of fanzines, street art, hacktivism, and radio, among others. As one of the founders of the Trueque Digital Collective (Digital Barter), he was awarded the prize of the Ministry of Culture of Colombia in 2011 in the field of Contents for the Web. He was also recognized with the Innovative Teaching Award from Universidad Nacional de Colombia for his promotion of free software and open access. Currently he is a doctoral student at the Academy of Media Arts Cologne (Germany). <http://www.radioaleta.net>

# GAMING EMPIRE: PLAY<sup>and</sup> CHANGE

## in Latin America AND LATINA DIASPORAS

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**KEYWORDS:**  
GLOBALIZATION,  
VIDEOGAMES,  
ART, LATIN  
AMERICA,  
DIASPORA,  
EMPIRE

A topic first explored by socially conscious artists and designers, the imbrication of videogames with global capitalism is now commonplace in academic discourse. As the work of politicized Latin American designers is deservedly internationally recognized, its basis on a distinctly ambivalent view of globalization goes against the grain of the common understanding of global processes as leveling and homogenizing forces within cultural studies, including game studies. [1] This complex outlook is shared by the Uruguayan developer Gonzalo Frasca and the Mexican designer Rafael Fajardo, both of whom are well-known figures in the field of social games, which are games with explicit critical perspectives on contemporary issues—in their specific cases the more pertinent because they educate on topics linked with globalization. Frasca designed *September 12th* (2003), a flash game about drone warfare as a central component of the global conflict led by the United States, the so-called War on Terror; and Fajardo created *La Migra* (2001), a Java game on the dynamics of border crossing between the United States and Mexico. I will discuss the significance of these projects as anti-imperialistic critiques, which I argue are best understood in relation to the hybrid or *mestizo* outlook of historical art and activist precedents from which these works draw, including techniques of appropriation and the re-articulation of conventional mass media forms for purposes of cultural critique.

Alongside this work, this essay points to the inherent need to attend to understandings of videogames both as unique forms of expression, as well as products of specific cultural environments. This focus is pertinent to the analysis of the relationship between videogames and globalization because of the increasingly transnational character of videogame production and study, in which Latin America is emerging as a prominent player. Furthermore, the region's historical "self-understanding" as culturally and intrinsically global and syncretic is a shared facet of both videogame designers in Latin America and Latina diasporas—including the aforementioned designers—and of the emerging literature by Latin American scholars on the topic. Because this literature is not well known, I will briefly discuss it, focusing on recent studies of globalization and videogames. In the end, I understand both these practices and analyses as critical alternatives to North-centered design and perspectives on videogames, and most significantly, as part and parcel of the same epistemic project; namely, the decolonization of knowledge, including its production and circulation in the global context.



Gonzalo Frasca, *September 12th*, 2003. Flash game. Used with permission.

Among Latin American videogame designers, Frasca's work, spanning both theory and practice, is foundational to the creation of Game Studies as an academic field, as well as to game design focused on critical thought, known variously as social, political, serious, or persuasive games. Shaped by personal experiences with media censorship under dictatorship in the 1970s and 1980s in Uruguay, Frasca's notion of "videogames of the oppressed" is also reflective of the transnational character of Latin American intellectual and cultural legacies, including anti-colonial strands. Frasca's concept builds on Brazilian dramaturge Augusto Boal's use of theater for *conscientização* ("consciousness-raising"). Boal's *Theater of the Oppressed* expands on Paulo Freire's *Pedagogy of the Oppressed*, itself an articulation of decolonial education after Franz Fanon's theories on decolonization, as well as of Bertold Brecht's concept of *Verfremdungseffekt*, or alienation effect. Similarly oriented, Frasca's use of simulations is a practice concerned with decolonial education as a perspective critical of Eurocentric and Third World fundamentalism, colonialism, and nationalism. Similar to Boal's theater, Frasca's games are based on repurposing or "making strange" a

popular medium for educational purposes. Both Boal and Frasca engage "defamiliarization" as a technique aimed at undercutting resolution, or catharsis and immersion—two of the core tenets shared by conventional forms of theater and mainstream videogames. Their aim is similar: to effect *conscientização*, which means enhancing audiences' or players' awareness about the social dynamics portrayed, and thus ideally triggering personal and social change.

Based on this concept of education, Frasca's *September 12th* is a stand-alone, free simulation on the Internet about the post-9/11 War on Terror that evokes the cartoonish aesthetics of *Sims* games. In the game, the player manipulates an aiming reticle juxtaposed on a bird's eye view of an Arab market square where clichéd images of jihadists circulate among the crowds. As the player shoots at them, she soon realizes that the built-in delay between each shot thwarts accuracy, and that repeated shooting generates more terrorists (as passerby witnesses of civilian casualties transform into terrorists). The message: violence elicits violence. Similar to Boal's theater, *September 12th* denies the linear logic of



causality, thereby withholding resolution. [2] Counter to mainstream shooter games which, in addition to consumer products, are also significant recruiting and training tools used by the United States military (as well as fundamentalist groups), the impossibility of winning or losing challenges the conventional strategy of using military intervention (and/or terrorism) to eliminate opposition. In this sense, Frasca's appropriation and re-articulation of shooter games is best understood as targeting players of such games, who constitute the same pool of potential drone operators targeted by the military—thus turning a recruiting tool into an educational one.

Similarly conceived as an educational game, Fajardo's *La Migra* tweaks conventional play mechanics

and tropes, in this case to address "(il)legal human traffic at the U.S.-Mexico border." [3] The game is an online adaptation of the arcade game *Space Invaders* (Taito/Midway, 1978) that puts the player in the role of an Immigration and Naturalization Services (INS) agent patrolling the Rio Grande. Instead of an alien ship and shooting beams, the player controls a Ford Explorer while shooting flying handcuffs at crossers. Crossers on the Mexican side are safe, but on the American side hits on the targets will cause them to immediately attempt crossing again, thus creating a continual challenge to the agent/player. The only way to stop the flow of crossers is to run them over. A reference to the mounting human toll of U.S. immigration policies, the piling corpses also impact game play, as the piles eventually cause the player to lose



Rafael Fajardo, *La Migra*, 2001.  
Java game. Used with permission.



Rafael Fajardo, *La Migra*, 2001.  
Java game. Used with permission.



control over the patrol vehicle. Like *September 12th*, *La Migra* shows that dehumanization (the objectification of the “other”) is a dialogical process, as one cannot dehumanize without becoming dehumanized.

The similarities to Frasca’s work are many. Like him, Fajardo denies a win/lose outcome, instead confronting the player with the permanent “reality at the US/Mexico border,” which he typifies as “a game of chance, where the stakes are survival.” [4] Like Frasca’s, the work is in part autobiographical, as Fajardo is a Mexican immigrant. From this position he also uses the game to speak to “the politics of otherness” (xenophobia); as he puts it, “(il)legal immigration exists because the informal economy of the United States depends on human traffic.” [5] As with Frasca’s game, Fajardo’s work is steeped in syncretic traditions, with sources ranging from other games by contemporary Latin American and feminist artists, as well as historical art and activist antecedents, including Arte Povera and El Teatro Campesino. Lastly, *La Migra* is likewise meant to circulate marginalized experiences and perspectives. In this spirit, the game is created on Cocoa, a programming environment discarded by Apple. As such it follows a long trajectory of “border aesthetics” (Guillermo Gómez-Peña) where reuse and recycling (of the North’s technological debris) are not only strategies of survival, of making do, but are also understood to be counters to and reconstitutions of dominant cultural codes and binaries. In this same vein, both Frasca and Fajardo appropriate and reroute videogames, a medium used to buttress imperialist and commodity culture, for conscientização—thus literally empowering players’ (or consumers’) learning and potentially contributing to the medium’s transformation.

While Frasca reported objections to the game as an oversimplification of a complex matter at the time of its release, I can attest to the effectiveness of his and Fajardo’s works as triggers for involving first-year college students, many of whom are gamers,

in discussions about various topics addressed by both designers, among them: the political implications of mimesis within historical and contemporary imperialist projects, how ideologies are codified through formal means, and how such projects link to interrogations of assumptions about the cultural backwardness of Latin America and Latina diasporas. And while representing an abbreviated glimpse of social games designed by Latin American and diasporic designers and artists, the practices of Frasca and Fajardo suggest altogether the overall gist of kindred projects, including games by artists and collectives noted by Fajardo, as well as others: Coco Fusco, Ricardo Dominguez, Fran Llich, Ricardo Miranda, Rolando Sánchez Ponce, Ivan Abreu, and Micha Cárdenas, to name a few. All these artists engage in the appropriation, infiltration, and re-articulation of mass-produced games and videogames as a way to challenge, teach about, or otherwise speak back to power. The Latina transgender artist Cárdenas’ recent writings about her own games succinctly encapsulate the stakes of this work; namely, the development of a “science of the oppressed” involving the “reimagining [of] knowledge production in the service of oppressed communities and social movements” by bringing “such a knowledge production from below, *desde abajo*, to the status of science.” [6] In this sense, these practices share the underlying ideas of historical currents in art and thought on which they build; namely, that colonial and imperialist projects are inherently tied up with the control of knowledge (of culture and creativity), and conversely, that decolonial projects are also always linked to the capacity for appropriating and absorbing dominant culture. Because contemporary culture is global and mediated by media technologies, videogames are an important site of negotiation. As such, these artists and designers have the potential to reach transnationally, not only reaching players (and students), but also shaping practices of like-minded artists and designers elsewhere, who are similarly interested in developing digital games beyond their status as commodities.

Contrary to artists and designers, Latin American cultural scholars are only recently starting to engage with the topic of videogames and their relationship to culture. Still, similar to artists and designers, these scholars understand the emergence of videogames as global media foremost as constituting a significant opportunity to intervene and negotiate the meaning of global culture “from below.” For instance, Argentine anthropologist Néstor García Canclini argues for an understanding of the cultural effects of electronic media, including videogames, in line with a view of globalizing processes that (while still uneven) are also more than just top-down transmissions or matters of transparent coding and decoding (that is, the passive acceptance of mass media’s ideological frames). According to Canclini, globalization is “not just the ‘Americanization’ of the world” but a “highly heterogeneous cultural space.” Viewed as such, media technologies are central nodes of negotiation

between the powerful and the weak. [7] Phillip Penix-Tadsen’s *Cultural Code* (2016) is, at the time of writing, the only book-length study of videogames by Latin American designers about how Latin American culture is portrayed in popular games. Tadsen follows on the vein of Canclini’s, stressing “use”—including appropriation—as the most significant site from which to understand the relationship between videogames and culture. [8] In sum, understood as knowledge production and circulation—as processes of multilateral exchange—Latin American and Latina social games and emerging game theory altogether reflect similar views of globalized culture as, in the words of the Chilean philosopher Martín Hopenhayn, “a mass mediated, but also a ‘mass-mestizo’ hybridizing phenomenon.” [9] As cultural scholars and critics, we would do well to include this perspective to counter still-prevalent views of the “other,” including Latin Americans and diasporas, as either passive victims or dangerous elements.

## REFERENCES

1. An essential text on the subject, *Games of Empire: Global Capitalism and Videogames* by media theorists Nick Dyer-Witheford and Greig de Peuter, exemplifies this argument by analyzing how gaming reflects and is constitutive of “empire.” A concept borrowed from Michael Hardt and Antonio Negri, “empire” denotes “a system of global ownership, privatized property, coercive class relations, military operations, and radical struggle.” The main assertions of such ideological or anti-imperialist critiques are that (1) videogames are intrinsically linked to “the military entertainment complex”; (2) they justify and normalize “a state of permanent warfare as a response to geopolitical problems”; (3) they “reinforce an ‘us against them’ perspective”; and (4) they “sanitize violence.” Nick Dyer-Witheford and Greig de Peuter, *Games of Empire, Global Capitalism and Videogames* (Minneapolis, MN: University of Minnesota Press, 2009), xxix.
2. Gonzalo Frasca, “Videogames of the Oppressed, Critical Thinking, Education, Tolerance, and Other Trivial Issues,” in *First Person, New Media as Story, Performance, and Game*, ed. Noah Wardrip-Fruin and Pat Harrigan (Cambridge, MA: MIT Press, 2006), 85–94.
3. Rafael Fajardo, “Pixels, Politics and Play: Digital Video Games as Social Commentary,” in *Intelligent Agent* 3, no. 2 (2003), accessed February 19, 2016, [http://www.intelligentagent.com/archive/Vol3\\_No2\\_gaming\\_fajardo.html](http://www.intelligentagent.com/archive/Vol3_No2_gaming_fajardo.html).
4. Rafael Fajardo. See note 3.
5. Rafael Fajardo. See note 3.
6. Micha Cárdenas, “Becoming Dragon, a Transversal Technology Study,” in *C-Theory*, (April 2010), accessed February 19, 2016, <http://www.ctheory.net/articles.aspx?id=639>.
7. Néstor García Canclini, *Latinoamericanos buscando lugar en este siglo* (Buenos Aires: Paidós, 2002), 61.
8. Phillip Penix-Tadsen, *Cultural Code* (Massachusetts, MA: MIT Press, 2016), 9.
9. Martín Hopenhayn, “Globalization and Culture: Five Approaches to a Single Text,” in *Cultural Politics in Latin America*, ed. Anny Brookbanks Jones and Ronald Munk (New York: St. Martin’s Press, 2000), 154.

## BIO

Claudia Costa Pederson holds a PhD in Art History and Visual Studies from Cornell University. She is currently Assistant Professor of Art History in Digital Media, at Wichita State University and Assistant Curator of New Media for the Finger Lakes Environmental Film Festival. Her writings on videogames, digital photography, wearables, augmented reality, and techno-ecological art are published in *Review: Literature and Art of the Americas*, *Journal of Peer Production*, *Media-N*, *Afterimage*, *Intelligent Agent*, *Eludamos*, as well as the ISEA, DAC, and CHI conference proceedings. Forthcoming book chapters include bio-robotics, feminist media, and video, and will appear in *Latin American Modernisms and Technology*, ed. Maria Fernandez (New Jersey: Africa World Press, TBA); *The Philosophy of Documentary Film*, ed. David LaRocca (Landham, MD: Rowman & Littlefield, TBA); and *Indie Reframed: Women Filmmakers and Contemporary American Cinema*, ed. Claire Perkins, Linda Badley, and Michele Schreiber (Edinburgh: Edinburgh University Press, 2016).

# Art, TECHNOLOGY,<sup>and</sup> **PUBLIC SPACES:** A LATIN AMERICAN *PERSPECTIVE*

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**KEYWORDS:**  
MEDIA ART, LATIN  
AMERICA, ROBOTICS,  
LAND ART,  
SCIENCE FICTION,  
MODERNISM,  
TECHNOLOGICAL  
RECYCLING, URBAN  
INTERVENTIONS, ART  
AND TECHNOLOGY,  
INFRASTRUCTURE

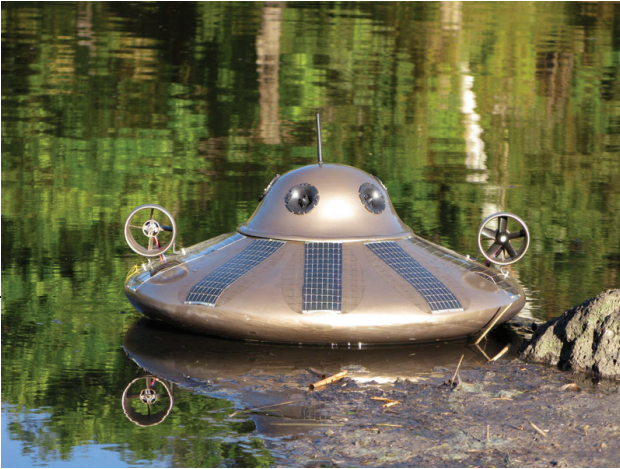
THIS ARTICLE WAS DEVELOPED AS PART OF THE RESEARCH PROJECT, "RECONFIGURACIONES DE LA TECNOLOGÍA EN LA EXPERIENCIA ARTÍSTICA. LA HISTORICIDAD DE LA TÉCNICA COMO PARTE DE LA REFLEXIÓN TECNOLÓGICA DEL ARTE" AT UNTREF.

