Mexican Digital Art: Production in a Complex Environment

Cynthia Patricia Villagómez Oviedo

Guanajuato University, oviedo@ugto.mx,

*52 473 734 0677 ext. 5621

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Abstract

Mexican Digital Art has been poorly investigated, even it is a branch of art that has active digital artists who have been working for almost three decades. Today there are not enough places for exhibition or for training new artists. Because of that, the approach of this research is the digital artistic production in austerity environments, as a way to consider digital work an affordable form of art production. Through this, we believe is possible to contribute to multiply the number of artists, places and spread the Mexican Digital Art knowledge.

To achieve that purpose, we made several interviews (by phone, mail, video conferences or personal interview directly) to digital artists, teachers, or organizers of events related to Digital Art; also we attend to *Laboratorio Arte Alameda* (LAA), *Centro de Arte y Nuevas Tecnologias* (CANTE) in San Luis Potosi, *Centro Multimedia* of *Centro Nacional de las Artes,* among others.

On the other hand, the Digital Art work that has been produced in Mexico is the result of a complex reality that we are going to analyze. Digital Mexican artists have pointed out various subjects through their work; the study of this cases will allow us to understand the Mexican Digital Art field and their reality.

Hence, other purpose of this study is also to help knock down the existing preconception, that the Mexican Digital Art production is expensive. We cannot deny that there are expensive works of Digital Art, but most of them were made by foreign artists. Besides the work of art that is produced in Mexico has a national identity which is shown through their subjects and characteristics, as we are going to see in this research.

Digital Art, Mexico, production, environment, complexity.

In the beginning of this research, we studied eight different Mexican artists[1] who use electronics in their art pieces, the main interest was to discover their creative processes of production in order to create a method that could possibly help new artists in the field of Digital Art. Then the research evolved to different lines of interest, one of them is what we are going to read in the next pages and it is related to processes of creation in complex circumstances, such as work in difficult social and economic conditions, also the way the artist and their art transform the digital artistic panorama due to that context.

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[1] Arcangel Constantini, Ivan Abreu, Rafael Lozano-Hemmer, Gilberto Esparza, Leslie Garcia, Santiago Itzcoatl, Erick Meyenberg y Roberto Morales Manzanares.

Context

A common important factor of the artists who are part of this research is that some of them began studying a graphic design career (or other careers related with art and technology), then they abandoned their studies because they felt there was something missing on the career contents.

Other feature of this group of digital artists, is that they are capable of solving unexpected problems in very difficult situations. In addition to that, Mihaly Csikszentmihalyi, a well-known psychologist, said creative people have complex personalities, which means that one individual has characteristics of different personalities. That contributes to develop creative ideas, because he can see one problem with many possible and different solutions.

On the other hand, psychologist Abraham Maslow, considers there is an important relation between family and formal education and context, for him, those aspects are the real contributors for a creative person. In the artists that we observed, we noticed they have important links with science and technology in their childhood or youth.

In all the cases we see migration histories inside (among states of the Mexico) or outside the country, but the only artist who described himself as a Nomad artist is Rafael Lozano-Hemmer, because he lives in three different countries: Mexico, Spain and Canada.

We also observed that just a few artists have worked in a poor environment with few resources, like Leslie Garcia and Arcangel Constantini did at the beginning of their careers. Most of the artist work with government or institutional grants, or do commissioned work from galleries and museums.

Technology background in Mexico

Mexico and its diversity determines the forms in which the art is produced, this is shown through materials, topics and the statements that the artist use, most of them are product of what the artist saw, experienced or just select because they want to show how to build a better country, and place to live.

Our complexity as a Latin American country is determined by social, politic, economic and cultural conditions. The social aspects of Mexico involve sixty-seven different indigenous groups, some of them with their own language (like nahuatl, maya, otomi, mixteco y purepecha), customs and cosmogony, coexisting with that diversity are the cultural ideas of the Spanish heritage. In part, that is why it is difficult to have the same education, life style or even the same opinion on different issues that are important and vital for all. Politician deal with some people needs, but also with their own fails, one example is corruption: which is a huge problem in this days. On the other hand, economic situation is precarious, according to *Coneval* (National Council of Political Evaluation of Social Development) 62.8 millions[2] of people in Mexico live in poverty; All of that had produce artists with bigger awareness of the adversities and a bigger compromise also on pointing what is important to have a better life both for people and the environment.

