



Degree Project in Architectural Lighting Design

Second Cycle 15.0 hp

# Lights for Democracy:

Lighting as a tool for Brazilian political protests

HELENA CAIXETA

# **LIGHTS FOR DEMOCRACY:**

## **Lighting as a tool for Brazilian political protests**

HELENA PERES CAIXETA SILVA





**KTH Royal Institute of Technology  
School of Architecture and Built Environment  
Master of Science in Architectural Lighting Design**

**THESIS TITLE**

Lights for Democracy: Lighting as a tool for Brazilian political protests

**AUTHOR**

Helena Peres Caixeta Silva

**TUTOR**

Thomas Schielke

**KTH ALD**

Federico Favero (Course Responsible)

Foteini Kyriakidou (Teacher)

Ute Besenecker (Examiner)

Rodrigo Muro (Programme Director)

**COURSE CODE AF270X  
2021/2022**

# ABSTRACT

This paper investigates the role of artificial light as a tool for spread a political message, focusing on Brazilian political scenario. Given the recent context of the weakening of many democratic institutions around the world together with Covid-19 pandemic, new ways of protesting have been transforming the character of political demonstrations. The aim is to identify which tools are being used in Brazil for this purpose and to comprehend what is the future of light protests. First, an analysis of how light has been incorporated into political art is briefly described. Then, some recent political protests around the world in which light was used in different ways are presented. After an overview of the use of light in contemporaneity, the research focus on Brazilian protest scene using three light tools: drones, lasers and projectors.

The research methodology is conducted through case studies of works by five artists combined with interviews with artists, projection collectives and academic experts. The results show that the pandemic in Brazil along with political mismanagement, triggered a massive wave of projections throughout the country. What before the pandemic had already gained strength, after the year 2020 took on a larger dimension. As a result, projections became popular to the extent that workshops were held in low-income communities to teach people how to build projectors with flashlights and paper. Another aspect raised during the research is that lasers have taken hold and tend to become more popular in the coming years. There is no Brazilian national legislation for the use of lasers, projectors and drones in cities during protest situations, as the laws are in each individual state. Given this growth in the use of these lighting tools, a national law may be created.

Keywords: Brazilian protests, lighting, lights for democracy, projections, political lighting

## **ACKNOWLEDGMENTS**

Firstly, I would like to thank my tutor Thomas Schielk. His commitment to mentoring me as well as his enthusiasm for the topic were fundamental for my research. After a lecture held by Thomas during the course, I became inspired to pursue this subject that has interested me since always. I would also like to thank Federico Favero, for his dedication and teachings. He encouraged me to feel confident at such a decisive moment of my academic life. To my professors, Rodrigo Muro and Foteini Kyriakidou, thank you for this wonderful journey together and for all the knowledge you have shared with us. This research could not have been done without the collaboration of so many people. I would like to thank all the interviewees for dedicating their time and effort in making so many fruitful discussions. I would like to express my gratitude to my friends, from near and far, for their support and companionship. Finally, I want to thank my family for providing me with the most important support, their love. They enable me to feel safe and to pursue all my dreams without fear.

# INDEX

<b>1.</b>	<b>INTRODUCTION</b>	<b>9</b>
1.1	Light and Art	9
1.2	Light and Activism	10
1.3	Light and Technology	11
1.4	Personal Remarks	11
1.5	UN Sustainability Goals	12
<b>2.</b>	<b>METHODOLOGY</b>	<b>12</b>
2.1	Case Studies and Combined Strategies	12
2.1.1	Background	12
2.1.2	Case Study	12
2.1.3	Expert Interviews	12
2.1.4	Mixed Methods	13
2.3	Research Limitations	13
<b>3.</b>	<b>RESULTS</b>	<b>14</b>
3.1	Three Lighting Tools	14
3.1.1	Laser as a tool of protest - 01	14
3.1.2	Laser as a tool of protest - 02	14
3.1.3	Video Mapping as a tool of protest - 01	15
3.1.4	Video Mapping as a tool of protest - 02	15
3.1.5	Drones as a tool of protest	16
3.2	Expert Interviews	16
3.2.1	Projection Collectives	17
	3.2.1.1. O. F. - Projetação Colletive	
	3.2.1.2. Rafael Rasone - Projetemos Collective	
	3.2.1.3. Mozart Santos - Projetemos Collective	