This article reviews and analyzes a series of projects and interventions developed by Latin American artists who creatively explore the use of technology to rethink the relationship between technical progress, urban development, and social well being. The projects deal with some of the most alienating, unsustainable, and contradictory aspects of Latin America's megalopolis. Yet they do so by approaching the issues creatively, poetically, and playfully.

The works combine elements and strategies typical of urban interventions, land art, performance, and relational aesthetics, combined with the creation and deployment of technological devices. While much of the experimentation with art and technology focuses on cutting edge devices, these projects seek to do the opposite. They rethink the huge socio-technical networks that were built to provide modern cities with basic infrastructures (drinking water, sewer systems, and communication and transportation networks), at a time when these infrastructures and the very notion of the city as a shared public space are in crisis.

The first group of projects focuses on the broken promises of modernity in the region, underlining that in fact technology and progress do not come hand in hand. They question the sustainability of local models of urban growth. They do so by referencing science fiction, the exploration of outer space, and the new promises of robotics and nanotechnology; sometimes with longing, other times with humor or irony. But in all cases they create fascinating pseudo-futuristic machines made out of recycled technology, halfway between *Blade Runner* and literature's "magical realism." The common strategy is to take these machines on some kind of





(left and right) Arcángel Constantini, *Nanodrizas*, 2009. Used with permission.

exploration or mission, be it sending a robot to draw the map of a city onto the desert's surface; launching a spaceship to navigate through abandoned railways to rediscover now mostly isolated rural towns; or floating devices through contaminated rivers and streams in an attempt to clean them.

*Nanodrizas* by Arcangel Constantini (Mexico) draws attention to the social and environmental costs brought on by sudden industrialization. For this project Constantini created a modular, open source robotic species that seeks to communicate and interact with its environment. Looking like small UFOs, these robots feed off sunlight using solar panels, and float through contaminated rivers and streams around Mexico City. With the help of sensors and microprocessors they analyze the quality of the water and release biochemicals to help clean it. Though the

nanodrizas look like flying saucers straight out of an early science fiction movie, they also bring about current visions of the future, particularly as it relates to the new promises of nanotechnology.

*S.E.F.T. 1* by Iván Puig (Mexico) deals with the social consequences of the political decision to privatize the railway system in Mexico, given the growing concentration of population and resources in the big urban centers—small towns fall into oblivion. Puig assembled what looks like a spaceship using an old truck to travel through abandoned railways in Mexico. With this vehicle he visits communities that used to have trains passing through them but, since the privatization of the railway system, don't anymore. He documents through video, pictures, and interviews the changes that communities experience when trains no longer pass through their towns.



(left and right) Iván Puig, *Seft*, 2006/2011. Used with permission.

Rodrigo Derteano, *Nasca City*, 2010. Used with permission.

*Nasca City* by Rodrigo Derteano (Peru) thematizes the fast, unplanned, and informal expansion of cities into the desert. Derteano built a robot to draw the map of a full-scale imaginary city on the surface of the Peruvian desert. The automatized vehicle plows the earth to reveal its underlying color, drawing the lines that make up the city. The robot draws its way through a remote desert landscape that might as well be Mars (perhaps referencing the colonization of outer space), as there seems to be no life around it. The project brings into question the modern idea of the city, bound by functionalism and optimization, with little or no capacity to integrate informal urbanism and spontaneous reconfigurations of social space. It models a city unable to incorporate sustainability issues, demonstrating the absence of any urban planning involved in the rapid expansion of city life into the desert of Lima.

The second group of projects described in the article is a set of interventions at smaller scales, which deal with some of the most alienating circumstances of Latin American urban life. These projects deal with the periphery within the city. They also involve hybrid materials and practices, as well as technological recycling.

Rodrigo Derteano, *Nasca City*, 2010. Used with permission.

Both *Parasitophonía* by Leonello Zambón and *Urban Parasites* by Gilberto Esparza refer to the condition of living on or off of another organism: in the first case, by feeding off the city's chaotic activity and sounds; and in the second, by leeching off the city's waste and energy sources. They both reference science fiction by pointing to a decadent aspect of the present, as it relates to an idea of the future (our present time) that dates back to the eighties. In these projects there seems to be no tension between the empowering and alienating effects of technology, only certainty of the latter.

In *Parasitophonía*, Zambón (Argentina) designed a bicycle with a wooden trailer that has its own custom recording and sound systems, work tools, desk and stool, and other gadgets. The artist cycled through





Gilberto Esparza, *Urban Parasites*, 2007. Used with permission.

the city and its outskirts recording sounds, processing and remixing them in real time, and playing them back modified and amplified to the howling traffic and the hurried people walking down the streets.

Meanwhile in *Urban Parasites*, Esparza (Mexico) made several species of robotic parasites—different hybrids made out of recycled technological waste and various materials. This artist placed the parasites in different parts of the city, where they could feed off specific energy sources. They move and make sounds as they collect what they need from their surroundings: one robot crawls through power cables, absorbing their energy, while another is capturing sounds of the environment and reproducing them at random; one robot hangs from a light post and persistently swings toward the light, while other tiny robots are going through piles of trash lying on the sidewalk and streets. Esparza stages a view of the present very much like past ideas of what the future would look like, in which autonomous technological beings inhabit our cities, but in a completely absurd and parasitical way, living off other organisms without producing anything.



Leonello Zambón, *Parasitophonia*, 2010. Used with permission.





Gilberto Esparza, *Urban Parasites*, 2007.  
Used with permission.

All the reviewed projects work with past ideas of the future and refer to science fiction in order to think about the present. Is it to speak of a future in which mankind has finally arrived at a stage of technological development that ensures its own destruction, as well as that of its environment? They seem to reference the failure of modernism and the broken promise of technology bringing about a better future—alienating instead of liberating the subject. Might revisiting these issues with irony, playfulness, nostalgia and humor be an attempt to warn and bring up to date the statement of frustration and alienation regarding our shared future?

Are they perhaps suggesting that the new promises of technology look a lot like the old ones? Is the creative use of contemporary technologies to rethink certain aspects of the modernist project as a way to make evident a revival of its failed ideals; or to warn about the risks of contemporary rationality, driving us once again towards the alienation of the subject instead of its liberation?

If utopia usually calls for an ideal society in the future—a positive and possible reality in a time and place far from the present—what could we say about these artists and their work? Could they still be thought of as utopian if they seem to want to intervene and modify the present, or if they trust that art in such a context is a means for social change?

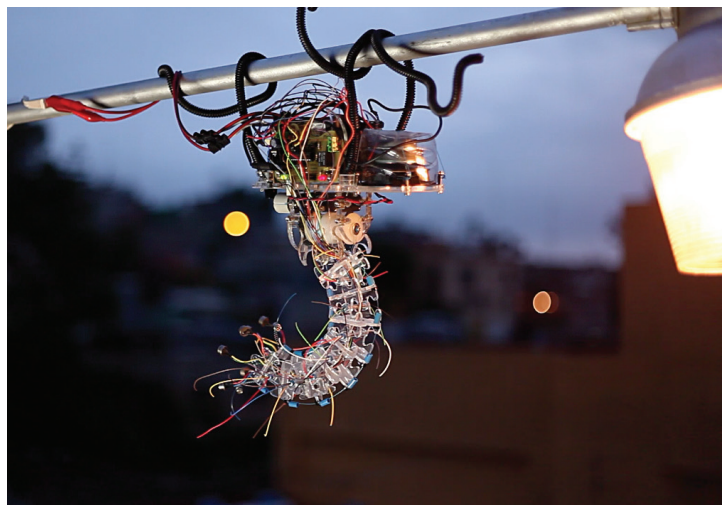




## BIO

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Messi has curated and worked in the production of several new media, video, and photography exhibitions in Argentina. She writes texts on art and new media and has published in catalogues and journals in many different countries. She has done editorial production for several books on photography, media, and contemporary art.



Gilberto Esparza, *Urban Parasites*, 2007. Used with permission.

# FROM/ABOUT LATIN AMERICA: LOCAL POETIC IMAGINARIES

## for the Development of the Argentinian NEW MEDIA ART FIELD

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**KEYWORDS:**  
LATIN AMERICA,  
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ART, SCIENCE,  
TECHNOLOGY,  
POLITICS

### ON SHAKY GROUND

The intersection between art, science, and technology around the globe has become an extensive, complex, and relatively undefined territory, shaped by certain characteristics in constant struggle. [1] Its practices embody the convergence of multiple disciplines, media, and methodologies, which not only elude fixed categorizations of technological artistic practices, but also challenge the traditional conception of material and object-oriented artwork, individually or collectively produced. As a matter of fact, these conventional notions still largely dominate the history, theory, and aesthetics of contemporary art. In this regard, Domenico Quaranta has defined the new media art field as an independent art world, since its development has taken place quite separately from the growth of the broader world of non-technology-based contemporary art. [2] In the same vein, Geert Lovink asserted that new media artworks are forms in search of a form. He claims: "New media, to its credit, has been one of the very few art forms that has taken the programmatic wish to blow up the walls of the white cube seriously. This was done in such a systematic manner that it moved itself outside of the art system altogether." [3]

At the crossroads of artistic, scientific, and technological spheres, technology-based projects are generally conceived as artworks, although they may also be described as inventive devices, machines, apparatuses, artifacts, or experiments. These classifications derive from their focus on the research phases, the primacy of the creative process over the finished work, and the successive instances of trial and error that guide their execution. Due to their inner condition of new media artworks, they often function under the logic of a machine. Their operations don't admit mistakes: if the piece doesn't work, the aesthetic experience cannot be fulfilled. This is one of the main reasons why artists involved with



technology-based projects need to acquire knowledge from other fields, such as robotics, informatics, physics, and neuroscience. Furthermore, on several occasions artists team up with engineers, biologists, and/or mathematicians, which enables them to go through the multifaceted investigation and production process.

Despite the fact that these aspects have determined new media art produced throughout the world, I argue that in the Latin American context, and especially in Argentina, this situation is even more complex given two principles that I recognize as identitarian and institutional. Whereas the first aspect is related to the imaginaries of modernization that have weaved through the Argentinian new media artistic framework, the second refers to the arduous development of the institutions that aim to promote the exchange between art, science, and technology in the country.

### IMAGINARIES OF MODERNIZATION

According to Beatriz Sarlo, Argentinian imaginaries of modernization have been shaped by a dichotomy between European modernity and local traditions. [4] The country has been run through poetic and ambivalent conceptions. Throughout its history, it has faced several attempts to build a local industry by appropriating technologies and by adopting European models, and later on, North American ones. The utopia of Argentina as an icon of a modern nation that emerged by the end of the 19th century and persisted into the following one, gave birth to local, cultural, and

technological spheres taken as universal domains, executed by universal men. Based on ideas of progress and growth, both deeply rooted in positivist philosophy, the so-called "Generation of '80" stood for the concept of "civilization" against "barbarians" (the indigenous population that inhabited the country back then). [5] Thus, Argentina is commonly known as the "Paris of Latin America": instead of recognizing itself as a *mestizo* country, it has erased its indigenous history, chasing the illusion of the "white nation." Imported models have been considered exemplary and neutral paradigms that were uncritically introduced and pursued. In this sense, the mimetic repetition of exogenous codes turned into a common strategy to legitimize Argentinian practice.

Nowadays, the outcome of this process has given way to the creation of a local new media art field that repeatedly highlights technology—for instance, by putting a strong emphasis on lighting effects or automatizing rapid movements of the devices that compose the work. An example is the recent call for submissions from Centro Cultural Recoleta, a well-known cultural center in Buenos Aires, for events focused on innovation to be included in its annual program. The initiative is mainly interested in all kinds of artistic projects that deal with innovation in terms of astonishing technological developments: attractive laser installations, impactful interactive screenings, frenzied DJ and VJ mixes, etc. In consequence, the utopian imaginaries of modernization that have built a partnership between technological

novelty and cultural progress are still active. As a result, the characteristics of our local context are usually ignored or viewed from the perspectives of other realities, thus avoiding the foundation of a personal and independent discourse.

Neither attitude considers the inherent reciprocal tensions between art, science, technology, and politics. As Claudia Kozak puts it: "Since the technical/technological phenomenon of each era is bounded by a certain society, this implies certain historical and social hegemonic construction of the technological meaning... As long as the technological poetics take over their contemporary technical phenomenon, they are also political." [6] When the author points out that new media art overlaps the artistic and technical phenomena in a particular social fabric that intertwines individuals, tools, institutions, and systems of thought, she is suggesting that the encounter of art and technology is not a neutral junction. Therefore, it is possible to overcome the common position that tends to accept, passively and uncritically, the modern technological project as an undeniable mandate, understanding instead that it has evident political nuances. [7]

### INSTITUTIONAL DEVELOPMENT

The imaginaries of modernization enter institutions, and institutions shape specific "ways of being-with technology." [8] Consequently, institutions embody a particular technological rationality and sensitivity, which are projected onto their programs. This shows that the meaning of technology goes beyond its instrumental definition, understood as the practical application of knowledge. It follows that technology implies a complex map that not only interconnects material objects, rules, and operations, but also the use that particular individuals give to them, as long as they decide institutional action lines. In other words, the imaginaries of modernization are expressed in the institutional programs, while all their decisions and activities—the institutional management as a whole—contribute to devise the aforesaid imaginaries.

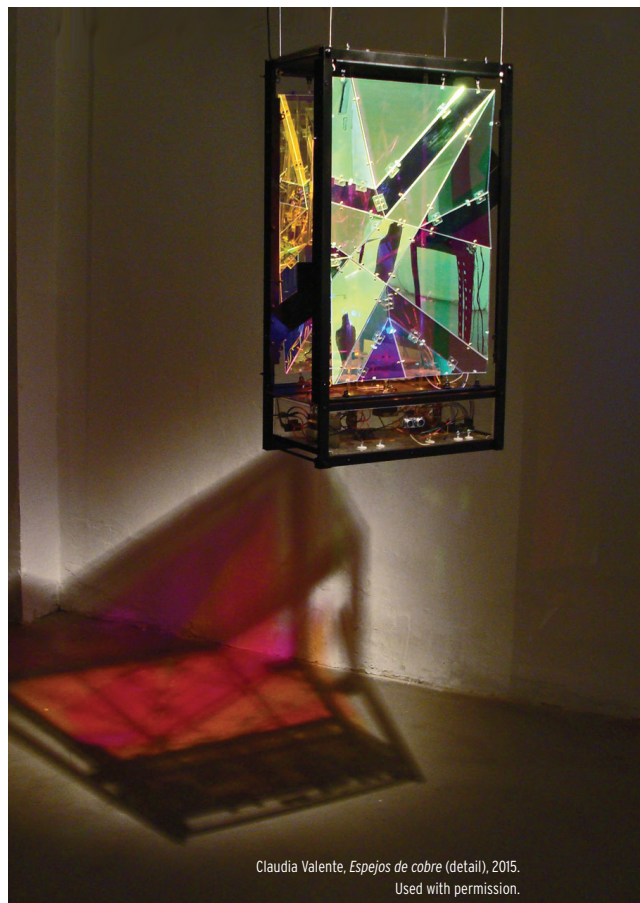
The study of both the imaginaries of modernization and the institutional practices aims to subvert certain paradigms of thinking and action that have marked the Argentinian new media art field.

If we go over some of the initiatives implemented by Argentinian institutions during the last years, we notice that many of them haven't undertaken criteria to promote an analytical perspective regarding the local implications of the relationship between art and technology. For example, this is the case of *Noviembre Electrónico*, an event held in the Centro Cultural San Martín, which depends on the Ministry of Culture of Buenos Aires. On the government's website, it is described as a space of convergence for artists, developers, designers, and thinkers of digital culture and electronic arts. This definition highlights the encounter of the main actors of the field, but doesn't focus on the conceptual lines that justify this confluence.