Regarding to the incorporation of technology in Mexico –according with Leonel Corona- (Corona, 2004, p.p.222-238), the history of technology in our country has certain characteristics and it is important to recall due to the nature of the national production in Digital Art:

During the period of 1521 -1762, the economic and social organization on the Spanish Conquest was the same, so the introduction of production techniques was limited, Indian techniques were used to exploit natural resources. Science developed in an elitist manner, segregating Indian population to diverse tasks including slavery, although indigenous people already had knowledge in astronomy, agriculture, medicine and navigation, among others.

Despite Spanish Conquest, indigenous traditions did not disappear, cultural aspects such as language, clothing, eating habits, cooking, collective constructions, are still used today, for example the "Tequio" in the Mexican state of Oaxaca, which consists in the obligation in indigenous communities to make free work shifts to build roads, streets, public buildings, churches, or to help with new services such as education, electrification, water or hospitals[3]; "Tequio" shows the importance of community work to have a harmonious group life.

During the period of the Enlightenment (1763-1849) there were The Bourbon Reforms (a set of economic and political legislation promulgated by the Spanish Crown under various kings of the House of Bourbon), reflects the philosophic and cultural movement of XVIII century, that make emphasis on human progress and reasoning, according to L. Corona it meant increasing consumption and promoting a certain industrialization, which were diminished by the economic and political control characterized by the impulsive exploitation in taxes, militia and the expulsion of the Jesuits from Mexico. Nevertheless, in this period new techniques were incorporated and the creation and diversification of some industrial activities took place, for example, the first institutions

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[2] Coneval. https://www.coneval.org.mx/Medicion/Paginas/PobrezaInicio.aspx. Query: August 31, 2018.
[3] UNAM. *Los pueblos indígenas de México*, 100 preguntas.
http://www.nacionmulticultural.unam.mx/100preguntas/pregunta.html?num_pre=24. Consulta: 27 de marzo de 2012.

dedicated to science were created primary focus on mining sector. After Independence from the Spanish Crown in 1821, activities were centered on education and natural resources, the industrialization of the textile and iron and steel industry began.

During the period of 1850-1934, there is an increase of the knowledge due to the production of infrastructure for railroads and electricity, however progress does not applied to solve social demands but is used to luxury goods, this increased social inequality[4]. Also machines and technology were imported, which in a way stops development of national science and technology.

During the period on Modernity (1935-1993), the government leads a central part in the development of science and technology. Government organisms of science and technology were created. For L. Corona there was a second modernization from 1970 to 1993, and the National Council of Science and Technology (Conacyt) was created, technical education was supported, also in institutions of higher education, there were important achievements, however they fail to spread the interrelations of science, technology, production and education. From 1986, Mexico enter to the *General Agreement on Tariffs and Trade,* as a consequence there was privatization of government enterprises and an increase of foreign capital in the country[5].

From 1994 to date, there is evidence of how Mexico was unequally incorporated into industrial revolutions. Paradoxically, the incorporation of Mexico into the globalized knowledge sector depends on its scientific and technological capabilities in research centers, companies and in its institutional relations of cooperation and technology and information transfer, which clearly set the country in to disadvantage; Mexico is not a number one country in technological development, it has been a consumer of foreign technology.

So, those who work in this field use obsolete technology, because it is the cheapest, they go to flea markets where they find technology from twenty years ago to create (it is the case of Arcangel Constantini in his beginnings). There are very few artists who have the support of institutions to work with technology, or there are Mexican artists who work with resources from other countries to create like Rafael Lozano-Hemmer, despite of this, some of his works of art are inspired on Mexican topics.

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[4] *Ibídem,* p. 225.
[5] *Ibídem,* p.p. 228-229.

Production in Mexican Digital Art

Digital Art is a branch of the Art that use contemporary tools, because of that it defines our times. Today Digital Art is a term that represents all the production of artists who work with computer during the process or in the exhibition of the piece of art. Never the less, we have to consider that not all the digital representation is Digital Art, the border line is imprecise because Digital Art combines, art, science and technology; this aspects, generate a wide area of artistic creation that offers interesting stimuli and new challenges in terms of classification.

Speaking of Digital Art materials, some artist work with different recycled materials or objects that had been found in flea markets to explore the possibilities of creation in austere conditions, specially, when the artists are beginning their artistic work. In the particular case of Mexican Digital Art, there are several examples of the preoccupation of different artists to show their point of view around violence, justice, identity, ecology, among others.