<b>3.2.2</b>	VJ's, artists and first-time operators	<b>17</b>
3.2.2.1.	Fernando Vaz	
3.2.2.2.	Rafael Cançado (Homem Gaiola)	
3.2.2.3.	Rodrigo Araujo (Studio Bijari)	
3.2.2.4.	Paulo Fluxus	
3.2.2.5.	Alexis Anastasiou	
3.2.2.6.	Roberta Carvalho	
<b>3.2.3</b>	Digital media communication experts	<b>18</b>
3.2.3.1.	Marília Pasculli	
3.2.3.2.	Luciana Moherdau	
<b>4.</b>	<b>DISCUSSIONS</b>	<b>19</b>
<b>4.1</b>	Introduction	<b>19</b>
<b>4.2</b>	Light Communication	<b>19</b>
4.2.1.	Lighting collectives	<b>19</b>
4.2.2.	The power of light	<b>20</b>
<b>4.3</b>	Light and Graphics	<b>20</b>
4.3.1.	Projection style due to limitations	<b>20</b>
4.3.2.	Brazilian identity	<b>20</b>
<b>4.4</b>	Light Tools	<b>21</b>
4.4.1.	Softwares	<b>21</b>
4.4.2.	Lasers	<b>21</b>
4.4.3.	Video projectors	<b>21</b>
4.4.4.	Drones	<b>21</b>
<b>4.5</b>	Political Results	<b>21</b>
4.5.1.	Legislation	<b>21</b>
<b>5.</b>	<b>REFERENCES</b>	<b>22</b>
<b>6.</b>	<b>APPENDIX</b>	<b>24</b>
complete interviews and questionnaires		
<b>6.1</b>	Laser as a tool of protest - 01	<b>24</b>
<b>6.2</b>	Laser as a tool of protest - 02	<b>25</b>

<b>6.3</b>	Video Mapping as a tool of protest - 01	<b>26</b>
<b>6.4</b>	Video Mapping as a tool of protest - 02	<b>27</b>
<b>6.5</b>	Drones as a tool of protest	<b>28</b>
<b>6.6</b>	Projection Collectives	<b>29</b>
<b>6.6.1.</b>	O.F.	<b>29</b>
<b>6.6.2.</b>	Rafael Rasone	<b>30</b>
<b>6.6.3.</b>	Mozart Santos	<b>30</b>
<b>6.7</b>	VJ's, artists and first-time operators	<b>31</b>
<b>6.7.1.</b>	Fernando Vaz	<b>31</b>
<b>6.7.2.</b>	Rafael Cançado (Homem Gaiola)	<b>32</b>
<b>6.7.3.</b>	Rodrigo Araujo (Studio Bijari)	<b>33</b>
<b>6.7.4.</b>	Paulo Fluxus	<b>34</b>
<b>6.7.5.</b>	Alexis Anastasiou	<b>35</b>
<b>6.7.6.</b>	Roberta Carvalho	<b>36</b>
<b>6.8</b>	Digital media communication experts	<b>38</b>
<b>6.8.1.</b>	Marília Pasculli	<b>38</b>
<b>6.8.2.</b>	Luciana Moherdau	<b>39</b>
<b>6.9</b>	Questionnaires	<b>40</b>

# 1. INTRODUCTION

Although we do not yet have the required historical distance to deeply analyze all the consequences that the pandemic of Covid-19 caused in the world, one can consider that each country lived a different experience. As a Brazilian living in São Paulo, I can affirm it was a tough experience dealing with the pandemic and political crisis at the same time. The public policies adopted by the federal government contributed to a chaotic scenario in the country: the president not only denied the gravity of the problem several times, but also questioned the effectiveness of science. The corruption scandals concerning the purchase of vaccines made matters worse [1]. At the same time that the pandemic was spreading in Brazil, the deforestation rate rose drastically, especially in the Amazon and Pantanal regions [2]. Faced with a scenario of political, economic and environmental tragedy and an unprecedented health crisis, the Brazilian population needed to reinvent itself in order to protest during social isolation [3] [figure 1].

Light as a tool for activism was already in use before the quarantine period in Brazil. From 2020 on, video mapping, laser mapping and other means of protesting with light took on another dimension of importance. Brazilians experienced a period where new political scandals emerged every minute in a society prevented from taking the streets due to a so far unknown virus. It was essential to find quick and effective ways to enforce the democratic right to protest [3].