Tracing the history of the Argentinian venues committed to fostering the exchange, production, exhibition, and study of new media art, we see they've faced several difficulties that have affected the sustainability of their projects. The growth and expansion of institutions have not been continuous or linear. Due to political, economic, and sociocultural circumstances that have taken place in the past decades, important endeavors came to an end. As an example, this was foreseen by the closure of the Instituto Di Tella during Juan Carlos Onganía's dictatorship in 1970: and later on, by the end of the '70s, the cessation of the interdisciplinary activities developed at the Centro de Arte y Comunicación, two pioneering places for this research. The aforementioned episodes announced a pattern that seemed to be repeated in other cases caused by appalling political circumstances, which cannot be compared to later democratic regimes. This pattern was the result of institutional strategies that, once boosted and disseminated, impacted the cultural scene and



Claudia Valente, *Espejos de cobre*, 2015.  
Installation, mechatronic object, light table,  
copper sulfate crystals, and sketches, 50 x 180  
x 40 cm (object); 60 x 80 x 60 cm (light table).  
Used with permission.



Claudia Valente, *Espejos de cobre* (detail), 2015.  
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eventually dissolved. This dynamic could be called “outbreak growth” and remains valid today. A recent case study is Espacio Fundación Telefónica in Buenos Aires, whose changed management in 2013 shifted its interest from new media art towards other topics related to innovation and the role of technology in contemporaneity. Nowadays, Argentina still lacks museums, cultural centers, or foundations entirely dedicated to new media art.

As a result, the identitarian and institutional factors hampered the investigation and encouragement of an Argentinian new media art language. Despite the fact that the country has become the scene for a great number of artists who have been experimenting with the many possibilities offered by technologies, there is still not enough critical reflection about the course that the local production is taking.

## NEW DIRECTIONS

To reverse this trend, the institutional platforms must face a different direction through the implementation of programs that could deconstruct the established imaginaries, and hence explore local mindsets connected to Argentinian research and the creative context. They should bring transformations by stimulating a local new media art that doesn't necessarily stick to the exposition of regional, historical, and political events, nor to low technologies (e.g., dismantling and recycling all kinds of devices). It is required to outline a discourse that may assume the local condition without placing technologies at the epicenter of the artworks. Instead, technology should be used in a relevant way, in accordance with the concepts that the artworks develop throughout the exploration of possible relations among materials, devices, and poetics.



In this line of work, some interesting projects have been carried out. *Especjos de cobre* (2015) is an installation by Claudia Valente conceived as an iridescent acrylic mirror. Its folds arise from the detailed investigation of the growth pattern of copper sulfate crystals, which were grown by the artist. Her observations have shown that the atoms of the crystals present an ordered distribution and that their angles remain fixed during their reproduction. The encoded mathematics in nature has been transferred to a mechatronic object that replicates the crystal's morphogenesis while reflecting the visitor on its faceted structure.

On the other hand, Guadalupe Chávez and Gabriela Munguía have been investigating the relationship

between art, science, and robotics through the development of *Eisenia* (2014), a robotic sculpture that considers contemporary technologies and models of production. The engine is made from mechanic and electronic devices based on the functioning of 3D printers. The sculpture has motors that regulate the dripping of hydro nutrients produced by numerous Californian worms that live inside the machine. Accordingly, the printing mechanism causes the seeding of wheatgrass, which grows on a semi-hydroponic substrate.

Another interesting case is the work of Sebastián Pasquel, who has been creating useless machines integrated by automaton mechanisms that perform simple actions and collect portraits of the artist's family found in photo albums. *f-242* (2015) consists of different pictures engraved on gypsum boards, which are gradually grinded by rotary polishing machines that turn gypsum into powder. This constant action gives the installation an ephemeral nature that contrasts with the remaining small mounds of plaster displayed next to the boards. The slow and incessant motion reappears in *120 80 mm/Hg* (2013), where a fine red thread moves from the spool to a light box with the portrait of the artist's mother, crossing a cartography of newspaper obituaries. As the thread goes from one point to the other, it seems to sketch the graphic recorded by an electrocardiogram. In fact, *120 80 mm/Hg* makes reference to normal adult blood pressure.

Germán Sar's reactive installation entitled *Mecánica de la dialéctica* (2014) presents two opposite typewriters disposed on independent bases, three meters apart. Their keys are locked and don't present any characters on them. A long reel of white paper, with no inscriptions on it, joins both machines. When a motion sensor detects the proximity of the visitor, the typewriters automatically begin to type spaces, generating repetitive mechanical sounds. This action propels the continuous movement of the paper,



Guadalupe Chávez & Gabriela Munguía, *Eisenia, máquina de impresión orgánica*, 2014. Robotic-organic installation, 70 x 70 x 180 cm. Used with permission.

which creates a sort of analogic loop. By means of the inquiry of opposed ideological positions, Sar creates a metaphor for the dialectical game that comes with all kinds of power clashes. Additionally, the title alludes to the dialectical-logical process that defines the intellectual work.

An analogous metaphor of machine and human behavior characterizes Juan Rey's works. Printed Circuit Boards (PCB) show different images (such as the artist's brain and paper balls) traced by thin copper lines, connected to photovoltaic panels and LED lights. Once the device is illuminated, the current pulse goes through the copper lines, the circuit is completed, and the light turns on. Besides referring to the features of electronic circuits, these pieces suggest metaphors of the circulation of ideas and the possibility of "shedding light" on new ones.

Due to their autonomous functioning, these are prime examples of works that undermine the traditional notion of new media artwork. What is more, they were created with fairly simple and affordable



(top) Sebastián Pasquel, *f-242*, 2015. Installation, plaster plaques, and motors, 20 x 15 cm (each plaque). Used with permission.  
(middle) Sebastián Pasquel, *120 80 mm/Hg*, 2013. Installation, light box, thread, and needles. Used with permission.  
(bottom) Germán Sar, *Mecánica de la dialéctica*, 2014. Mechanic installation, typewriters, motion sensor, automatization hardware, and paper. Used with permission.



parts, even though they neither pursue a low-tech aesthetic, nor try to address "Latin American-ness." Like Valente, Pasquel, Sar, Chávez, and Munguía's installations, the technologies involved are always choreographed through the formal, aesthetic, and conceptual axes of each artistic proposal, depending on personal investigations that concurrently introduce singular poetics to the Argentinian scene.

In short, interesting, local, and technology-based art may often arise when artists do not attempt to speak *about* Latin America as the region is seen from abroad, for this ultimately tends to reinforce the confrontation between peripheral and core countries. Rather, they forge their own discourse *from* Latin America that might end up outlining a new way of thinking and perceiving the art of the region and the region itself.



Juan Rey, *Circuito*, 2013. Printed Circuit Board, photovoltaic panels, and LED lights, 110 x 80 cm. Used with permission.





Juan Rey, *Pliegue (las seis ideas)*, 2013. Printed Circuit Board, photovoltaic panels, and LED lights, 65 x 65 cm. Used with permission.



Juan Rey, *Despliegue*, 2013. Printed Circuit Board, photovoltaic panels, and LED lights, 85 x 85 cm. Used with permission.

## REFERENCES

1. I refer to all kinds of artistic practices that make material, aesthetic, and conceptual use of electronic and/or digital technologies in different phases of the creative process. It is a broad scene, constituted by a wide variety of manifestations, such as interactive installations, immersive environments, virtual and augmented reality, artificial life, data visualization, locative media, parametric design, bio art, etc. Although certainly video in all its forms—video installation, video performance, video sculpture, etc.—is part of the new media art field, it isn't included in this study because its development has had a different logic than the one examined in this essay.
2. Domenico Quaranta, *Beyond New Media Art* (Brescia: Link Editions, 2013).
3. Geert Lovink, "New Media: In Search of The Cool Obscure," 2007, accessed February 25, 2016, <http://bampfa.berkeley.edu/media/lovink.mp4>.
4. Beatriz Sarlo, *Una modernidad periférica: Buenos Aires 1920 y 1930* (Buenos Aires: Nueva Visión, 2007), 15.
5. Between 1880 and 1910 Argentina was governed by the *Generación del 80* (Generation of '80), whose members held the highest political and economic positions. Among other policies, they intended to turn Argentina into a modern nation by establishing a European-style liberal political regime.
6. Claudia Kozak, ed., *Tecnopoéticas argentinas: archivo blando de arte y tecnología* (Buenos Aires: Caja Negra, 2012), 182–183.
7. Héctor Schmucler, "Apuntes sobre el tecnologismo o la voluntad de no querer," *Artefacto* (December 1996), accessed February 26, 2016, <http://www.revista-arteactio.com.ar>
8. Carl Mitcham, "Tres modos de ser con la tecnología," *Anthropos*, no. 94/95 (1989): 14.

## BIO

Jazmín Adler is an Argentine art historian, researcher, and curator who lives and works in Buenos Aires. She is pursuing her doctoral studies with a scholarship from the National Scientific and Technical Research Council (CONICET). Her research interests cover the relationship between art, science, technology, and politics in Latin America.

She is a member of Ludió: Latin American Exploratory of Poetic/Political Technologies (Instituto Germani, Universidad de Buenos Aires) and teaches "Theory and Aesthetics of Electronic Arts," "Theory and Aesthetics of Interactive Art," and "Development and Production of Electronic Arts Projects" in the Masters in Technology and Aesthetics of Electronic Arts Program (Universidad Nacional de Tres de Febrero), as well as "Digital Art II" at Universidad Maimónides. Over the past years, she has curated new media art exhibitions such as *Sincronías en abismo* (Buenos Aires Photo), *VISCERAL* (Panal 361) and *Mecánicas de pensamiento: obras en proceso* (Museo Castagnino).

# REVIEWS & REPORTS

Vol. 12 N. 01

# REWINDItalia

EDITED by STEPHEN PARTRIDGE  
and LAURA LEUZZI

> Jon Blackwood <

**REWINDITALIA**  
**EDITED BY STEPHEN**  
**PARTRIDGE AND**  
**LAURA LEUZZI**

Jon Blackwood

Video art is dead in the post-digital age. It's not quite historically remote enough to escape our jaundiced view of digital positivism, nor does it attract much by way of the post-digital nostalgia, surrounding obsolete technologies and methods of working. A student attracted by a super eight camera is still likely to look askance at the chance of working with video technologies of the 1970s and early 1980s. But if "video art" as a discrete technology and set of aesthetics is now a historical phenomenon, then the writing of that history, if this volume is anything to go by, is just entering its richest phase.

*REWINDItalia* edited by Stephen Partridge and Laura Leuzzi, is a development of the research team that previously produced *REWIND: British Video Art in the 1970s and 1980s* (John Libbey Publishing, New Barnet, 2012). The approach to the subject taken by the editors is admirable. They eschew the opportunity to set themselves up as "gatekeepers" to what, for many, will be unfamiliar terrain; rather, they seek to open out that terrain through a mixture of interview, criticism and first hand account from key figures involved in the development of video art in its early growth in Italy. The text, in eighteen interlinked but independent chapters, gives the reader a comprehensive overview not just of key works and actors, but a real understanding of the ecology of Italian video art from this time. The interaction of curators, galleries, funders and publics, a complex mesh of interactions, is developed subtly.



One of the real strengths of this text is the way in which it challenges platitudinous half-truths about the history of video art, that have almost become true through frequent repeating. The discovery of some evidence of John Cage's appearance on Italian television in 1959, with a performance of *Water Walk* amongst his contributions to the *Lascia o Raddoppia* (Double or Nothing) quiz show, is amongst the delightful new insights that can be found throughout the text.

The book moves ably between broad contextual themes and the roles played by individuals. One of the most compelling chapters is the interview with the pioneer of video art in Italy and the founder of art/tapes/22, Maria Gloria Bicocchi. art/tapes/22 was a video production and distribution company that was founded in 1972, and folded five years later for lack of funding. However, in the short years of its existence, as the interview shows, this organisation provided a vital link between emerging video production in the United States, and Europe.

Bicocchi, from a very well connected intellectual family, was able to work with the likes of Vito Accornci in production, as well as to distribute key early works, by individuals such as Lucio Pozzi and Gino de Dominicis. Bicocchi's insights are compelling, in terms of the ways in which video was used differently; she states that Europeans regarded early video art as drawing, whilst American artists perhaps had a more professional approach to the medium. There is perhaps some frustration for the reader in the lack of foresight to invest in these projects, and an interesting take, late in the interview, on the present status of these early video works;

"Students look at them like something historical. We represent the last past they can still look at. Now they look at us with veneration." [1]

Paolo Cardazzo's discussion of the introduction of video art into the space of the Galleria del Cavallino

is instructive, in terms of the international links that the embryonic video art scene in Italy was making at the time. This gallery introduced Italian audiences to the works of Stan Brakhage, Andy Warhol and other key American artists; the discussion of the famous meeting in Motovun, Croatia, opens out some insights into the relationships that were developed with emerging Croatian artists working in what was called "New Art Practices" (performance, video) at the time in ex-Yugoslavia, and the exchanges that were promoted between figures such as Sanja Iveković and Dalibor Martinis, and their Italian counterparts.

Simonetta Fadda's contribution, on the reception and understanding of video art in 1970s Italy, offers insights into the medium beyond the scope of the essay. She observes that:

"Video revealed itself to be a problematic medium, able to introduce new revolutionary factors in the artistic creation, bearer of a work economy in sharp contrast with the 'individualistic' one of the artist-hero on which the art market is based." [2]

Fadda shows that video was initially understood in Italy as a means of promotion, as a secondary activity in an artist's overall *oeuvre*; also, reveals the status of video as linked to revolutionary political thought and ideas, shown in trade union meetings, universities and hyper-active cinema and film clubs throughout the 1970s. Nonetheless, as Fadda shows, video struggled in this early period of enthusiasm and interest to really identify a particular niche or role for itself within contemporary art, instead occupying a problematic status. Video's potential was felt to be latent and unrealised, by the end of the decade.

This volume is also very strong on the technical aspects of video art, focusing adroitly both on the problems of pioneers and the on-going difficulties of maintaining and recovering early video pieces from the fragile and decaying medium in which they were

originally recorded. Sean Cubitt's essay on Glitch Aesthetics is perhaps the best example of this, focusing on accident and unwitting technical interventions, and the semiotic significances that they have come to assume.

Even for the dedicated student of early video art, there is a great deal to learn. Personally, I knew very little about the relationship between early UK video art and its counterpart in Italy, this very useful formal and contextual comparison opens out both scenes in an engaging comparative study, and suggests possibilities for future studies, in the relationships between video art and television history.

Historians will appreciate the last two chapters in this volume; a re-printing of a seminal classificatory essay by Vittorio Fagone, first published in 1988, and Laura Leuzzi and Valentino Catricalà's excellent chronology of Italian video art, starting with Lucio Fontana's televisual experiments at the beginning of the 1950s, right through to canonical late exhibitions of video in the early 1990s. The chronology enables the reader to understand the events mentioned by many of the contributors in an engaging context and this functions as an unusual summary and conclusion to the book, as a whole.

"We may mourn the ageing of our videos, but we should also praise the fine antennae with which they catch the signals from a living electromagnetic universe and integrate them into themselves as living artworks of the living order of time." [3]

Sean Cubitt's pungent observation on the ageing of video, and the historical quality of early iterations of the art form, functions also as a summation of the value of this excellent addition to scholarship on video art. This book is a significant contribution, based on a long and profound research journey, and an impressive network of actors. The cataloguing of their memories and observations, allow the

reader to completely re-think not only Italian video art from the period in consideration, but broader trends in European and American video. We must be very grateful for the fine antennae of Partridge, Leuzzi and colleagues who have put together such a compelling and engaging portrait of Italian video art practice.

"Mil Máscaras: An Interview with Pulitzer-Winner Junot Díaz (The Brief Wondrous Life of Oscar Wao)," by Matt Okie, *Identitytheory.com*, September 2, 2008, [http://www.identitytheory.com/interviews/okie\\_diaz.php](http://www.identitytheory.com/interviews/okie_diaz.php).

McGeorge Bundy, interview by Robert MacNeil, *MacNeil/Lehrer News-Hour*, PBS, February 7, 1990.

Darcey Steinke, interview by Sam Tanenhaus and Dwight Garner, *New York Times Book Review*, podcast audio, April 22, 2007, <http://podcasts.nytimes.com/podcasts/2007/04/20/21bookupdate.mp3>.