Phases of creation

As we said, previous to this research a profound study was made about processes of creation of Mexican digital artists (Villagomez, 2015), the results we obtain, specifically in the phases of creation (preparation, intuition, incubation, evaluation, elaboration, communication) are linked to the present research. At that moment, we found the next characteristics of the artist processes:

a) Preparation. Among the aspects considered, this stage is about all the issues that awake the artist curiosity, then questions begin, and a problem-solving process takes place; so this stage is the product of intellectual observation and habits of profound thought.

   The group of artists we studied have interests in the following issues, from which might arise different processes of art production: science fiction, animatronics, sound and music, obsolete technology, computers, free software, the human body and characteristics simulated by technology, history, flea markets, among others.

   The artists saw the global and the local problems as an opportunity for profound thought their artistic pieces, sometimes because they want to make some problems visible and they want to invite the public to think about them, or they want to reinforce the identity of cultural groups through their work; like in Lozano-Hemmer's public art.

b) Incubation / Intuition. Are two stages of the process of creation that take place simultaneously, in incubation, ideas are taking place on the subconscious side of the brain and intuition is when all the pieces of a problem finally fit and you find a solution.

   Apparently, there are ideas that emerge suddenly. However, ideas arise due to time and quality in the artist's training and also from years of continuous work. The digital artist Ivan Abreu said that sometimes the ideas just arrive because you have been looking for them, other times because you just use the ideas that you already had and adapt them to the work, however he always starts a work of art for the substance (the meaning) not for the appearance.

   In this stage of the process, some artists use meditation and day dreaming as a resource to generate ideas, because these processes induce brain conditions for this stage: incubation takes place in the subconscious side of the brain.

   It is necessary to say that all stages of the creative process are linked, for example, in Preparation stage we talked about interests, but those interests become motivations in Incubation stage. Mexican digital artists find inspiration for their work in: consumerism, obsolete technology, urban environment, math, chaos, uncertainty, everyday rush, meetings with other artists and professionals of other areas, scientific research papers, viewing related non artistic things, environment, natural resources, energy and their uses, typography as an element, economy and technology in everyday life, psychotherapy, sketches, among others, like those related with human rights, racism and international relations with U.S.

c) Evaluation. One of the problems in the creative process is to decide which idea is the best, in other words, the real problem for artists is to choose the best idea worth the time that they are going to spend in developing it.

This stage was hard to research because the creative processes are not linear, that means several processes might be taking place in the mind of the artist, the stages do not take place in order, plus some pieces were made more than a year ago, so most of the artists did not recall precisely how or when they decided to make it.

However, the majority of the artists that were studied said they decided to develop an idea based on the knowledge they produce and acquire during the process. Others say they often ask themselves 'why', 'how' or 'what for' before they decide to develop an idea. In other cases, they decide to choose an idea by intuition, they trust their hunches. In some occasions they consult colleagues, search for more information on the Internet and books, read about the subject, and for example Leslie Garcia said that, if she feels the urge to talk more about the subject with her team, it's a sign that she has to do it.

d) Elaboration. This stage is where the execution of the idea takes place, which means the artist begins a phase of intense work with many problems he has to resolve and the development of a wide network of relationships with professionals of other areas who will contribute to the project. It is observed that most projects congregate professionals from other areas: engineers, photographers, manufacturers, programmers, architects, linguists, writers, composers, actors, astronomers, philosophers, biologists, researchers, communicators, designers, animators, therapists, diverse assistants and other artists.

The artist will be tested for his capacity for work and discipline, because in this stage he has to improve the art piece or pieces, so patience will be required; it is common that during the elaboration, the artists spend many hours working without noticing the time. Some of them mentioned they begin the project thinking of the main statement of the piece, not in the appearance.

Most of the artists mentioned that they are involved in projects which duration goes from weeks to years, and even some of their works remain open (they like to refer to them as artistic developments instead of a piece of art), that means they make endless projects; that is the case of "Bakterias" (1996-through now) from Arcangel Constantini.

Many of the artists said they do not work thinking about finished pieces, but with pieces that can be the beginning of others. In certain circumstances a project could stop due to technological limitations, physical exhaustion of the creator or by economic constraints.

The majority refers they work for the audiences to understand the messages on their pieces, however, the artist prefers the final results to be undetermined and with different results, depending on the way the public decides how to interact with the artistic project.