Technology and social media were key for this movement to happen. A massive protest movement began to occupy the architecture of many Brazilian cities. Building façades, public spaces, and iconic landmarks were lit up with messages of protest, denouncement and grief. This confluence between urban space and light enhances physical and architectural relationships that present new aesthetic, poetic, and political questions [4, pg. 91].

The thesis shows how light tools have been used in Brazilian protests, analyzing specific techniques and tools of light protest. In addition, through interviews with visual artists using digital media (VJs), activists and experts on the subject, an analysis is presented of how this movement has transformed political protest on the national scene. By analyzing the recent past and the present, this study also questions what the future of protest light will be.

Given this background, the research main question is:

***How is lighting being used to support political messages in Brazil and what is its future?***

## 1.1 LIGHT AND ART

Are public projections and other urban interventions using light - a combination of technology, graphics, and politics - a new approach of Street Art? Since urban art has the aim of democratizing the use of communication tools, one may understand that projections have acquired this role. They are mostly ephemeral, reminding us of the impermanence of all urban form and image [5]. “This ephemeral nature of street art also highlights the range of timescales of the visual and physical cityscape – it is ephemeral in contrast to the endurance of the wall or surface on which it appears.” [5] In this case, the walls or surfaces of cities are lit up with light, color, graphism and specific meanings. Historically, projections are performed by VJs. Their origin is underground urban nightlife of urban centers [6]. These underground parties have had a political meaning since their creation, since they represent more than entertainment. They are also avant-garde and resistance movements.

Over the years, I personally noticed that VJ's have transformed and resinified their role, occupying not only spaces for entertaining, but also urban public spaces for protesting. These artists plays an outstanding function within the evolution of urban media art, as they provide additional value for lights that are now being used as a tool for political expression on the Brazilian political scene. According to Rafael Schacter, placing art with authenticity is a more important factor than the aesthetic context of images. From this premise, the urban projections and political installations



Figure 1. Projections in São Paulo, Brazil, during Covid-19 pandemic.

that are connected with lighting are expected to adapt to technological evolutions and the ongoing interaction with cities [7].

## 1.2 LIGHT AND ACTIVISM

Light is used for political activism and different forms of intervention with light respond to different communication strategies.

All acts of public visual art are inherently political [5]. Cities, as well as politics, have a temporary character, once both of them are dynamic. Artificial light becomes a key instrument, since its materiality is also flexible and adaptable. As a consequence of this dynamism, these transformations are often improvised. Whether produced by artists, VJs or first-time operators, protesting with light does not necessarily require previous organization. Some examples of how light has been used for political protest were selected for developing this study. During the selection, the intention was to demonstrate how lighting - or the lack of it - can have different effects in a political movement.

Lights to blind - Santiago, Chile, 2019 - Protesters used handheld lasers to confront riot police and strike down the drones that were monitoring the mass protests against the government [8].

Darkness to blind - Brasilia and Rio de Janeiro, Brazil, 2013 - During June 2013 protests, two episodes have shown how Brazilian authorities used light to repress protesters. At National Congress in Brasilia [figure 2], external lights were turned off to stop people from marching [9].



Figure 2. Protesters at National Congress of Brasilia during June 2013 protests.

The same occurred on Presidente Vargas Avenue, in Rio de Janeiro. Dozens of protestors were caught by surprise by a public lighting blackout on the avenue, and also by the simultaneous interruption of cell phone signals. With the

darkness, police began to behave aggressively against the protesters. The public light company and the police acted in collaboration to attack the population in the darkness [10].

Lights to occupy – Montreal, Canada, 1998 - Artist Alfredo Jaar used red lighting to fill a cathedral's cupola in a noble neighborhood of Montreal [figure 3]. When invited by the government to make an installation at the cathedral, Jaar walked around the upper middle class area for a few months. During one of his visits, he discovered that the district also had shelters for homeless people. After a conversation with them, Jaar asked what disturbed them most about the neighborhood and their invisibilities to society was the answer. With their permission, Jaar installed in those shelters a device, where the homeless people could turn on the red light in the cathedral, making their presence visible for the neighborhood through light. [11]



Figure 3. Artist Alfredo Jaar used red light to fill a cathedral's cupola in Montreal in 1998.