## REFERENCES

1. Maria Gloria Bicchieri interviewed by Laura Leuzzi and Stephen Partridge, *Rewind Italia*, Chapter 5, p. 129.2. Simonetta Fadda, "Italian Reaction to Video", Leuzzi & Partridge, Loc. Cit., Chapter 7, p. 145.
3. Anne Carr and Douglas J. Schuurman, "Religion and Feminism: A Reformist Christian Analysis," in *Religion, Feminism, and the Family*, ed. Anne Carr and Mary Stewart Van Leeuwen (Louisville, KY: Westminster John Knox Press, 1996), 14.

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## BIO

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# Where are WE in ART-SCIENCE?

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**KEYWORDS:**  
ART-SCIENCE,  
TECHNOLOGY,  
SCIENCE,  
COLLABORATION,  
EMERGING,  
NANO, SCALE,  
ASTRONOMICAL,  
TECHNARTE,  
FUNDING

## **TECHNARTE 2015 CONFERENCE, LOS ANGELES**

**DECEMBER 10 - 11, 2015, BERGAMOT STATION, SANTA MONICA, CA**

**TECHNARTE: FUSION OF ART, SCIENCE AND TECHNOLOGY, LACDA, LOS ANGELES CENTER OF DIGITAL ART**

With slight variations in meaning, the term art-science (Born & Barry 2010), artscience (Edwards 2008), art/science, art+science, or art|science, has largely been used to refer to the practice of integrating artistic aesthetics, theme, medium, tools and processes with that of biological and physical sciences and technology. [1, 2, 3] Today, art science technology collaborations constitute a contemporary global trend in which artists and designers work collaboratively with frontier areas of science and emerging technologies to create works that represent the unique synthesis enabled only by this particular method of collaboration. This mode of collaboration, with its virtually unprecedented freedom to explore and to apply groundbreaking specialized science and technology, aims to promote new possibilities in art; however, as a philosophical dilemma, also provokes the question of funding challenges required to support such lofty efforts.

Over the course of the past two decades, an extensive network of committed players have formed to contribute to a vibrant worldwide community designed to harvest this ingenuity. The scope continues to expand. These players include academic programs and institutions, industry leaders, professional journals and publications, non-profit organizations, conferences, festivals, and public outreach efforts. Technarte is one of such entity that hosts conferences to showcase work in this field, and to provide artist residency programs in places such as the Antarctica and the Observatory of Roque de los Muchachos. The organizational body for Technarte is Innovalia Association, a Spain-based independent private R&D partnership of the Associated Research Lab, which represents an industry alliance providing solutions in the areas of tourism, communications, security, transportation, aeronautics, manufacturing & energy. Since 2006, the Technarte International Conferences on Art & Technology has been organized annually in Bilbao, Spain. The 2015 conference, along with an exhibition at LACDA, was held for the first time in the United States. Director Jon Astorquiza kicked off the conference, speaking on risk taking, and society's role in investing in innovation, as playing a critical role at the forefront of art/science collaborations that deeply fuse the essence of both artistic and scientific processes. Below I highlight some examples of featured artists at the conference and the exhibition.



Frederik De Wilde is a transdisciplinary artist from Belgium. He presented a wide range of work that included the growing of Nano juice around structures, swarm robotics, light and kinetic performances, and generative design. His most recognized work is a collaboration with NASA, and with Professor Pulickel Ajayan (Department of Materials Science and NanoEngineering) of Rice University, creating a type of Nano engineered material which he calls *99,9% NanoBlack*. (Fig 1) Grown out of carbon Nano tubes, this material absorbs all visible light, as well as some frequencies of infrared. De Wilde cans this material, and then creates square black paintings with titles such as *Hostage*, with the intention that these “blacker-than-black” paintings prove to be so dark that their volume disappears. In 1961, Ad Reinhardt described his *Abstract Painting* as being “A square (neutral, shapeless) canvas, ... trisected (no composition), ... no-contrasting (colorless) colors, ... which does not reflect its surroundings—a pure, abstract, non-objective, timeless, spaceless, changeless, relationless, disinterested painting—an object that is self-conscious (no unconsciousness) ideal, transcendent, aware of no thing but art (absolutely no anti-art).” These qualities are also seen in De Wilde’s *Hostage*, where he synthesizes technological advances with material inquiries to intensify the relationship between “an object that is self-conscious” and the spectator. In the context of our media and electronic device

oversaturated present-day society, De Wilde’s black paintings attempt to create an absolute darkness where not even light can escape in order to bring back the private and the personal. De Wilde claims that his work also references such speculative work as Piero Manzoni’s 1961 *Mierda de Artista*, where the cans provided a way for the artist to express an idea of “fetishisation and commodification of his own body substances”. [4] De Wilde’s exploration of material and form is prolific. His praxis of art-science also extends into the realm of radioactive glow, subatomic particles, geometry and behaviors, and 3D printable data structures.

Benhaz Farahi, an Iranian designer/architect, is a doctoral student in Interdisciplinary Media Arts and Practice at USC School of Cinematic Arts. Having earned two Master’s degrees in Architecture, her doctoral work primarily is concerned with interaction design as it relates to wearable technology and



Fig. 1. Frederik De Wilde, *NanoBlack-Sqr #1*, 2014, 99% air and 1% carbon, Installation View, © Carroll/Fletcher gallery.



Fig. 2. Behnaz Farahi, *Caress of the Gaze*, 2015, 3D Printing, SMA Actuators, Facial Tracking Camera. © Behnaz Farahi/Photographer: Charlie Nordstrom, Elena Kulikova.

interior-built environment. In particular, her inquiries include the relationship between the human body and the interactivity between motion and emotion. Her 2015 work titled *Caress of the Gaze* (Fig 2) is a collaboration between Autodesk, Pier 9 and MAD-WORKSHOP. Designed by Farahi using an actuation system, the team created a 3D-printed feather-like shawl equipped with a camera that controls the feather movement on the shawl to recognize and respond to the gaze of the other, much like goose bumps emerge from pores, or courtship ritual in birds. With this work, Farahi hopes to prompt the rethinking of the relationship between our bodies and the surrounding environment. Also of importance was using the latest 3D printing technology to enable the concept, in order to allow the fabrication of composite materials with varying flexibilities, combining different material properties and densities to be deposited in a single print run. In her explorations of the interactive built environment, Farahi's 2014 *Breathing Wall 2.0* seeks to explore the empathetic relationship between emotion and dynamic architectural space. Through a Leap Motion enabled gestural interface, emotion can be expressed through hand gestures to morph the physical space in which the user is enclosed.

Alessandro Scali is an Italian artist with a degree in Modern & Contemporary Literature from the University of Torino. For 15 years he worked in the fields of advertising, design, and digital art. Scali sees himself as a creative researcher and a Nano artist working on atypical and multi-disciplinary projects at the intersection of art, communication, technology and culture. [5] Since 2006, he has created artworks that are in the scale of micrometers and nanometers. I find his 2007 work titled *Actual Size* significant (Fig 3). The artwork in the exhibition is nothing but an ordinary inkjet print framed in a black frame. It is tinted in maroon/brown with the map of Africa in the center. Contrary to what one might imagine, the print is not an "enlarged" version of the Nano image. The Nano image itself is visually invisible even under an optical microscope. It can only be understood (not "seen") as collected data when electrons bounce off of the surface of the image. The invisibility of the artwork challenges the notion of what constitutes visual art; the invisibility of the content of the image, as Scali describes it, "... is an infinitely small Africa, measuring 350 x 260 nanometers. It represents a continent so big on maps but invisible to politics and public opinion." Shortly after the conception of the piece, Google announced the



Google Lunar XPRIZE - a \$30 Million prize purse as incentive for space entrepreneurs to create a new era of affordable access to the Moon and beyond. [6] The mission is to land a Nano Museum, the Moon Ark, on the surface of the Moon in 2017. [7] As one of the competitive teams, Carnegie Mellon University's Robotic Institute is planning to send a rover to the Moon this year that would carry the Moon Ark. The team's founder is legendary roboticist and founder of Astrobotics, Inc., William L. "Red" Whittaker; Scali is one of the artists invited to contribute Nano artwork to the Moon Ark project. It is Google's hope that the Lunar XPRIZE will result in cost-effective and reliable access to the Moon's rare metals and beneficial materials to be transported back to Earth, and to explore ways to expand the human race into outer space. Chairman and CEO of XPRIZE, Peter H. Diamandis, claims that "It is only with a commercial mindset and commercial technologies that we will achieve a long-term vision of space commercialization and industrialization." [8]

In addition to new and emerging artists relevant in this discussion on the international stage, Technarte LA 2015 also invited renowned artists such as Jennifer Steinkamp, whose work has long been a touchstone for large-scale projection installations employing synchronized panoramic projection and/or VR technology to alter our sense of phenomenological perception, motion and architectural space. During her talk, she showcased her decades worth of work dedicated to experimenting with technology such as computer animation and new media to enable immersive environments that rely upon the exchange between physical space and illusionistic space to blur the roles of the viewing subjects and the art objects. Her 2011 *Madame Curie*, was commissioned by the Museum of Contemporary Art, San Diego. The site-specific video animation responded to Steinkamp's recent research into atomic energy, atomic explosions, and the effects of these forces on nature. This research culminated in an ambitious seven-channel, synchronized projection that rendered realistic animations of flora drawn from

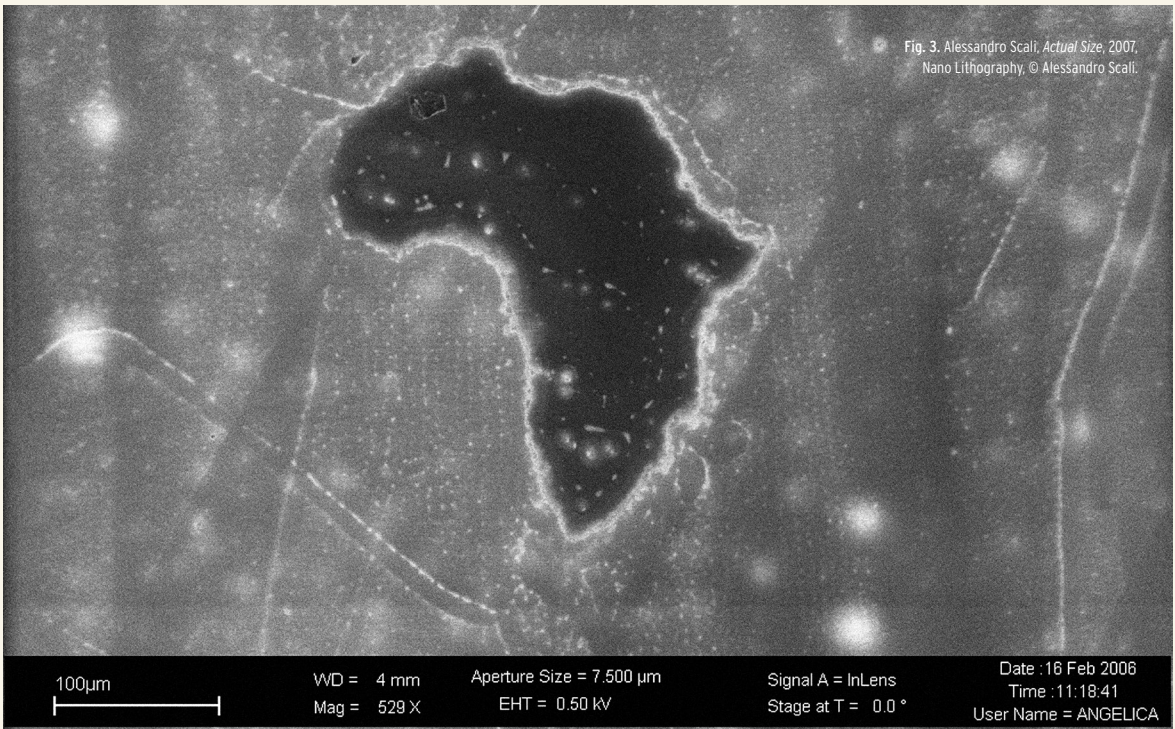






Fig. 4. Jennifer Steinkamp, Midnight Moment Times Square May 2016. *Botanic*, 2015-2016, © Jennifer Steinkamp.

a list of over 40 plants mentioned in Marie Curie's biography written by her daughter, Eve Curie. Not surprisingly, Time Square Arts' Midnight Moment, the public art program of the Times Square Alliance, currently features Steinkamp's *Botanic* (Fig 4). "Planted" in the mega commercial center of the world, *Botanic's* plasticized flowering condolence plants float inside of rigid cubic frameworks of gigantic screens; blown in the wind is an eerie juxtaposition between nature and man-made architecture.

Technarte LA 2015 also brought in notable artists such as Joaquin Fargas (Argentina) (Fig 5) who creates hermetically sealed ecosystems to remark on the fragility of our planet, and Patxi Arajo (Spain), whose work ranged from computing using neural oscillators, to meticulously rendered generative particles. Los Angeles based artists Nova Jiang and Cameron McNall of Electroland also discussed their work in the public realm utilizing participatory open systems and new media sensor-based interactivity.

The arts disciplines exist based on the premise of being able to think outside the box and carry out exceedingly creative human activities. The collaborations mentioned above leverage the arts' unique ability to ignite creativity under the most unlikely circumstances, to frame problems in order to challenge the status quo, and to inquire about the obscure in order to materialize bold ideas and experimentations. The speaker lineup at Technarte truly exemplifies the infinite possibilities that lie ahead for art-science collaborations.

As we further our endeavor in this extraordinary field, it is equally important to consider the complexity that exists in the funding puzzle that enables these increasingly more ambitious objectives in scale and scope. Undoubtedly, harvesting the interface between art, science and technology, now represents a significant trend in research-based universities and private innovation sectors alike. Their activities attract and thrive based upon





Fig. 5. Joanquin Fargas, *Big Brain*, 2013-2015, © Joanquin Fargas.

satisfying a dynamic range of funding objectives to serve research, teaching, and outreach requirements. In addition to Technarte, the list of such entities would include UCLA's art|sci Center, the MIT Center for Art, Science & Technology (CAST), Zero1 San Jose, Science Lab, and Ars Electronica to name a few. On a theoretical front, the model of art-science collaboration would embrace bold and daring experimentation and give researchers unparalleled opportunities, tools and resources, as well as the freedom to take risks and make discoveries; however, as seen above, the prevailing funding structure for such efforts is multidimensional and also begs an amplified, age-old question of what it means to capitalize on creativity and how to reconcile the paradox between freedom of artistic expression and corporate bias when "it is the hand that feeds you". As we plow deeper and deeper in this direction, we await to see how this paradox unfolds in the many years to come.

## REFERENCES

1. Arizona State University art/science Official Web Site, "Art/Science, Collaborations, Bodies, and Environments," 2016, accessed March 15, 2016, <http://artscience.arizona.edu/research-sites/waterwash>.
2. University of Puget Sound art+science Official Web Site, "Art|Science: Art + Science" 2016, accessed March 15, 2016, <http://www.pugetsound.edu/news-and-events/arts-at-puget-sound/artsci/>.
3. University of California Los Angeles art|science Official Web Site, "Art|Science" 2006, accessed March 15, 2016, <http://artsci.ucla.edu/TEST/?q=home>.
4. Tate Official Web Site, accessed March 15, 2016, <http://www.tate.org.uk/art/artworks/manzoni-artists-shit-t07667/text-summary>.
5. Alessandro Scali Official Web Site, accessed March 15, 2016, <http://www.alessandroscali.net/#!cv/c24lf>.
6. Google Lunar XPrize Official Web Site, "Google Lunar XPrize," 2016, accessed March 15, 2016, <http://lunar.xprize.org/>.
7. The Moon Arts Project, The Frank-Ratchye STUDIO for Creative Inquiry, College of Fine Arts, Carnegie Mellon University Official Web Site, 2016, accessed March 15, 2016, <http://moonarts.org/>.
8. Google Lunar XPrize Official Web Site, "Google Lunar XPrize," 2016, accessed March 15, 2016, <http://lunar.xprize.org/about/why-the-moon>.