It is interesting to mention that artists like Leslie Garcia or Erick Meyenberg, write and draw thorough journals before and during the creation of the pieces, in which they register important data about the development of the project, like errors, successes and all the information that forms the corps of the artistic work.

Another project form of elaboration is the one that artist Leslie Garcia describes like processes of continuous work which correspond to research developed during years. Also, she said, sometimes she works while she is visiting other

artists in other cities or countries, that is an exercise of flexibility, because she has to adapt her way of working to different conditions, plus there is dialog on interests, proposals and ideas.

Is in this phase that our actual research is based: on the elaboration or production. We chose the study focus on complex environments, because we consider here it is one of the important differences between Mexican and international digital art work.

e) Communication. In accordance with Mexican psychologist expert in creation processes Mauro Rodriguez Estrada, some of the artistic projects are developed just as an exercise, or because the artist enjoys the process itself, in whatever way, the common situation is the artist wants the piece to be shown to the public; that is one of the most important motivations of doing it: to communicate.

f) Ivan Abreu, for example, searches for a positive reaction from the participant of the piece, he calculates the relevance of his art through the memory of the work by the spectator and/or participant; he likes his pieces to be remembered, because that means he achieves awareness of the person who interacts with his work. In the case of Arcangel Constantini, he searches for physical or mental reactions in his audience. Rafael Lozano-Hemmer said, that the public completes or finishes his pieces, which means he left his art works undetermined in such a way that thousands could interact physical or virtually. Gilberto Esparza searches for a change in the audience through profound thoughts. Leslie Garcia mentions that her pieces are like archetypes and they are not always understood by the public, she says there is interest to try an interaction with her pieces, anyway, her works have been made with austere materials and processes, which connects with Latin American audiences who live in permanent austerity also. In the case of Roberto Morales, he establishes direct and playful communication with the public because he presents music improvisation with both technology devices and traditional instruments, so his movements depend on the reaction of the public. For Erick Meyenberg, the thoughts on the aspects exposed in his work are essential. Finally, Santiago Itzcoatl refers he enjoys the reaction of the public. However, it is not his main intention to communicate something specific, he said his work does, but it is not his main purpose.

Leslie Garcia: independent work

She is a Mexican digital artist that worked in complex environment, was born in Tijuana, Baja California Norte (1980 *ca*); this city gained certain importance due to the artistic and cultural activity that took place the last decades.

Leslie Garcia has more than fifteen years working in the field. In an interview[6] the artist said that she wanted to study arts, but her parents did not like the idea, then she decided to study design, finally she did not finish the career. However, she began studying by herself different subjects, like arts, mathematics, physics, anthropology and philosophy. She also had close friends that were involved in education, art and culture. At the beginning of the year 2000, Garcia was exploring the possibilities of Max/MSP Patches and Pure Data; she also had some traditional paintings and she decided to make digital animations with them; she started using open source networks and the free access knowledge on the Internet. So, without enough economic resources and cero support from the government or special grants, Leslie Garcia did digital art work without support the first eight years of her career.

In 2002, Garcia created an art group with Carmen González, she called it "Dreamaddictive". Around 2010 the group attended to a very important event called "Dorkbot"[7]. At that time, they belong to different networks and participated organizing events. In January of 2011, she moved to Mexico City in order to teach at "Centro" one of the best new media universities in Mexico. The artist said[8] that teach at "Centro" was a shocking experience, because she used to work very freely, in austere conditions with lack resources, but in "Centro" they had everything.

In artist own words, she considers that many people think Digital Art and Electronic Art are expensive, because there are artists that receive big amounts of money for their work, she said, Rafael Lozano-Hemmer is the best example of that, especially with his exhibit on the 52th Venice Biennial called *Algunas cosas pasan más veces que todo el tiempo*, from that cases people begin to stigmatize the electronic work as art made by and for rich people, that is not true –Garcia said, most of the Digital Art in Mexico born in austere spaces and emerges as an alternative option of non-traditional forms of though and expression. Garcia thinks: when you are capable to learn by yourself and transform your reality through art, you start to think you are capable to transform your destiny[9] and you can spread that to other people.

So Mexican Digital Art is the reflection of the poverty of our society, which means their production characteristics are: works of art production with small amounts of money and resources, that it is also an escape of social problems. Because of that, Electronic Art emerges from the knowledge produce in small communities, where very low cost art pieces were created. That is why Leslie Garcia considers it is not possitive when Digital Art works are planned by the amount of money or the investment the artist can get, because it distances society from the possibility of starting Digital Art projects, which are also searches of knowledge.