In 2015, in Spain, the world's first hologram protest took the streets of Madrid. Forbidden by the authorities to protest in front of government buildings – including universities and hospitals - citizens organized the first hologram protest in history [figure 4] [12].

Back in the 1980s, in New York City, Polish artist Krzysztof Wodiczko projected images of homeless people that were living around Union Square onto the square's monuments. A reurbanization project intended to remove the population from the area, and Wodiczko created the *Homeless Projection* project to give visibility to those threatened by the public authorities [4, p. 92]. The Polish artist was born in a country destroyed by the II World War, and part of his work is to question memorials of war-related figures. In 2012, also in New York, he projected images of Afghanistan, Iraq and Vietnam war veterans on the statue of Abraham Lincoln [13].



Figure 4. The world's first hologram protest took the streets of Madrid in 2015.

### 1.3 LIGHT AND TECHNOLOGY

The evolution of lighting technology is integral to the evolution of projection-based art. Early projection lanterns using candles or oil wicks enabled public performances akin to slide-shows, but only in limited, light controlled situations [5]. However, this evolution is a crucial factor towards the popularization of lighting fixtures. From 1990 to 2010, the curve of this progression is upward and surprising, since a projector that used to have a capacity of 8,000 ANSI lumens, began to have 40,000 ANSI lumens. Currently, the most widely used projectors in large-scale projection mapping output 20,000 ANSI lumens. We can expect that, in 20 years, those projections will be created by equipment with 200,000 ANSI lumens [13]. In this way, projections start to occupy more strongly environments with external and unpredictable light interferences, as the city centers.

The current technological phase provides opportunities for new forms of contextual art using illumination and projection to create ephemeral works that complicate the questions of erasure and authority in the public visual landscape, by leveraging their immateriality and temporality [5].

Large scale projection mapping transforms architecture into an experience, a potentially infinite sequence of forms and images that take place on the surface of a building. Digital facades can be synchronized to a soundtrack, follow instructions from a smartphone, react to the choices of the building residents or interpret their mood through social media posts. Building facades thus become dynamic systems that interact with the street in real time, causing interference and being interfered [5].

Many other light sources can be used for demonstrations and the paper is focused on exemplifying just a few of

them, considering the Brazilian political context. Among the most popular light sources in political protests, video projectors have a prominent position. Nowadays they may be considered affordable equipment and can be used with basic softwares that does not require in-depth technological knowledge. Projectors allows both simple and sophisticated results. In addition to them, lasers also belong to the category of popular light instruments. The laser beam can reach long distances and may also be more visually impressive for urban projection compared to the light emitted by a video projector. As well as the video projector, the laser can be found in different wattages and light outputs [17]. Ultimately, drones are also starting to be used as a protest tool. The drone-projector reaches building facades and spreads political messages through a mobile command. Artistic performances with large numbers of drones are slowly becoming popular in Brazil. Compared to projectors, drones are a recent tool, which is why they are still a high-priced device. Furthermore, they have several restrictions on their right to be used in cities, as it is a tool that occupies the skies [18].

### 1.4 PERSONAL REMARKS

For many decades artists have been using light as a tool for political protest in different ways. Jenny Holzer, Alfredo Jaar, Krzysztof Wodiczko, Cildo Meireles are embryonic references for this research. When Alfredo Jaar illuminated Times Square in New York saying "This is not America," one can see how powerful a political message can be when illuminated on an urban scale [figure 5]. Although a worldwide analysis of these political light movements is also of my interest, the tragic situation of Brazil's recent politics pushed me to focus this research on my country's context. To this end, my methodology is based on the premise of analyzing the work of artists, VJs, and activists who dedicate their causes to the social and political causes of Brazil.



Figure 5. A Logo for America, 1987/2014, by Alfredo Jaar.

## 1.5 UN SUSTAINABILITY GOALS

This study aims to investigate political protests that defend and strengthen democratic institutions, opposing to authoritarian governments. The research will exemplify how light can be used to empower political movements that defend democracy, minority populations, and the environment. This work relates directly to two of the UN’s sustainable development goals: reduced inequalities and peace, justice and strong institutions.

Target 10.3 aims to ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard [19]. Target 16.6 has the purpose of develop effective, accountable and transparent institutions at all levels [20]. In this research light is considered a powerful tool to contribute to these goals.