## BIO

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[www.sifting.org](http://www.sifting.org)

# Constructing SOCIAL REALITY: <sup>THE</sup> ART of NETWORKED practice

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**KEYWORDS: ART,  
EDUCATION,  
TECHNOLOGY,  
NETWORKS, COMMUNITY,  
OPEN SOURCE,  
CONFERENCE, ACTIVISM,  
COMPLEXITY,  
DEMOCRACY**

*THUS THE COMPUTER, ON LINE TO USER-CONTROLLED NETWORKS, WILL BECOME THE TOOLS WE NEED TO PRACTICE THE CONSTRUCTION OF SOCIAL REALITY. THE RESULT WILL BE CULTURAL AUTONOMY ("SELF-LAW"), A NONHIERARCHICAL STRUCTURE OF AUTHORITY AND REALITY, CHARACTERIZED BY THE PROLIFERATION OF "AUTONOMOUS REALITY-COMMUNITIES." ~ GENE YOUNGBLOOD [1]*

Like the generation of artists working in "expanded cinema" in the 60s and 70s, who developed new forms of art, authorship, distribution and political action centered on media technology of the day, video artists from the 1990s on have developed new forms suited to the media technology of their day, a global communications network. Then as now, artists spoke of "new media art" as a tool for constructing a new social reality and viewed the communities and connections they forged as instrumental to - or even identical with the transformation, which they envisioned as anti-authoritarian and non-hierarchical. Then as now, a period of disillusion followed when the communitarian impulse largely failed to stir the rest of society to use media to change their lives; nevertheless, video art became a canonical style within the institutional art world. In our present moment, network neutrality has ceded to global censorship, the end of privacy and the commodification of attention ("eyeballs"). Many-to-many communications are a subculture (albeit a significant one), submerged in a one-to-many global broadcast empire. And network art, in its various manifestations, may be sailing on to institutional legitimacy.



The educational system of the 60s and 70s experienced a similar enthusiasm, with a similar trust in new media to transform and democratize education. The outcomes were more mainstream than those of the video art subculture: Media have become thoroughly integrated into the classroom, if not equally distributed. Their educational impact is still debated.

A little over a year ago, the Art of Networked Practice, an International Online Symposium on Innovation in Networked Research, Artistic Production and Teaching in the Arts, addressed the related topics of online communities and art practices and the impact of network technology on education. Sponsored by the School of Art, Design and Media, Nanyang Technical University, Singapore, and in association with Furtherfield, an artists' network anchored in London, the conference happened in some place, in no place, and in many places. Singapore was some place, where co-chairs Vibeke Sorensen and Randall Packer coordinated events in front of an audience of roughly 25 people. The larger online audience participated from the no-place of cyberspace. The countries and timezones participants hailed from were many places: Finland, Australia, Italy, Sweden, Lithuania, Singapore, Greece, France, Canada, China - over 40 countries from around the world, including developing nations such as Malaysia, India, and Indonesia. The entire event was recorded. Around the core of conference's online archive are scattered islands of networked practice linked by filaments of conversation - tweets tagged with #netartizens, conversations on the NetBehaviour mailing list, and artworks posted to OP3NR3P0, an uncensored, open-source web portal that hosts online art.

Whether online communities or even the particular no-place of the conference itself resemble autonomous reality-communities is one of the questions the conference posed, along with apparently more practical ones, such as how artists and cultural, research, and educational institutions use and are transformed by networks. On site, the conference proceeded as conferences do, with panels, presentations and keynote speakers. Online, weeks before the conference, the NetBehaviour listserv began a conversation and projects began to show up in OP3NR3P0.

The first day of the conference was devoted to online art communities. Packer's opening statement reiterated the conference's goal of circumventing the restrictions of time and space. To underscore his point, the first intervention presented interviews with artists on and off site, hosted by Ruth Catlow and Marc Garrett, co-directors of Furtherfield, who spoke from London. After a word about Furtherfield's advocacy of Do It With Others (DIWO) Catlow acknowledged the affordability and reduced environmental impact of online conferences while stressing the potential ethical conflicts of using proprietary software (Adobe Connect Webconferencing). The interviews covered online theatrical performance and open source software to enable it (Helen Varley Jamieson), the emergence of GIFs as pop art iconography (Maxime Marion), the potential of the internet as a virtual studio and exhibition space (Juergen Trautwein) or as a vehicle for ecological research and awareness (Joana Moll), and the value of Free/Libre/Open-Source Software (FLOSS) and radical openness to nurture a community-propelled "digital

literacy" (Nick Briz and Joseph Chioocchi, creators of OP3NR3P0). In stressing the materiality of the net and its social impact, Briz and Moll set up a potential for critical discourse that became one of the missed opportunities of the conference. The day closed with a new work by Helen Varley Jamieson, "we r now[here]," performed by NTU students using live webcams to merge virtual and physical presence.

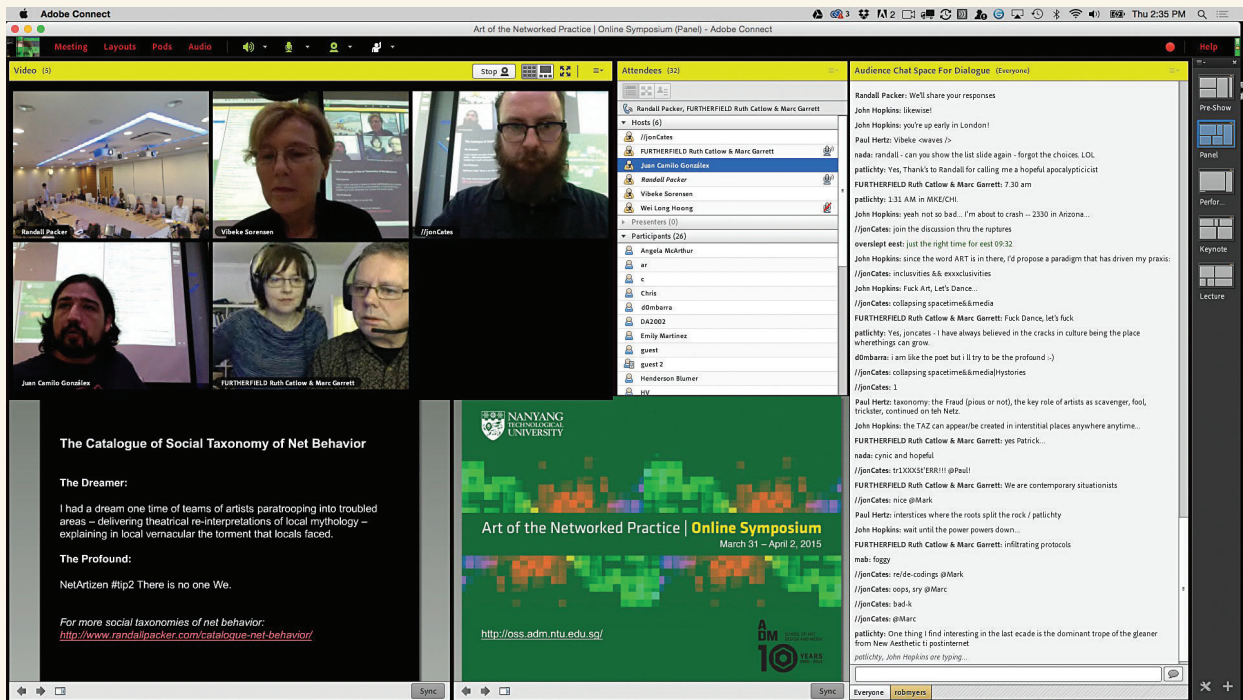
The second day of the conference (or the second late night, halfway around the world) introduced the critical role of networks for education as a second stream of inquiry. Tim White surveyed current educational technology such as mainstream MOOCs. Anne Balsamo presented FemTechNet, a "distributed open collaborative course," that offers a DIWO alternative to standardized courseware. Other presenters addressed the particular needs of cultural animation and art instruction over a network. Deborah Howes suggested that museum and studio practices could evolve in online spaces to reach out to a global and diverse community. David Ross discussed the shifts in pedagogical practice in a low-residency MFA program at the School of Visual Art (New York). Of all the presentations, Balsamo's most clearly tied into the previous day's emphasis on online communities and the forms of social reciprocity and critique that they can construct.

Keynote speaker Steve Dixon provided a thorough chronology of "Networked Performance Histories," from Futurist theater through networked immersive worlds. More than an art historical list, the chronology supported his argument that the existential condition of being human, which is always already to act in relation to other humans, becomes more apparent as technology mutes or exaggerates other, less essential qualities of being-in-the-world. Dixon's approach, relentlessly linear but resourceful, contrasted starkly with the subsequent keynote, where Jon Cates posed the question, "can networks of meaning be considered art?" His point of the departure, Duchamp's notorious

"Fountain" and the tangled halo of discourse surrounding it, led by a series of non-linear leaps to Chicago's Dirty New Media and Glitch Art scene. Citing Virilio, "accident is the future form of art," Cates located contemporary identity as unstable, glitched and broken, isolated in vast networks where we desire nothing so much as to reach through the screen and touch one another. One can appreciate Cates' remix style and still yearn for a broader context - telematic art and "relational art" have asked similar questions, considering social structures and interactions as art while negotiating intimacy.

Chaired by game artist-hacker Anne-Marie Schleiner, the closing panel of the day, "Peer-to-Peer Cultural Production," brought together the founders of two of the leading alternative art spaces in Europe, Ruth Catlow and Marc Garrett of Furtherfield in London and Alex Adriaansens of the V2\_Institute for the Unstable Media in Rotterdam. Schleiner examined how the comparative anonymity of the early web supported critical art, and suggested that social media's lack of anonymity may hamper it. Garrett offered a historical sketch of Furtherfield as a community of amateurs, artists, and technologists committed to restructuring the social context of art and artistic legacies, in opposition to neo-liberal models of art as commodity. Adriaansens described two projects that required complex online community models - shared work spaces and crowdsourcing an autonomous floating vehicle (Protei) to clean the oceans. Protei included work groups in China, Chile, Korea, and the Netherlands. Adriaansens' presentation revealed the global reach of educational institutions within communications networks and the capacity of artist networks to work with them. Both presentations implied a need for institutional presence to achieve artists' community goals.

In "Collective Research," the first panel of the final day, Charlotte Frost and Juan Camilo Gonzalez described efforts to support PhD candidates with



Screen capture 2015-04-02-14.35.21. A view of the Adobe Connect Webconferencing window for the Art of Networked Practice conference Virtual Roundtable, with local and remote video, slides, and online chat.

online research and publishing initiatives. McKenzie Wark examined the collaborative networks of the 1990s, particularly nettime.org, as successors to Dada, Fluxus, Situationists, Squatters movements, etc. Melinda Rackham recalled the World's Women Online (WWO) show that she organized 1995, when only 8% of persons online were women. The -empyre- list (<http://www.subtle.net/empyre>) developed out of her PhD research as an "open" space for thematic discussions in 2002. Frost's intervention emphasized the need for open source, global publication networks and research communities. Rackham sounded the same themes, but emphasized the power of geographically local communities while rejecting global social media. Wark's appraisal of the continuity of spontaneity and irrationality as forces for liberation recalled Jon Cates' keynote, and suggested that organization and logic are not the only processes involved in social liberation.

Keynote speaker Peter Looker, Head of the Teaching, Learning and Pedagogy Division at NTU, proposed a critique of institutional culture by contrast to network culture. The academy needs to foster similar collective, networked, decentered knowledge. This will require a shift in institutional roles and structures of authority: he left the details to our collective imagination.

The conference closed with the "Virtual Roundtable Global Exchange: Net Behaviors," an open dialogue for all participants, local and remote, with panelists Packer, Garrett, Cates, Gonzalez, and Vibeke Sorensen, Chair of the School of Art, Design, and Media at NTU. The online chat provided commentary, jibes and sidebars throughout. Panelists reviewed the "netartizen" contributions on Twitter and NetBehaviour and compared Jennifer Chan's tweets objecting to artists' "free work" with



contributions to OP3NR3P0 - "free" in the double sense of being both unpaid and unfiltered. Sorensen suggested that "netartizen" was a role created by the democratization of media, available to anyone. Panelists addressed how open curation and radical inclusivity of networked exhibitions serve to redefine art by opposing myths of artistic genius and commodity value. Marc Garrett noted the continuity of this position with net.art and Dada. Citing Mez Breeze's post from the parallel chat ("We need to reorient our perceptions of aggregational intent. is firehosing and navigating such considered curatorship? or handholding?") Packer expressed the unease that radical inclusivity could generate. Perhaps curatorship need not reflect the prestige of an institution; it might express the ongoing discourse of a community.

Shortly before we said our farewells, in some place, no place, and many places, Packer reiterated one of the recurring themes of the conference, more diffuse than issues of new educational technology or curatorial practice but equally cogent, singling out one of my posts in the parallel chat. I paraphrase: "Does a shift in social organization, from hierarchy to network, underlie all the issues we are raising about artists, curating, and networks. Is our social organization undergoing a profound global change in the very way we structure power?" I had in mind American physicist Yaneer Bar-Yam, who sees in the emergence of networks as systems of collective decision-making the potential to respond to global crises that hierarchical forms of organization cannot provide. [2]

This optimism in emerging structures, which Youngblood expressed 34 years ago, still informs our hopes for communications technology. Yet we are left with the vexed question of how autonomous social networks actually can be constructed in a postcolonial world, at "a historic moment in which there are no more colonizing countries, only countries that are

colonized by capital that has become invisible and has taken on a 'ghostly' character." [3] To paraphrase William Gibson, the network is here, but it is just not equally distributed. It is also material and its physical structures are largely owned by a complex of commercial and sovereign interests. The apparent leveling effect of the Art of Networked Practice operates while we netartizens are turned to our screens. Out in our many streets our freedom is compromised or absent, unequal, and always hard won. Networks will rule - but will they be in any sense participatory or democratic?

It is easy to forget, in the nostalgia of experience-becoming-history, that every act of creating an archive such as the Art of Networked Practice is situated in an economic system that commodifies our illusions and sells them back to us as propaganda to sustain its own hegemony. At the moment of its creation, flush with the pleasure of ideas and meeting old and new friends, it may be enough to celebrate the archive. Outside the context, if we don't ask the difficult questions, we will repeat the cycles of utopian self-deception that haunt the art of social change, from 19th century Romanticism on.

Beyond the Temporary Autonomous Zones and inchoate yearnings of information to be free that roiled the nettime list lie sustainable, institutional forms of networked practice - the Institute of Network Cultures, NetBehaviour, FemTechNet, Sarai and numerous other attempts to sustain the "critical co-creation of learning spaces" (Ruth Catlow's phrase). Sustainable decentralized network structures seem to be what our present situation calls for. Artists are not known for creating sustainable social structures. Neither are academic institutions, beyond their own historical traditions. No magical belief in emergence, in the noosphere, vegetal consciousness, or the proletarian engine of history will forge the future we imagine. It will require work, dust, noise, sweat, error and sacrifice. Whether

decision-making networks will be democratic is by no means clear, but we have some say in that, too. In a small but significant way, *The Art of Networked Practice* offered a vision of what we have achieved with networked culture and of where we might expand our efforts. It required effort. It generated optimism. It left us with unanswered questions. Its archives are worth repeated visits.

#### REFERENCES

1. Gene Youngblood, "Towards Autonomous Reality Communities: The Future for Computer Graphics." SIGGRAPH 1982, Art Show Catalog. Association for Computing Machinery (1982).
2. Yaneer Bar-Yam, "Complexity rising: From human beings to human civilization, a complexity profile," *Encyclopedia of Life Support Systems* (EOLSS UNESCO Publishers, Oxford, UK, 2002); also NECSI Report 1997-12-01 (1997). See <http://www.necsi.edu/projects/yaneer/Civilization.html>.
3. Santiago Castro-Gómez, "Traditional vs. Critical Cultural Theory," *Cultural Critique*, No. 49, *Critical Theory in Latin America* (Autumn, 2001), pp. 139-154. Translated by Francisco González and Andre Moskowitz. University of Minnesota Press, 2001.