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[6] Interview by Cynthia Villagomez, 14 and 15, January, 2013. Available on Vimeo: https://vimeo.com/user29545447
[7] "The main goals of dorkbot are: to create an informal, friendly environment in which people can talk about the work they're doing and to foster discussion about that work; to help bring together people from different backgrounds who are interested in similar things; to give us all an opportunity to see the strange things our neighbors are doing with electricity. dorkbot isn't really a forum for formal artist talks or lectures, but rather a chance for diverse people to have friendly conversations about interesting ideas". http://dorkbot.org/startadorkbot/. Query: January 5, 2013.
[8] Interview by Cynthia Villagomez, January 14 and 15, 2013. Available on Vimeo: https://vimeo.com/user29545447
[9] *Ibídem.*

Examples of Leslie Garcia works in austere conditions, are the ones she made in Dreamaddictive Collective from the year 2008 to 2011: *Open Source Orchestra,* is a project made with open source information that integrates digital and analogue sound circuits. The intention of the artists was to approach the public dynamically to the experience of manipulating electricity as a physical phenomenon that generates audio signals (Image 1)[10]. *Poesía_Sonora.pd* which put sound to poetry, it is a Patch (a small modification of a program, similar to an update that corrects or adds something to it) that make sound improvisation from micro sound recordings in real time (Image 2)[11]. Finally, *Untitled_Mood,* which "is a real-time video installation that explores the boundary between public and private person. The installation consists of a scenario that leads the audience in two ways: At first it activates the astonishment of the participants finding themselves in a public space. On the second stage, the audience reacts by adopting a simulation status, based on attitudes, postures and gestures of the public image of who they are or who they desire to transmit to society when they realize they are being observed. *Untitled_Mood* works as a closed circuit, build in Processing, which through a joystick moving images on a two-dimensional plane, creating a collage of snapshots."[12] (Image 3).

In an interview[13], the artist shared with us the categories and characteristics she observes in Mexican digital artists:

a) New generation of independent, autonomous and self-manage young people.
b) Artist with university education, who learn digital processes at school and they simply applied them to their work.
c) The artist-developer, the one who does everything, is fundamental for him to understand all the processes that occur and are part of the piece, usually he makes the code of the programs and the engineering design, but sometimes he ends up working with someone else.
d) The conceptual artist, who arrange digital thought processes and technological ones, in such a way that the technological factor is the "visualization device" of the concept.
e) The artist producing macro pieces of Electronic Art, where the concept or the technique are no longer important, the main thing is the macro production. The artist makes a general idea of exhibition, a process to follow, integrates the crew and then something spectacular emerges. Garcia said, those pieces are 'Hollywood type', but besides the incredible spectacle the piece offers, how they will impact the cultural panorama in Mexico?
f) People who become artists looking for self-knowledge, they develop art pieces as a result of their restless mind and cultural curiosity. Garcia said there are just a few artists with these characteristics in Mexico.

In Mexico we can give examples of artists in those categories, a) Lorena Mal, Leslie Garcia b) Gilberto Esparza, c) Ivan Abreu, Santiago Itzcoatl d) Erick Meyenberg, e) Rafael Lozano-Hemmer, f) Arcangel Constantini, Ariel Guzik (not electronic artist, but applies science to art on an extraordinary way).

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[10] Lessnullvoid. http://lessnullvoid.cc/content/2009/05/opensourceorchestra/. Query: July 7, 2018.
[11] Lessnullvoid. http://lessnullvoid.cc/content/2008/04/poesia_sonora-pd/. Query: July 7, 2018.
[12] Lessnullvoid. http://lessnullvoid.cc/content/2009/08/untitled_mood/. Query: June 3, 2018.
[13] Interview by Cynthia Villagomez, 14 and 15, January, 2013. Available on Vimeo: https://vimeo.com/user29545447

Finally, Leslie Garcia considers in Mexico if you want to have support for your work and gain notoriety, you have to move to Mexico City, if you do not, very probably is going to be that no one is going to know your work; that is a shame because there are artist working in other Mexican cities besides Mexico City; the artist gave some examples: in the north of the country in cities like Monterrey, Leo Marz and Daniel Lara, in Cuernavaca Ernani Barragán, among others.