# 2. METHODOLOGY

## 2.1 CASE STUDIES AND COMBINED STRATEGIES

### 2.1.1 BACKGROUND

Being a citizen of São Paulo, Brazil, for the past twelve years, has made me witness the changes of lighting as a political instrument, in particular the breakthrough of 2020 projections

during pandemic times. All the works analyzed here and their respective authors are of also from Brazilian origin. Given this background, I present in chapter 2 the methodology of the research in order to answer the main question.

### 2.1.2 CASE STUDY

“A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident.” [16] Case study is a qualitative method and the subjective views of the researcher play an import part on the results [15]. Considering political light works done by Brazilian artists, VJs and activists, three different tools in use in Brazilian protests will be analyzed: LASER MAPPING, VIDEO MAPPING and DRONES.

Two laser works, two video mapping installations and one drone installation were selected for this case study. Each installation was made by a different artist. Within each work, four aspects were analyzed: political context, aesthetic / design language, technical aspects and subsequent communication [figure 6].

### 2.1.3 EXPERT INTERVIEWS

According to Bortz, the expert interview is classified as a variant of the qualitative individual survey. It is regarded as a collective term for open or partially assessed surveys of experts on a given area or topic. [14]. This methodology is described by Lamnek as an investigating and informative form with the aim of learning about knowledge. The respondent then is considered as a source of information for the facts [21].

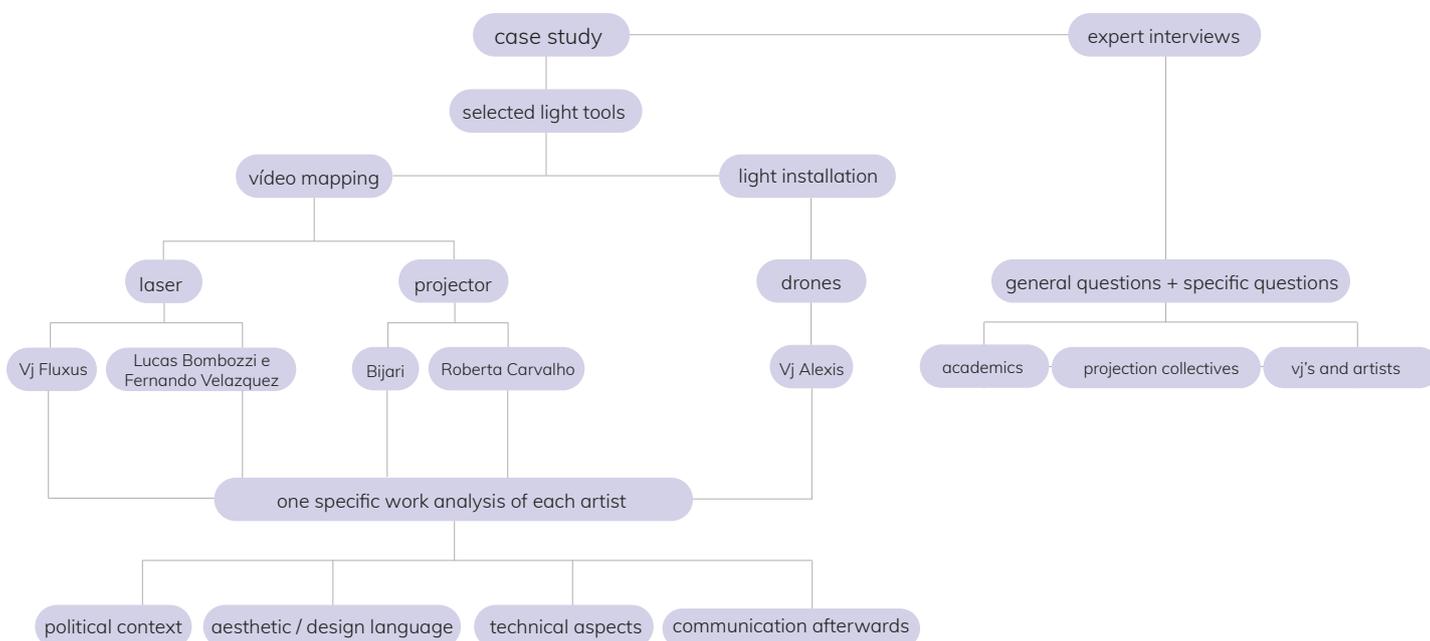


Figure 6. Detailed diagram of research methodology.