#### LINKS

Overview: <http://oss.adm.ntu.edu.sg/symposium2015/>  
 Program and Archives: <http://oss.adm.ntu.edu.sg/symposium2015/program/>  
 Participants: <http://oss.adm.ntu.edu.sg/symposium2015/participants/>  
 Chat archive: <http://oss.adm.ntu.edu.sg/symposium2015/wp-content/uploads/sites/71/2015/04/Panel-4-Chat.pdf>  
 Twitter: <https://twitter.com/search?q=%23netartizens&src=typd>  
 OP3NR3P0: <http://Op3nr3p0.net/show/netartizens>

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#### BIO

Paul Hertz is an independent artist and curator who teaches art history and studio courses in new media at the School of the Art Institute of Chicago. He delights in dysfunctional fortunetelling, faux symbolism, intermedia, code sourcery, glitching, and social interfaces.

<http://ignot.us/>

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# PLAYING WITH MOBILES & PERFORMING MOBILITY

## @MINA#2015: A Mobile Innovation Network Australasia (MINA) Symposium Review

Sharon Greenfield, PhD researcher at RMIT University, and Franziska Weidle, research fellow at the German Research Foundation's Training Group "Literature and Dissemination of Literature in the Digital Age," and a PhD candidate in Cultural and Visual Anthropology at the University of Göttingen

Mobile phones with built-in cameras have not always enjoyed such a popular status as alternative tools for the production and distribution of digital visual media as it can be observed today. With their increasing accessibility, naturally, mobile phones have been adopted and incorporated without hesitation in everyday cultural practices to capture, edit, share and view a variety of content. However, in the broader sphere of the creative media industry, initially denigrated as limited and constraining in comparison to professional cameras and equipment, mobile devices and their according practices and aesthetics have been notorious for being amateurish. Low-image resolution, Instagram's filter features or the use of the vertical video format appeared to point to a lack in skill rather than to distinct characteristics of an emerging mobile aesthetic.





2015 Mobile Innovation Network  
Australasia Symposium trailer.



As screenings, festivals, and conferences around mobile films and art continue to spread, we can observe a shift from a “technologically enabled hobby” or avant-garde moving-image practice towards the recognition of the smartphone’s capacity as digital media tool and with that an appreciation of the “sophisticated cultural practice and profession” behind it. [1] By viewing the device’s apparent constraints as specific advantages, its discrete size, portability and affordability can become assets for less intrusive, more immediate and creative explorations of the world around us allowing not only for new modes of production, distribution and consumption but also for empowering different possibly more diverse, marginal and local perspectives to reach global audiences.

Since 2004, mobile filmmaking has been increasingly recognized internationally as a field with its own aesthetic qualities by specifically dedicated events providing a platform and catalyst for mobile media

forms, genres and practices. In the Australasian region, we can observe the establishment of a “nexus of interconnected mobile film festivals” such as the Sydney-based Mobile Screenfest, the annual Hong Kong Mobile Film Awards and, last but not least, the Mobile Innovation Network Australasia (MINA). [2]

Since the International Mobile Innovation Screening and the MINA Mobile Creativity and Innovation Symposium in 2011, the network has been promoting “cultural and research activities to expand the emerging possibilities of mobile media.” [3] Following this approach, MINA provides opportunities to extend discussions on the developments in the field across academia, practitioners, the creative industry and the wider public.

On November 19th, the 2015 Mobile Innovation Network Australasia (MINA) Symposium took place at RMIT University in Melbourne. Following the conference with keynotes and panels from both

practitioners and academics in the field, multiple screening events offered a platform for recent international smartphone, mobile and pocket films.

The peer reviewed worldwide panels, made up of both practitioners and academics, reviewed the submitted papers and films for the screening. Some of the papers accepted to the symposium might also become part of a co-edited special issue of the *Journal of Creative Technologies* (<https://ctechjournal.aut.ac.nz>).

"Every year you put out the call...and see the trends that are emerging (for that year)," explains one of the MINA organisers, Smiljana Glisovic. However, MINA also looks at the habitual, the ritual, the mundane of everyday mobile media practice in everyday life.

2015 was the first time that the MINA symposium has been outside of New Zealand since its 2011 inception, and it has been an intentional choice by the co-founders Laurent Antonczak of the COLAB at Auckland University of Technology and Dr. Max Schleser of Massey University: "MINA is a kind of umbrella,

platform, where people converge, meet, discuss, collaborate... it's a kind of intersection," feels Antonczak. As a basecamp, they are in the mid-point between practice-based and theory-based work and between the private and the academia sector; within that axis convergence is the spirit of MINA.

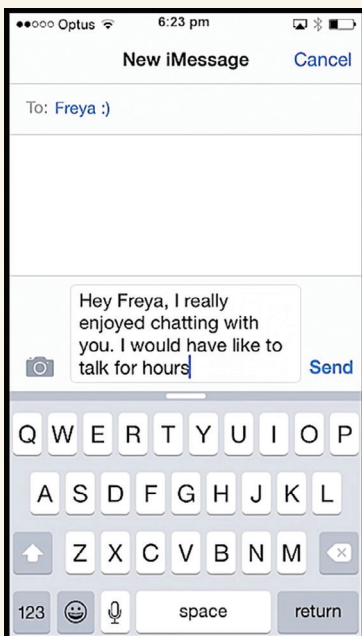
This year's theme 'Being Mobile - the State of Play' highlighted the sense of immediacy that mobile media affordances allow by playfully testing their potentials. It is about "unpacking that idea of mobility [...] and what it means to have a camera in your pocket all the time," says Dr. Marsha Berry, one of the conference organisers from RMIT.

In this vein, this edition of the MINA symposium explored themes around textuality, mobile media production, aesthetic, education, and hybrid art featuring double-blind peer reviewed papers from Australia, Colombia, Finland, New Zealand, South Africa and the USA. The organizers did not hesitate to go through great (technical) pains to ensure the program's rich and international appeal. Thus, a number of scholars and artists were invited to join the symposium up in the cloud and deliver their presentations via Google Hangouts.

MINA is about filmmaking, the teaching of filmmaking, and the pedagogy of teaching filmmaking and it looks to unpack transmedia from various perspectives. Berry states, "the nature of mobile media is that it's trans()disciplinary... you've got digital storytellers alongside filmmakers alongside artists."

With a keynote by Craig Hight, an associate professor at the Screen and Media Studies Department of the University of Waikato (NZ) and an expert in the fields of documentary theory and practice, documentary hybrids and digital cultures, the organizers could not have chosen a better scholar to open the event. With his talk on "Video-making, photographic evidence and software culture," Hight provided a comprehensive theoretical framework for MINA 2015.

One of the key questions that ran like a common thread through his presentation focused on what mobile video-making might mean in the digital era. By drawing our attention to the role of software and its all-permeating status within our digital culture,



he highlighted the translation of practice into code. As new ways to create unique media experiences for users, the processes of automation, simulation, augmentation, and transformation offer a wide spectrum of choices for today's media makers. However, Hight also pointed out that these embedded logics of coding, though enabling the users to perform, gradually take away their agency—most of the time without them noticing. With applications fostering specific default practices, templates offering a given hierarchy and the automatic collection of metadata, the nature of video becomes that of an information stream and our practices are increasingly informed by normative sets of values built in to the code.

Software and automation are not neutral: photo applications tell us what a “good” picture should look like, our data is used for mining and surveillance. In this post-photographic era, thus, software literacy becomes one of the most crucial assets for our media practices. To conclude his talk, Hight drew on the example of WITNESS - a New York-based human rights organisation (<https://witness.org/>) - to highlight the importance of software proficiency: If you want to use your camera to capture evidence you need to know about the politics and ethics of data practices, be strategic about what you do with your data and develop a critical capacity towards understanding which practices are enabled or disabled by the code. Only then, media users will be able to make an informed choice about which application to use.

After some mingling around tea and biscuits during the morning break, the first two sections on textuality and media production featured speakers as Tasmanian based sociologist Ashlin Lee who shared his findings about his Ph.D research project on “Negotiating Informatic Surveillance Risks in Everyday Life.” Following the keynote's line of argument of privacy, surveillance, and data implications, Ashlin highlighted media illiteracy and an alarming state of unconcern amongst his participants when interviewed about



© Sabine Gabriela Fritsch.

their mobile phone and social network practices. Mobile filmmaking pioneer and professor for Media and Communications at Universidad Santiago de Cali in Colombia, Felipe Cardona, then, went on to offer a more positive outlook on mobile technology when he shared his experience on working with social media in a collaborative audiovisual workflow. His examples pointed towards the emerging range of possibilities for filmmakers to collaborate globally on low-budget scales to create meaningful “cultural audiovisuals”.

In the afternoon, one of MINA's co-founders Max Schleser joined us via Hangouts to report back on the history of MINA and how the network had been growing. While the background of the symposium has come out of academia, there has been a focused effort to be open and connected to innovative artists and industry; the organisation finds value in getting diverse people into a room to learn from each other.

“In New Zealand we talk about ‘whānau’,” Schleser says, inspired by the Maori language in New Zealand. With MINA he feels a sense of whānau, of a multi-layered and dynamic sense of collective family, of a spiritual dimension layered upon a family tree or community.

During the session on education, Melbourne-based documentary designer and producer Seth Keen talked about his experience teaching a mobile videography studio at RMIT University. Focusing on the





design method of video-sketching, the studio's aim was to explore ways of practices that are not super-imposed on the web environment but rather reflect its specific characteristics. Following this experimental approach, the students were able to openly engage with notions of repetition, seriality and the void to embrace a more speculative design process in which they would discover unforeseen potentials and possibilities which sometimes turned out to be more alive and unique than a polished completed work.

The program went on with a section on Hybrid Art featuring Patrick Kelly's talk on "Instamoji and Everyday Remix Art Practices," in which he reflected on the practice of blending emoji characters with photographs to customize images and generate new meanings and contexts for cultural artifacts in the process. Then, New Zealand illustrator, concept designer, and writer Thaw Naing presented his "metamuseum" – a transmedia storytelling project which uses the website-based fictional Noble and Paige Museum (TNAPmuseum.org) as well as a mobile-device-driven ARG treasure hunt to promote a reading culture and encourage the audience to playfully engage with classic literature.

At the screening we began to see specific mobile aesthetics emerging. In sensory ethnography in anthropology, as well as in creative practice, there's a context and presupposition within the relationships between the segments inside the research paradigm. "With creative practice, like with the films in the screening, there's an emphasis on expressions of research as a methodology," says Berry. Various films showcased this.

Some films explored the uses of cultural visual aesthetic normatives. Certain shots and edits that used to be avant-garde in mobile filmmaking, have now become norms due to technology and forming of a cultural visual aesthetic. For example, when relaying humour for a specific scene, many filmmakers will speed up characters in both the video and in the higher-pitched audio. We also saw perspective used as a new way to tell a story, such as in the film *The Life & Death of an iPhone*.

Because mobile media is so technology driven, cutting edge is when the way of making is breaking traditional paradigms and finding new different ways to articulate their creative

DOG TAIL short film shot on iphone 6plus

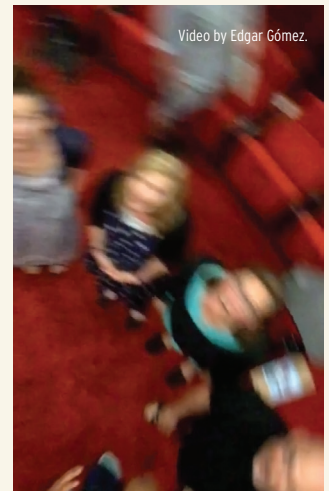


practice. MINA organiser, Patrick Kelly, feels that technical limitations are also its strengths; the constraints that are currently set in technology such as size and speed, are helpful because they birth invention. "In the last couple of years, there's been a tendency for there to be more films that use wearability technology [...] as a production process it's really interesting to see those works coming through."

Yet innovation can itself be finding the state of play in a creative practice. When we talk about the affordances mobile media brings, a well leveraged affordance is the shifting of new visual perspectives between viewer and camera. An example is how view can move in different ways because the camera's form factor as a mobile device has become so small and maneuverable. This was shown again and again in the works within the screening that used mobile as a medium to move the camera in new spaces and to create more innovative perspectives on the subject; moving under chairs and around the body in tight spaces. This created an aspect of liminality of place, of movement within the in-between.

Earlier in the decade there was interest in using AR to create augmented streetscape, such as overlaying a photo taken a hundred years ago onto a building, but algorithms and processor speed hadn't quite reached a point where that was possible - but as processor speed and size have gotten faster and smaller, new technologies in this area such as Oculus Rift, Magic Leap, and HoloLens may lead to a renewed interest in this area.

In the future, AR and other technologies like VR, are emerging in new projects that "change the way we think about the traditional ways of watching," says Kelly. In addition, they see a MINA future, working towards projects driven by automation; where there's a collaboration between creator with the device and between devices.



The MINA symposium recognizes visual innovation in the refinement and reflection of media works. For example, mobile media making enhances immediacy, and is able to bring the viewer away from a sedentary viewing such as the desktop, to cross boundaries that traditional filmmaking cannot.

What we found in discussion between attendees at MINA was that mobile media affects our everyday practices. Many of us are interested in using the smartphone as a tool to explore visual aesthetics, innovative visual processes and methodologies, community arts based practice, social change innovation, or critical reflection storytelling.

And as new, smaller and more affordable technologies are created, such as mobile media phone applications, video-making becomes accessible to a wider range of people and is likely to move away from big cameras and desktop computers. Even outside of MINA, international film festivals like Sundance have started screening works which are being recorded and produced entirely on smartphones. Clearly, our everyday mobile practices are key to testing the potentials and pushing the limits of mobile media technology and, ultimately, will shape distinct aesthetics of storytelling in the digital space.

However, at the same time, we feel it desirable to move beyond notions of storytelling as mobile media practices are beginning to converge and embrace the particular affordances that are characteristic for portable technology. Following the approaches of art exhibitions as for instance the German documenta and its mobile media installations and walks [4], festival programs dedicated to mobile media pieces should account for the growing multiplicity not only in content but also in form. Mobile devices and features are not only used for the production, distribution and reception of films but increasingly come into focus of performance-based practices as tools to reflect

on conventionalized perceptions and perspectives of the world. The ongoing challenge will be to find appropriate frameworks for screening and exhibiting these emergent mobile formats and aesthetics.

The next MINA is looking to be set in end of November 2016 at Swinburne University in Melbourne, as a coproduction between RMIT, Swinburne, COLAB (AUT University), and Massey University.

## REFERENCES

1. Max Schleser, et. al. (2013): Small screen and big screen: Mobile film-making in Australasia. In: Ubiquity: The Journal for Pervasive Media 2(1+2), 120.
2. Ibid, 121.
3. MINA official website, "Screening 2015," accessed February 5th, 2016, <http://mina.pro/screening2015/>.
4. Cf. documenta (13) official website, "Alter Bahnhof Video Walk," accessed May 25th, 2016, <http://d13.documenta.de/de/#/de/programme/die-programme-in-kassel/einige-von-teilnehmerinnen-und-teilnehmern-der-documenta-13-initiierte-kunstwerke-und-programme/alter-bahnhof-video-walk-janet-cardiff-and-george-bures-miller/>.

## BIOS

Sharon Greenfield is a PhD researcher at RMIT University where the focus of her thesis seeks to understand how and where young people engage with digital media for identity expression during loss and bereavement. Her research interests include digital ritual and digital artifact making, cultural processes in technology interaction, digital ethnography, place and space making, youth digital literacy, and digital bereavement.

Franziska Weidle is a research fellow at the German Research Foundation's Training Group "Literature and Dissemination of Literature in the Digital Age" and a PhD candidate in Cultural and Visual Anthropology at the University of Göttingen. Her current research focuses on interactivity in the context of documentary knowledge production and dissemination. She holds a Master of Arts with distinction in Visual Anthropology from the University of Göttingen and has a background in cultural management. She works as documentary filmmaker, assistant of the Göttingen International Ethnographic Film Festival and contributing editor for the online journal of the Society of Cultural Anthropology, [culanth.org](http://culanth.org).