The Digital Art Lab, CCH Vallejo

The Colegio de Ciencias y Humanidades, campus Vallejo of Universidad Autonoma de Mexico (UNAM), is a school for teen agers (from 15 to 18 years), they have a special workshop on Digital Arts. They produced a piece called "Ofrenda digital 2017" (image 4), that was made because the students experienced a very strong earthquake on September 19, 2017 of 7.1 (righter grades), that took place in Mexico City, through this piece they wanted to make catharsis of the terrible event, that destroyed part of the city again (there was a huge earthquake many years ago, the same day, the same city, but in 1985 with catastrophic results). So these young artists looked an explanation for the event, and they founded in our Pre-Hispanic heritage, through *Tlalcihuatl* myth, the *Nahuatl* goddess of earth.

Despite this work was made with the computers of The Digital Art Lab, is necessary to mention that the school is located in Gustavo A. Madero, area with the greatest number of people in extreme poverty in Mexico City[14]. This area also has a deep national symbolism, because there are human settlements of ancient Mexican civilizations, which date back to 1500 BC.

In an interview[15], Alberto Barrios Professor and Coordinator of Digital Art Lab said, that the intention is to give a complete working space to the students, where they can work freely, because they do not give a grade for the work that has been made, so there is no pressure just the joy to be and work there. On the web page of The Digital Art Lab you can read "We offer free training with free software, enhancing your creativity, developing interactive artistic projects autonomously or collectively."[16]

At the beginning of the video where they show their piece, we can read the following text: "On September 19 we lived in class a strong earthquake, it reminded us that we are part of a great living organism, as narrated by the myth of *Tlalcihuatl* the earth-woman" [17].

Finally, the students represent three Aztec elements: *Tlalcihuatl* (Earth-woman), *Tonalpohualli* (sacred Aztec calendar), *Quetzalcóatl* (feathered serpent, god of Mesoamerican culture). They made three different representations in colorful animations using video mapping technique, a hologram and a Feathered serpent moving through twelve computer screens. They created also an offering for *The Day of the Dead,* which celebrates our Pre-Hispanic heritage, because of that, the video is in *Nahuatl* language.

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[14] Coneval. https://www.coneval.org.mx/Informes/Pobreza/Pobreza%20urbana/Pobreza_urbana_y_de_las_zonas_metropolitanas_en_Mexico.pdf. Query: May 2, 2018.

[15] Interview by Cynthia Villagomez to Alberto Barrios Professor and Coordinator of Digital Art Lab. May 19, 2018.

[16] *Ibídem.*

[17] Made by students of High School CCH - Vallejo, UNAM. "Ofrenda digital2017", Digital Art Lab, CCH - Vallejo. Professor Alberto Barrios. Tlalcihuatl video mapping. https://www.youtube.com/watch?v=KtfFzfGZHtc. Query: June 8, 2018.

Elaboration with a minimum of resources, UAM-Lerma

The Universidad Autonoma Metropolitana campus Lerma, is located in Lerma de Villada in Estado de México. The Lerma campus was created in 2009, it is important to know most of the people in Lerma work in farming activities and have an important level of poverty[18]. The students of the Degree in Digital Art and Communication, coordinated by Professor Edmar Olivares Soria, integrated the group called *{*}.debug()*; they made *Ataraxia* (images 5, 6 and 7).

Ataraxia is a sound exploration that plays with the space and the way we perceived it, a multi-acoustic electroacoustic work for assembled multipercussions, electronics and video (Dur .: 10 '). This performance took place at the Cultural Center *Casa del Tiempo*, in Mexico City on April 19, 2018, during the celebrations of the 50th Anniversary of an iconic magazine on the Electronic Art field, called Leonardo.

What makes this work extraordinary is that the students made their instruments with recycled objects, like pieces of wood, metal, nails, cans, one computer case, strings, etcetera, all of which composed a very unique sound scape; for example, the computer case with strings that sounds like a zither.

About *Ataraxia,* Professor Edmar Olivares Soria said, "…all the pieces were cut in different ways, some are perforated to explore different sounds, for example, harmonics, [they] design instruments to have certain resonances, and design other instruments like this little zither [points to a PC casing with strings]. The idea is to build instruments that resonate from recycled and industrial materials […] and the main exploration is from physical space: How to place these sounds in space? How to distribute them? But not only that, according to their characteristics each element must have a special position, so that instruments do not get stuck with each other. [Then] It is possible to distinguish all the layers of sound that are happening". [19]

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[18] In 2016, 47.9% of people in poverty, 6.1% of people in extreme poverty. Coneval. https://www.coneval.org.mx/Medicion/Paginas/Pobreza-municipal.aspx. Query January, 2018. Excel doc: *Medición de la Pobreza, Estados Unidos Mexicanos 2016.*
[19] Interview by Cynthia Villagómez to Edmar Olivares Soria. April 19, 2018.