In parallel to the case study, twelve professionals, academics, VJs, artists and/or researchers on the subject were interviewed. A questionnaire was created with five to seven general questions and two specific questions for each interviewee considering their professional context. During the interviews, questions outside the scope have arisen in order to enrich the results. All interviews were conducted online, in Portuguese, and recorded in Zoom platform. The audio extracted from each interview was converted into text and presented in the results in text format and images contextualized with the conversations. All texts were translated to English. The texts were displayed in question and answer format, but in a way to elucidate the main lines of each interviewee in order to answer the main question. All interviewees were required to approve the corresponding texts before publication of the survey. The questionnaires translated into English are present in the Appendix section of the research, as are the interviews in full format.

### 2.1.4 MIXED METHODS

“The strategy of qualitative social research is to discover the causal mechanisms in social processes by investigating one or fewer cases as completely as possible. The qualitative methods follow the case-based strategy. They interpret and describe social issues and try to fully elucidate them in terms of the interpretive paradigm.” [22]

The case study comparing three methodologies and the experts interviews are back-to-back in order to find questions

for the main question [figure 7]. The results of interviews and the comparison between the light tools were starting point for the discussion of this research. It is expected that the discussion is more meaningful than the results, since the discussion was analyzing the content of each interview, drawing parallels, finding strengths and weaknesses, analyzing future potentials of light as a protest tool, and also unforeseen discussions that may also be relevant. The two methodologies combined strengthen the way for a relevant discussion of the research.

## 2.2 RESEARCH LIMITATIONS

Protests with light are quite young. Therefore, there is no extensive literature available in the art scene. The paper discusses a recent history of light protest, beginning in the 1980s. Furthermore, interviews with experts have the strength of having data and information based on human experience; however, the results should not be generalized [13]. Even though the interviewees are professionals or experts on the subject, they represent a small part of the Brazilian activist scene. From the collected answers, I discuss possible trends and futures of protest light. The research considers three light tools (laser, video mapping and drones), being these devices a selection of all different possibilities to protest using light as a tool. Since drones are a recent resource, I have found only one artist in Brazil who has deeply investigated it. Therefore, I do not have different reports of experiences using drone to compare them.

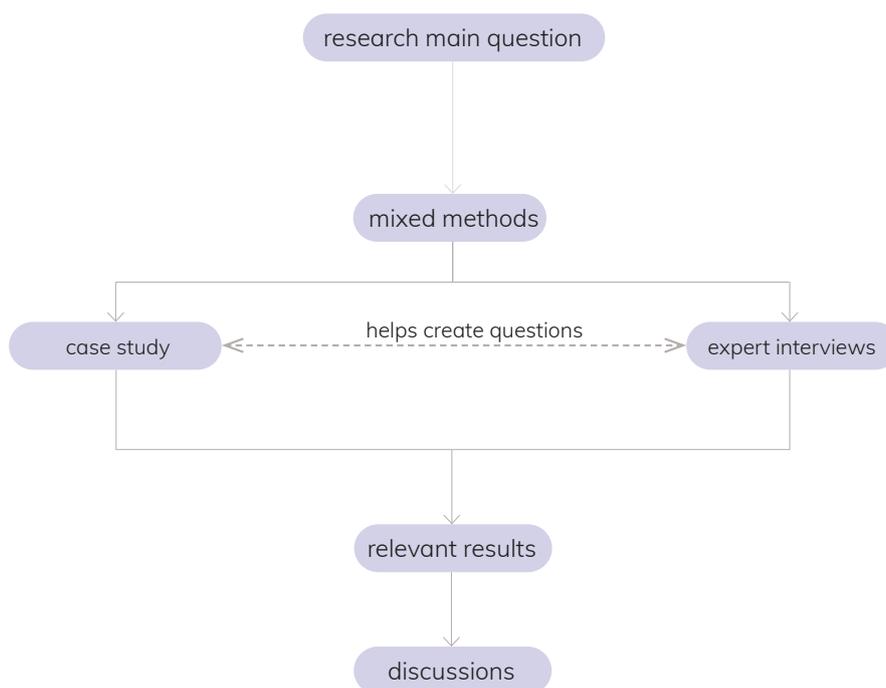


Figure 7. Diagram of how the methodology aims to achieve relevant results.