# "SHEDDING IMAGES" • INTERVIEW WITH • PASCAL DUFAUX

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➤ Abigail Susik, Assistant Professor of Art History, Willamette University ➤

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The following discussion occurred on May 5, 2013, in the Montreal studio of electronic artist Pascal Dufaux. [1] For nearly a decade Dufaux has worked on an ongoing series of "Vision Machines" which encourage a heightened awareness of seeing and being seen, moving beyond the bounds of corporeal experience toward an envisioned machinic consciousness. The discussion with Abigail Susik focused upon questions of phenomenological perception, reception by the viewer, formal considerations, and historical influence. <https://pascaldufaux.squarespace.com>

**ABIGAIL SUSIK:** What were some of your aims with a work like *Vision Machine #2* (2009-ongoing)?

**PASCAL DUFAUX:** I wanted to create a device that allowed me to think about this puzzling reality that we are living in. That is why I tried to make a machine that is about neutrality. The machine is not about me. I don't want the machine to express the weakness of human beings. I wanted something that is flawless, because when it is flawless it is something that is standing in front of you, it is not just talking about what is pathological and the idea that everything promises doom.

We are used to technology being tied to corporations or governments. I think as individuals, the world belongs to us, and we are allowed to say, "Ok, I'm going to launch my own space program." Actually, I don't think we need to go that far to begin to understand space, which begins just on the other side of our gaze. It begins here and goes infinitely to the stars, and all of this field of vision belongs to us. We should allow ourselves to say, "I'm going to explore it." Today we can actually build those kind of devices, even though it is often expensive to do so.

**AS:** How do you hope your devices will impact the viewer?

**PD:** The device becomes a theater of perception. We can talk with strangers about what we see, because at a certain point everyone

is something of a metaphysician—children always are, but even in adult life it doesn't take that much of a push to bring out such questions. Maybe those human activities that we think are so important, like government, are not, and their importance is just a perception...

Sometimes you have people that choose nature over politics, so that nature becomes a refuge from politics. Actually, it is the same; it is not a conflict, but rather a continuum. There are politics in plants, and when we are looking at cities from afar, cities look like crystals. We just grow like parasites and contaminate everything that we are interested in. Contamination is neither bad nor good—it is just something that can create new forms. It can also spoil things.

**AS:** Is there significance to the form of the devices, the choice of shape and texture, etc.?

**PD:** These are geometric, mathematical forms made through 3-D modelling and 3-D printing in the early stages. You are looking at something that is looking at you. All of my work is based on that. My work is also influenced by the concept of the Klein bottle, in which inside and outside are linked by a continual surface, a sensual surface. Also, my devices have a very specific function—like the way that flowers are sexual devices, or the way in which apples contain the elements for future propagation—that is almost more complex than a time travelling machine. When I say “sexual”, I mean that organic devices are gates onto something that is a threshold between the tangible and the intangible.

**AS:** If you are creating a theater of perception, what kind of perception are you cultivating exactly?

**PD:** I like to work with mainstream video surveillance

systems because there is a strange issue today with the question of the quality of the image. Corporations are trying to make us believe that the more hi-definition or 3-D an image is, the closer it is to reality. But if you look at the way we actually use and experience technology, we are mostly encountering low-def images: having a discussion with a friend on Skype, or seeing yourself in a surveillance camera, and so on.

I think now, when we see an image that is low-def, we feel that is closer to the actual world, that it is more sincere, that there is no propaganda, but rather a one to one exchange. Theoretically, hi-def is choosing the inverse approach: it is quitting reality. Because for us reality is not just based on vision, it is based on experience.

I don't want to make an image that imposes on you, to the extent that you say, “It is perfect!” Power and belief are strange things. When you are in front of something that amazes you too much, it feeds you but it also crushes you. You are fascinated to the point that you are disembodied, you become just eyes. For me it is more about space, the image is just an extra layer.

**AS:** Would you say that a sculptural orientation is part of your practice then?

**PD:** I am using video as just another level of sculpture. Reality is about the immanence of ‘visualities,’ and we are bathing among this quantity of potential images and actual images. This is structural, almost material— a horizon of latent images.

With my project *Déjà Vu*, the viewer can be immersed in a video retroaction of an image inside an image, and also because of the delay of the apparatus, with images of the same things up to two minutes old,

you have the ghostly remains of what I like to call “slipped images.” Because there are generations or series of images, you get images that have escaped from the flow, the video flow, and so you have images that are a bit like leaves that fall, or like the skin of a snake—back to the idea that we are always shedding images...

**AS:** Was Étienne-Jules Marey an influence for you?

**PD:** Yes. Even though his work was about locomotion, because of the black and white backgrounds he used there was always something ghostly and spectral about his work. In my own work, I have been sometimes interested in the concept of making a portrait of absence, or at least asking what happens when the figure is no longer there.

**AS:** In your practice, how does the body or figure relate to the space around it?

**PD:** Usually we say there is a break between making a portrait and making a landscape. I think it is interesting from a geometric perspective to try and find out if these two points can be related by a line that sweeps and glides from one point to another. With my machine, when there is no subject, the camera creates a centrifugal panorama. When there is a subject, they block this possibility and you have only the subject itself...Actually, talking now, I just realized that continuity is really important for me: trying to avoid the break between subject and space. But also the break between art and media art, between sculpture and image-making, 2-D and 3-D, outside/inside.

**AS:** How do your constructed devices impact your interest in the dialectic between figure and ground, or the axes of horizon and verticality?

**PD:** If you see the history of image making and moving images, it is partially about people becoming

more and more aware of the production apparatus, the crane, the camera, the lens, or a flash to the point of view of the person filming, or a sudden awareness of a film within a film. More and more, the hardware that creates the image is appearing, even though we always knew it was there.

What I find interesting now is video surveillance and also images from NASA. *Vision Machine #2* was inspired by the images sent to us by the Mars Rover vehicle. Why is it that in videos from NASA we always see a piece of the robot in the image? I don't know if it is on purpose or not, but it is almost like that point of reference makes the image more real. This is the same thing with the crosshairs on photographs or video: we know how this image was made.

I think in my work there is always a moment when the machine sees itself for this reason.

## REFERENCE

1. This Mellon-funded interview was assisted by Emma Jonas.

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## BIO

Abigail Susik is an Assistant Professor of Art History at Willamette University. Her research focuses on cultural histories of the European avant-gardes, as well as issues of aesthetics and ethics in contemporary and new media art. She curated the 2016 exhibition, “‘For Myself’: Nudes by Imogen Cunningham 1906-1939,” at the Hallie Ford Museum of Art in Oregon. Recent and forthcoming publications include *Blackwell Companion to Dada and Surrealism*, ed. David Hopkins (Wiley-Blackwell, 2016); *Leonora Carrington and the International Avant-Garde*, eds. Jonathan P. Eburne and Catriona McAra (Manchester University Press, 2016); and entries in *The Encyclopaedia of Surrealism*, ed. Michael Richardson (Bloomsbury Press, 2017).

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# THE **LEADING THREAD:** VIDEO, MEDIA, INSTALLATION A conversation with **FEDERICA MARANGONI**

> Laura Leuzzi & Elaine Shemilt. Laura Leuzzi, PDRA, EWVA, DJCAD, University of Dundee.  
< Elaine Shemilt, Professor, EWVA, DJCAD, University of Dundee.

**KEYWORDS: VIDEO,  
INSTALLATION,  
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VIDEO ART, VIDEO  
INSTALLATION,  
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EXHIBITION, VENICE.**

FEDERICA MARANGONI IS AN IMPORTANT ITALIAN MEDIA ARTIST AND DESIGNER BASED IN VENICE. SHE IS A PIONEER OF VIDEO, PERFORMANCE AND INSTALLATION IN ITALY.

Marangoni's exhibition at Ca' Pesaro – International Gallery of Modern Art, Venice, entitled *Il filo conduttore/The Leading Thread* (2015), was curated by Gabriella Belli. [1] The exhibition was organised by the Fondazione Musei Civici di Venezia in response to Venice Biennale's 56th International Art Exhibition – *All The World's Futures*.

The following interview consists of several conversations held before and after this major exhibition and are part of the AHRC funded research project 'EWVA European Women's Video Art in the 70s and 80s', based at Duncan of Jordanstone College of Art and Design, University of Dundee. [2] [3]

**LL/ES:** *The Leading Thread* was "announced" by an imposing site-specific sculpture attached to the front of the building, on the Canal Grande. It was a wire that unravelled from a reel, a recurring element in your body of work (see *The Birth of Light*, 1992; *Freiheit*, 1999) [3]. Since the 60s you have always experimented and researched new and innovative materials, including Plexiglas, Plastics, Polyester. [4] The medium employed in *The Leading Thread* mimicked the effect of a neon tube, which you have been using since the 60s. How did you start using neon in your practice and which medium did you employ to make this sculpture for Ca' Pesaro?

**FM:** I started to use neon in the 60's. The first piece was a white neon tube silhouette self-portrait lying into its own negative shape excavated into white polyurethane.

Of course this has strong associations with a coffin and ephemerality of life and the physical body. My use of neon became words often on top of a TV, or on a mirror like the large red word ART of 1987 (Madrid, Centro Cultural Casa de Vacas), also as shapes as in *Dripping Rainbow* and *Bleeding Heart*.



Federica Marangoni, *Il filo conduttore*/  
*The Leading Thread*, 2015, installation, Venice,  
 Ca' Pesaro - Galleria Internazionale di Arte  
 Moderna. Photograph from Canal Grande.

The neon I used for *The Leading Thread*, is the result of a much research of modification of the neon tube. It's called cracked neon, the tube is filled with mini-spheres of solid glass and the neon gas entering is obliged to find his way out, therefore creating a "light in motion."

This new visual effect of light concentrated in the tube moved like blood through veins. For the Ca' Pesaro installation I used a very simple line/sign along one side of the building vertically and along the water horizontally. It created an outline of the splendid baroque architecture. It was a contemporary art gesture, a dialogue, rather than a violation of the building. The neon, a double tube, reached a huge glass coil standing on the canal door of the Palazzo, representing the energy of Art.

**LL/ES:** The neon also entered the ground floor of Ca' Pesaro. How did you structure your presence in the space?

**FM:** Inside I had two rooms connected and quite open, I create two installations in two rooms. In one of the rooms there was the sound of the heart. The installation was all dedicated to human tragedies, to humanity and to the horrors that happen in the world every day. We look at the papers and then we throw them away because we can't look any more. It's been the same all my life: wars, killings, people dying because of famine in the desert. I started to collect clips from magazines and newspapers back in the 70's.

I have been using these dramatic images ever since. This is an endless video called *Tolerance In Tolerance* (2005). [5] A continuous collage of images of horrors updated to 2015, it is accompanied by the continuous sound of a heartbeat, which fills the room. On the floor there is the red neon like blood flowing into the large roll of barbed wire.

The other was a silent room, with a silent video: just my hand, that writes on a wall directly in neon. These are the screams that I address to humanity. My hand keeps silently writing. This is my last piece connecting research with video and neon - without having the real neon.

In the second room on the black wall, behind the barbed wire with red neon hung a long sign in white neon – about 5 metres: "Is not a good day to be human."

This was the most tragic thing I have ever read on a wall. I saw it in the subway in New York. I was running, there was this wall with writing and underneath a beggar. It was already an installation and I



Federica Marangoni, *Il filo conduttore/The Leading Thread*, 2015, multi media installation, Venice, Ca' Pesaro - Galleria Internazionale di Arte Moderna, detail.

photographed it with my camera. Then I re-built it here in Ca' Pesaro with this little woman beggar. It is created simply with pieces of wood covered by black textile simulating her curved body, the head covered by a shawl with a resin cast of my hand attached to her outstretched arm.

**LL/ES:** You mentioned, this silent video connects two research threads in your practice: video and neon. When did you start to use video?

**FM:** I began to use video in the second part of the 70's. It was a relatively new medium at the time and young artists like me felt free to experiment with these new media. I had already started using neon long before that. At that time, I didn't know much about what was happening in the USA. But then little by little the use of technology entered into my work and I developed it.

**LL/ES:** How did you see the possibilities of video as a new medium at the time?

**FM:** This is a very difficult question. To reply properly I should think of myself when I was thirty, driven by the results of my research. Now I can tell you that I predicted the future of this process though at the time it was considered fragile. Not many people believed video had a future and would become an established medium. We headed forward with the spirit of pioneers but with little means. I believed in it even if I didn't know much about what was happening

around the world. We were in our little "cell" and we were lucky to find it. I didn't know for example about Nam June Paik, whom - I could have never imagined at the time - later would become my friend.

**LL/ES:** You started using video at Centro Video Arte at Palazzo dei Diamanti in Ferrara? How did it start this collaboration?

**FM:** Well at the time there were not many of us who wanted to experiment with video. We wanted to use this medium but we had limited funds. At the time,

Lola Bonora and the director of the Museum, Franco Farina, created a centre for video experimentation, giving the possibility to some artists to produce video works. We did our videos and our performances at the Centro Video Arte.

**LL/ES:** In 1980, you were invited to show your work at MoMA in New York. Can you tell us more about that experience?

**FM:** Previous to that, I started working as assistant Professor to prof. Angiola Churchill at New York University I ran the summer course of glass art and design in Venice and they later invited me to teach in NY.

In 1979, I was working in a Gallery on 57th street. I had lost an entire shipment of glass sculptures for the exhibition. They were stolen at the port. Therefore I bravely did a new performance about the "ritual of life and death". In Manhattan anything can occur: a young curator of MoMA was in the audience, and he invited me to perform a new work at MoMA in February 1980.

At MoMA, I also brought my 16 mm *The Box of Life*: [6] it was the world premiere of the film, which had been produced at Centro Video Arte. For this I also made a new performance with bleeding wax masks - which were my double. These masks were electrified and they melted, only the skull remained. The performance was entitled *The Interrogation*.



The tape recording was of questions like in a police interrogation: "Why are you an artist?" and I kept the melting mask in my hands in front of my face, till it was consumed, and then I took a transparent mask and distributed it to the public.

It had a strong impact on the audience.

**LL/ES:** When did you begin to make video installations?

**FM:** I started to make them almost at the same time as I began to use video. I never used video in a narrative way. I wanted to use it as a fourth dimension for sculpture: to give life to it. Thus it became video-installation. The first was *MAXXI TV* (1980), which used TVs instead of control buttons and the image was projected onto a canvas. It was first shown in Ferrara, and later re-installed in Milan.

**LL/ES:** What have you preserved of *MAXXI TV* and other early installations?

**FM:** I have only bad photo-documentation: we were not aware that this would become our memory.

At the time we made very complex "environments" (*ambienti*) - this is what we called them - and they were destroyed after the exhibitions.

For example, in 1970 I presented *La Strada* (The Street), a multi-sensory environment (*ambiente sensoriale*) curated by Pierre Restany at Centro Apollinaire in Milan, directed by Guido Le Noci. [7] It reproduced a cityscape at night, with a street with the white zebra lines and pedestrians. Pedestrians were silhouettes, made of a special Perspex, which glowed in the Wood's Lamp. [8] The effect was similar to a neon. In the dark, the soft foam rubber floor was designed to disorientate the visitors. The zebra lines and the silhouettes were illuminated by black light. A 16mm film gave the impression of traveling in a car, accompanied by a voice-over by the poet Roberto Brivio. It was a big production and it is all gone. It has never been re-installed.

**LL/ES:** Are you working on a new project at the moment?

As always since the early days when I cut out my silhouette from a piece of Perspex and put it on a grey plastic road with the white pedestrian strips I have many projects: I am always 'On the Road'!