Conclusions

The processes of creation are often hidden by a halo of mystery, the research on these processes contributes to increase the knowledge on the field, by doing this, we discover more information about the methods and ways of work in Mexican Digital Art.

Then we conclude, that there are no studies with the characteristics we have shown here, that Mexican digital artists do not work with a lot of resources, this condition applies specially to new or young artists. Related to context, Mexican digital artists have certain circumstances that link them to science and technology, by family or close friends who introduce the artists to the subjects, among other situations. The ones who live in Mexico, began their work in austere conditions, with limited resources.

We also conclude that, if a society does not have enough resources to produce art with science and technology, that situation does not mean, the society could not produce Digital Art, on the contrary, it evolves into new and original forms which are in accordance with the available resources.

On the other hand, there are no previous studies also about economic austerity and processes of creation in Mexican Digital Art, but it is easy to see the evidence of this austerity through the use of flea market and recycled materials or free open source as a way to generate artistic works with less costs –even it is an international tendency in contemporary art; it is different the use of this kind of materials because you like them than use them because you do not have nothing else to work with. In this research, the study of the artist context and the use of poor materials show economic concern.

Possibilities are open to grow this research, it is not easy to discover the *leitmotif* of each artist to create despite the difficulties, for example, besides the serious economic problems, Mexico has raising levels of violence, that means a common person can be involved easily in violent incidents that might put their life in risk. What is the purpose of artistic creation in such a difficult and complex environment? The creation is the key element between the artistic ideas and a try to solve this problems? For some Mexican Digital artists might be that way.

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Image 1: *Open Source Orchestra* (2008-2011), Dreamaddictive Collective,
(Image from the artist, *Copyleft*).

Image 2: *Poesia_Sonora.pd* (2008-2011), Dreamaddictive Collective,
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Image 3: *Untitled_Mood* (2008-2011), Dreamaddictive Collective,
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Image 4: *Ofrenda digital 2017* (2017), Digital Art Lab, CCH-Vallejo,
(Images with permission of Alberto Barrios).

Image 5: *Ataraxia* (2018), {*}.debug() Collective, students UAM Lerma,
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Images, Tables, and charts

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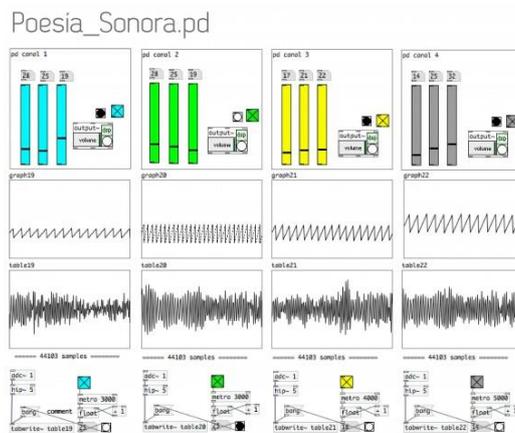(Image from the artist, *Copyleft*).

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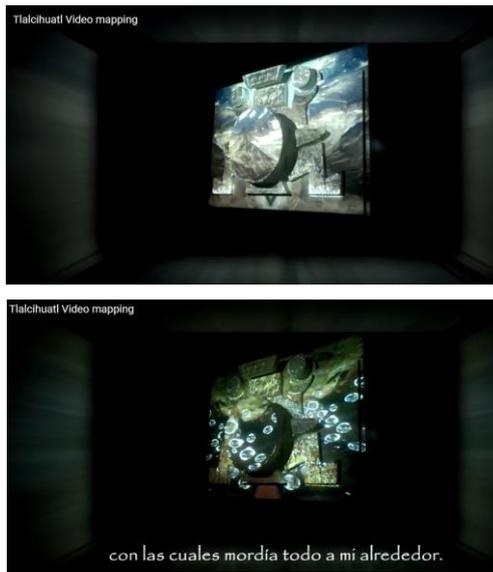(Image from the artist, *Copyleft*).

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