# 3. RESULTS

## 3.1 THREE LIGHTING TOOLS

All information presented in section 3.1 are excerpts from interviews that can be found complete in Appendix for a better understanding.

### 3.1.1 LASER AS TOOL OF PROTEST - 01

Artist: VJ Fluxus, based in São Paulo, Brazil

Work: “Fora Coronaro” / “Jail Bolsonaro”

POLITICAL CONTEXT	The laser projection series is focused on protesting against the government of President Jair Bolsonaro, particularly during the 2020 pandemic period [figure 8].
AESTHETIC DESIGN LANGUAGE	This series projection, both in Brazil and abroad, are made in a quick and improvised way. For this reason, aesthetics and graphics carry simple and direct forms. Pink, green, and blue colors are predominant. The laser mapping takes the shape and proportion of the buildings.
TECHNICAL ASPECTS	All interventions were made by the artist with the same equipment, a Swiss projector of 10W, 4kg, computer, tripod and extension cable.
COMMUNICATION AFTERWARDS - RESULTS	The artist is part of a network between activists in Brazil and abroad [figure 9]. His work aims to amplify the political degradation of the president on a global level.



Figure 8. Projection in São Paulo, Brazil. May 2021.



Figure 9. Jail Bolsonaro projected in Lviv, Ukraine. September 2021.

### 3.1.2 LASER AS TOOL OF PROTEST - 02

Artists: MOOLLA Collective

Lucas Bambozzi and Fernando Velazquez, based in São Paulo, Brazil

Work: “Entropia Mineral / Opereta”

POLITICAL CONTEXT	This work intended to denounce a historical environmental problem in Minas Gerais state. Some mining companies are involved in environmental violations due to irregular extraction in preserved areas, as is the case of the Serra do Curral.
AESTHETIC DESIGN LANGUAGE	The blue color was chosen for its visibility at night [figure 11]. In addition to the beam projection, the artists projected with the same Laser projector a phrase on a building in Belo Horizonte with the sentence “look behind the mountains” [figure 10].
TECHNICAL ASPECTS	The laser projector had 6W of power and weighed about 20Kg. Faced with heavy equipment, the practicality of transportation was limited.
COMMUNICATION AFTERWARDS - RESULTS	Months after the work was done, local political authorities decided to revoke the law that protected Serra do Curral, allowing its mineral re-exploitation. After the political coup, images posted previously on the artists’ social media, regained large scale visibility.



Figure 10. Laser projection in Belo Horizonte, Brazil, 2021.

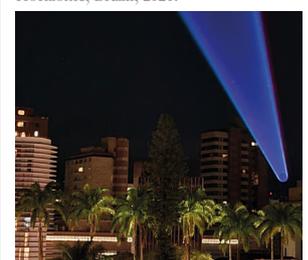


Figure 11. Laser beam towards Serra do Curral. Belo Horizonte, Brazil, 2021.

### 3.1.3 VIDEO MAPPING AS TOOL OF PROTEST - 01

Artist: Rodrigo Araujo from Bijari Studio, based São Paulo, Brazil

Work: “Vocabulário Combativo”

<p>POLITICAL CONTEXT</p>	<p>Combative Vocabulary is present in Brazilian demonstrations since 2013. Some of their actions include protests in support of democracy, indigenous rights, and environmental causes.</p>
<p>AESTHETIC DESIGN LANGUAGE</p>	<p>Presents an in-depth research of typography, graphics, colors, and design. Most of graphic works are made in pink, white, red and black colors, which are appropriate to be projected at night.</p>
<p>TECHNICAL ASPECTS</p>	<p>The images are simple to be projected, requiring nothing more than to respect the buildings’ proportions [figure 13].</p>
<p>COMMUNICATION AFTERWARDS - RESULTS</p>	<p>Graphic pieces were published online and also transmitted to projection collectives as Projetemos. Sometimes they had projected images themselves, and at other times people from all over Brazil projected their images [figure 12].</p>



Figure 12. Graphic poster projected on the city. São Paulo, Brazil, 2021.



Figure 13. “Not him”. São Paulo, Brazil, 2018.