## REFERENCES

1. *Federica Marangoni: il filo conduttore / The Leading Thread*, ed. Gabriella Belli (Venice: Fondazione Musei Civici, 2015).
2. EWVA aims to address the under-researched contribution of women artists to video as art form in Europe. Principal Investigator is Professor Elaine Shemilt, with Co-Investigator Professor Stephen Partridge, Research Fellow Dr Laura Leuzzi and archivist Adam Lockhart. Information and materials are available on <http://www.ewva.ac.uk>.
3. For the video recorded interview in English and Italian see <https://vimeo.com/148213824>. Video recording by Giorgia Marangoni. Edited by Lockhart with the support of the artist and Leuzzi.
4. See *Federica Marangoni: i luoghi dell'utopia: iconografia e temi fondamentali nell'opera di Federica Marangoni / The Places of Utopia: Iconography and Basic Themes in Federica Marangoni's Work*, ed. Viviana Conti (Milan: Mazzotta, 2008), 46-47 and 142-145.
5. See P. Restany, "Elettronica: madre di un sogno umanistico/ Electronic/ Mother of a Humanistic Dream," in *Ibid*, 52-58.
5. *Ibid*, 124-133.
6. See *Camere incantate, espansione dell'immagine*, ed. Vittorio Fagone (Milan: 1980), 145-146; Grahame Weinbren, "Symbols and Materials/ Simboli e materiali," in *REWINDItalia Early Video Art in Italy / I primi anni della videoarte in Italia*, eds. Laura Leuzzi, Stephen Partridge (New Barnett: John Libbey Publishing 2015), in particular 148-149 and 158-159 and Laura Leuzzi, Elaine Shemilt, Stephen Partridge, "Body Sign and Double a Parallel Analysis of Elaine Shemilt's *Doppelgänger*, Federica Marangoni's *The Box of Life* and Sanja Iveković's *Instructions N 1 and Make up - Make down*," in *Media Art. Towards a New Definition of Arts in the Age of Technology*, ed. Valentino Catricalà (Pistoia: Gli Ori, 2015), 97-103.
7. On the collaboration with Restany see *Una generazione intermedia: percorsi artistici a Venezia negli anni '70*, ed. Riccardo Caldura (Comune di Venezia, 2007), 36-39, in particular 36-37.
8. P. Restany, in *Federica Marangoni: i luoghi dell'utopia*, 52.

## BIOS

Dr. Laura Leuzzi is art historian and curator. She is a PDRA on the AHRC funded research project 'EWVA - European Women's Video Art in the 70s and 80s' (DJCAD, University of Dundee). She is co-editor with Stephen Partridge of *REWINDItalia. Early Video Art in Italy* (John Libbey Publishing, 2015).

Professor Elaine Shemilt is an artist, a Fellow of the Royal Society of Arts, the Royal Geographical Society, a Shackleton Scholar and has a Carnegie Scholarship. She is the Artistic Director of the Centre for Remote Environments, the Vice Chair of the South Georgia Heritage Trust and Chair of Printmaking.

# VIRTUAL ART, ANCHORED IN REALITY: A CONVERSATION<sup>on</sup> Location-Based AR

Dejan Lukic, Ph.D. in Anthropology, Columbia University; Adjunct professor in Art Criticism at SVA (School of Visual Arts). Seol Park, MA in American Art, Sotheby's Institute of Art; Independent curator & Founder of Spark Art Management

**KEYWORDS:** AUGMENTED  
REALITY, AR, MIAMI,  
INTANGIBLE, IMAGINATION,  
DIGITAL, VIRTUAL,  
AUGMENTATION, PUBLIC  
ART, INSTALLATION,  
RICHARD HUMANN, JOHN  
KELLY, ICEBERGS

IN DECEMBER 2015, LARGE-SCALE DIGITAL ART INSTALLATIONS WERE ON VIEW IN MIAMI BEACH IN AN OUTDOOR EXHIBITION TITLED *#AUGMENTED* [1], SHOWCASING ARTISTIC VISIONS TAKING SHAPE AT THE INTERSECTION OF ART AND TECHNOLOGY, PHYSICAL AND DIGITAL, AND REALITY AND IMAGINATION. DEJAN LUKIC, PH.D., SAT WITH SEOL PARK, THE CURATOR AND PRODUCER OF THE EXHIBIT, TO DISCUSS AUGMENTED REALITY (AR) AS AT ONCE A NEW ART-MAKING MEDIUM AND AN ENVIRONMENT IN WHICH TO EXHIBIT ARTISTIC CONTENT.

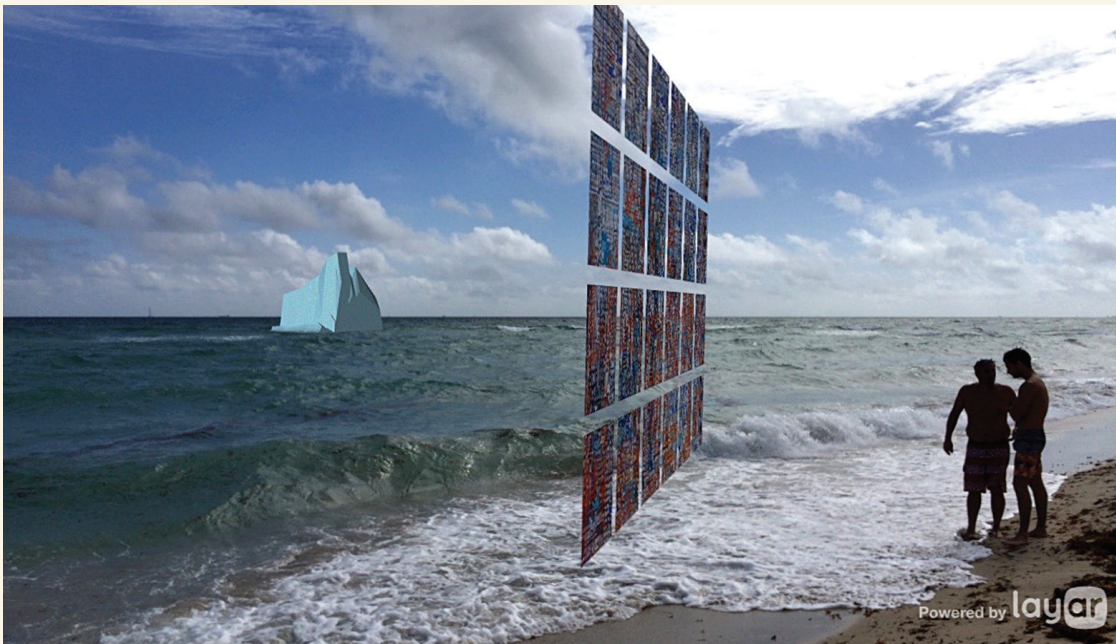
**DL:** In discussing an exhibition, I seldom start by asking about the medium; however, in this case I feel it necessary, as the medium was integral to the viewing experience.

**SP:** *#AUGMENTED* was a group exhibition of digital artworks by five international artists--Richard Humann, Carl Skelton, John Kelly, Shuli Sadé, and Chris Manzione--, created for and staged in a relatively new technology environment called "Augmented Reality (AR)."

Unlike "Virtual Reality (VR)" that replaces the real world with a simulated one, AR supplements the camera view of a site with computer-generated sensory input such as sound, video, or graphics [2]. The computer-generated artworks in *#AUGMENTED* were not visible to the naked eye: they emerged on viewers' smart phones when the exhibition site was seen through an AR app.

**DL:** What triggers these artworks to come into view, on visitors' smart phones?





(top) Exhibition #AUGMENTED (installation view), 2015, showing *En Plein Air In Plain Sight* (partial view), 2015, by John Kelly, Miami, Florida. © Spark Art Management/ SPARK+.

(bottom) Installation view. Exhibition #AUGMENTED, 2015. Works from left to right: John Kelly, *En Plein Air In Plain Sight* (partial view), 2015. Shuli Sadé, *Urbanotopia AR*, 2015, Miami, Florida. © Spark Art Management/ SPARK+.



**SP:** The location. Each artwork was tagged to specific GPS coordinates around the exhibition site, which was a six-block area in North Miami Beach. When you entered the pre-configured radius around an artwork, the AR viewer app would detect and display the artwork in-situ on your mobile phone. The display would reflect your position in relation to the artwork, and you could walk around a piece to experience it from all directions. Commercial applications of this capability have been around. The “Monocle” feature in the popular Yelp mobile app is one example: when user turns on the Monocle feature and looks around an area through the phone camera, information about nearby businesses such as hours, ratings, and coupons pop up on the screen augmenting the actual view of the area. In the case of the exhibition *#AUGMENTED*, I wanted to augment the site with visual content, as opposed to text-based information.

Another, more commonplace method of delivering AR content is by using graphic image, rather than GPS coordinates, as the trigger. It could be a QR code or a printed poster that users scan using an AR viewer in order to access the augmented content.

**DL:** By choosing to use location as trigger, you were pursuing a degree of site-specificity, then. However, unlike *Spiral Jetty* by Robert Smithson, you could reassign the AR pieces from the show to different GPS points and have them travel around the world.

**SP:** That is correct. ‘Site conscious’ may be more appropriate than ‘site specific.’ Nowadays, the viewing conditions for digital content are usually determined by the ones consuming the content. Here, I wanted to empower artists with the ability to control the physical context in which their respective pieces would be staged. During the conception stage, we looked at the map and the street views of the site together, discussing the optimal installation points and orientations for each piece. Carl Skelton’s *Between Futures*, for example, ran parallel to Collins Avenue and hovered at the exact same height as the

signage lining both sides of Collins. Richard Humann’s *Harp of the Giant* was installed next to an amphitheater, whose architectural character was echoed by the spiral form of the artwork. It demanded that this digital art be consumed there. Michael Kimmelman, an art writer I greatly admire, has noted that, as the Web and mass media flood everyone with the same images, sufficient appreciation for the virtues of the pilgrimage is being lost, and that, it also resulted in creating a “newly heightened role for the one-of-a-kind encounter.”[3] I hoped to retain such sense of pilgrimage despite dealing with digital art.

**DL:** To me, *Harp of the Giant* by Richard Humann stood out for the depth of concept and relevance of expression.

**SP:** I agree with you. Richard Humann is a Neo conceptual artist based in New York. His work frequently employs words and letters. *Harp of the Giant* is an original piece he conceived specifically for this exhibition. Never before exposed to the concept of AR, he was quite taken and inspired by its potential and created a deeply contemplative piece.

The artwork is shaped like a beanstalk, a reference to the classic tale of Jack and the Beanstalk. The virtual beanstalk is comprised of key words pulled from the tale, spiraling all the way up into the clouds. The scale is monumental, and the words hover in a neat, orderly spiral form, true to the artist’s minimalist inclinations. Such form can exist only in the realm of AR where gravity is not a governing factor. Viewers’ gaze climb the spiral as they follow the narrative, although the words become no longer legible as the spiral disappears into the clouds. Later in the story, after Jack has stolen many items from the Giant that lives in the clouds, he attempts to steal the harp that sings beautiful songs. The harp cries out as Jack takes off, waking the Giant who then chases after Jack. The harp, at once fascinating and dangerous, represents technology, art, music, and humanity. It is a combination of it all. The harp is autonomous, yet at the same time is beholden to its master, the giant.



calls a 'padded cell.' The en-plein-air spirit that was alive at the point-of-creation becomes lost at the point-of-presentation. This AR installation was an act of bringing the subject matter of his paintings back out to the elements and allowing the viewer a chance at experiencing the subject in an expansive real-world backdrop.

**DL:** Few artists explore landscape art nowadays and very few scholars and critics discuss it outside of a narrow art historical context. Isn't it considered extinct?

**SP:** You are right about that. It is considered something belonging to a bygone era. But lo and behold, there was room to innovate upon the subject still.

**DL:** And I assume the icebergs didn't melt?

**SP:** They didn't.

**DL:** Aside from the fact artists can conceive artworks free of concerns over certain laws of physics such as temperature and gravity, what are other merits of AR as an artistic medium and as an exhibit-staging environment?

**SP:** In my mind, an artistic medium is worth exploring not because it's simply new but when it allows artists to create meaningful visual expressions that are otherwise unachievable. When artists start thinking in the realm of AR, they can conceive artworks in architectural- or even environmental scale, if the concept requires as such. Fabrication, shipping, and assembly become irrelevant, which can be quite liberating. Also, there is considerable flexibility with the content types. Artists can conceive AR content in video, audio, or even animated 3-dimensional figures.

For curators, one important feature of the AR technology environment is the ability to stage digital art without the disturbance of any plaster walls, pedestals, projector screens or hanging wires that are not part of the artwork itself. Harnessing AR could

enhance exhibition design of conventional art as well. Virtual to-scale model of Van Gogh's bedroom, for example, could augment an exhibit of the artist's paintings. An exhibit of antique musical instruments could be brought to life if augmented with audio files for each instrument.

AR exhibitions can be staged indoors of course, although outdoor staging was without doubt more suitable for *#AUGMENTED*. During the run of the show, the weather in Miami was uncharacteristically precipitous with sudden showers. It was during the Miami Art Week and many fair-goers complained about the weather, but this exhibit looked fantastic rain or shine, set against the changing light of sky and occasional rainbows.

It also felt good that the production of this exhibition left zero impact on the environment. Not an inch of bubble wrap was involved. Anyone who has seen firsthand the amount of carbon footprint today's globally nomadic art logistics generate would understand this sentiment.

**DL:** On the other hand, what were some of the challenges in bringing this exhibition together?

**SP:** Expertise. It required significant research into AR's capabilities in its current state. We researched various AR platforms out there, each with different features and levels of sophistication and yet none built with the specific needs of art exhibits in mind, and determined which one could be best repurposed for my vision. Assigning artworks to GPS points and configuring POI(Point-Of-Interest)s for mobile map interface required collaboration with a programmer. Each participating artist went through a learning curve as well.

**DL:** Speaking of which, I found it intriguing that the artists you showed are not necessarily known to have been "digital" artists. If anything, their practices seem to be anchored more strongly in conventional media. Was that a conscious choice?



**SP:** Yes. There have been attempts at using AR to present original visual content for a few years by now, most of which were led by digital technology enthusiasts. In conceiving this exhibit, I thought it meaningful to introduce AR to artists outside the circle of early adopters. Conversely, I believed that input from these seasoned practitioners whose artistic rigor had been honed in conventional media could be constructive to the development AR as an artistic medium in the future. The artists I engaged had demonstrated clarity of thought and effective visual expression of it in their past work. I wanted them to bring the same standards to this new medium and the resulting work to be discussed for their artistic merits first and foremost, than simply for the novelty of the medium itself. I also had seen in each of these artists potential to benefit from an encounter with AR. It was most gratifying to observe their imagination expand and stretch through the course of this project.

**DL:** AR seems to be where photography was during its early stage as an artistic medium. So you are correct in expecting a considerable evolution of the medium. Lastly, what did you hope to convey through this exhibition?

**SP:** This exhibition brought to attention one trait of the contemporary world we absolutely cannot do without: data. Waves of data surround us at any moment, though invisible to the naked eye. We are reminded of that realm as these artworks, conceived to exist only in the form of data, come into view through the AR app – each work is a visual mnemonic of the data-rich reality that we all live in.

## REFERENCES

1. Exhibition #AUGMENTED was presented as part of the official programming of THE SATELLITE SHOW, a new-media/performance/installation-oriented art fair that inaugurated in 2015 and was on view in Miami Beach from December 1 through 6, 2015.
2. Jonathan Steuer, *Defining Virtual Reality: Dimensions Determining Telepresence*, (Department of Communication, Stanford University, 1993).
3. Michael Kimmelman, *The Accidental Masterpiece On the Art of Life and Vice Versa* (Penguin Books, 2005), 176.

## BIOS

Dejan Lukic is a philosopher, writer, and teacher who addresses issues pertaining to the nature of images and the inescapable convergence of politics and aesthetics. He was trained as an anthropologist, and earned his Ph.D. from Columbia University in 2007. He has taught in Reed College (2009-2013), Columbia University (2007-2009), Eugene Lang College, The New School (2008), and Rutgers University (2007-2008). He currently teaches art criticism at School of Visual Arts and Parsons School of Design. | 5Dal.com

Seol Park is an independent art advisor and curator based in New York City. She founded Spark Art Management to serve as a platform for international artist liaison and exhibitions production. Before founding Spark Art Management, she previously worked for Christie's and The Curator's Eye online platform. She studied art history and design in Korea, Canada, and the U.S., and earned a Master's degree in American Art with honors in 2012 from Sotheby's Institute of Art.

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