### 3.1.4 VIDEO MAPPING AS TOOL OF PROTEST - 02

Artist: Roberta Carvalho based in Pará, Brazil

Work: “Symbiosis” / “Queimadas”

<p>POLITICAL CONTEXT</p>	<p>Roberta’s work seeks to debate social and cultural subjects of Brazil. She comes from the northern part of country, a region which is constantly struggling for representativity. Her work is strongly connected to environmental issues and technology.</p>
<p>AESTHETIC DESIGN LANGUAGE</p>	<p>In “Symbiosis”, Roberta invited riverine populations from Amazonia to have their faces projected on trees [figure 13]. When “Queimadas” was projected, the sky of São Paulo was reddish from urban pollution, giving a more realistic impression to the burning effect.</p>
<p>TECHNICAL ASPECTS</p>	<p>Both works are a mapping installation, requiring certain distance between the projector and the surface to be projected. They were planned before execution. “Queimadas” was made with six powerful projectors [figure 14].</p>
<p>COMMUNICATION AFTERWARDS - RESULTS</p>	<p>“Queimadas” was an impactful work in terms of repercussion. Its objective was to be disseminated in the press and social networks. Besides “Symbiosis” was made to be appreciated at the moment of action, its purpose is to be a work in photography and video.</p>



Figure 13. “Symbiosis” work. Indigenous people projected onto the Amazon rainforest. Since 2007 is being projected.



Figure 14. Projection at Ibirapuera Park in order to raise awareness about the destruction of Amazon and Pantanal regions. São Paulo, Brazil, 2020.

### 3.1.5 DRONES AS TOOL OF PROTEST

Artist: VJ Alexis, based in São Paulo, Brazil

Work: “Global Marijuana March”

<p>POLITICAL CONTEXT</p>	<p>The marijuana march is an annual event that takes place in several countries in order to support the legalization of cannabis.</p>
<p>AESTHETIC DESIGN LANGUAGE</p>	<p>The graphic design chosen for the action is simple, direct, and communicative. As the projector is flying, the action aimed to find suitable walls so that the images could fit in, in order to obtain proportion between the architecture and the image [figure 15].</p>
<p>TECHNICAL ASPECTS</p>	<p>A drone is a platform on which a projector with its own battery is attached and has a LED ring around it. The device still carries an ANSI lumens limitation. Battery life is about ten minutes, which limits how long the equipment can operate.</p>
<p>COMMUNICATION AFTERWARDS - RESULTS</p>	<p>It is a fully independent platform capable of flying and accessing previously inaccessible places [figure 14]. From the perspective of light power, it is still under development and has great potential.</p>



Figure 14. New tool of protest being explored by Alexis Anastasiou. São Paulo, Brazil, 2022.



Figure 15. Drones flying in São Paulo, 2022.

## 3.2 EXPERT INTERVIEWS

A group with a total of eleven people was selected for interviews. The interviews varied from 40 to 1.5 hours long, and relevant excerpts from each conversation will be presented here. The main points of the interviews will be presented in the discussion of this final paper. The interviewees were divided into three groups, 3.2.1, 3.2.2 and 3.2.3. Group 3.2.1 refers to Brazilian projection collectives. Group 3.2.2 is composed of VJs, artists and first-time operators who make visual works using light as a political tool. Group 3.2.3 is composed of people who study media communication theories and/or political theories. These three groups answered five to seven similar questions and two specific questions related to their respective backgrounds.

The answers of each interviewee was analyzed and compared in order to find an overview of how light has been used as a tool for political protest in Brazil.

All information presented in section 3.2 are excerpts from interviews that can be found complete in Appendix for a better understanding.

### 3.2.1 - PROJECTION COLLECTIVES

- 3.2.1.1. O. F.
- 3.2.1. 2. Rafael Rasone
- 3.2.1. 3. Mozart Santos

### 3.2.2 - VJ'S, ARTISTS AND FIRST TIME OPERATORS

- 3.2.2.1. Fernando Vaz
- 3.2.2.2. Rafael Cançado (Homem Gaiola)
- 3.2.2.3. Rodrigo Araujo (Studio Bijari)
- 3.2.2.4. Paulo Fluxus
- 3.2.2.5. Alexis Anastasiou
- 3.2.2.6. Roberta Carvalho

### 3.2.3 - DIGITAL MEDIA COMMUNICATION EXPERTS

- 3.2.3.1. Marília Pasculli
- 3.2.3.2. Luciana Moherdaui

### 3.2.1 - PROJECTION COLLECTIVES

#### 3.2.1.1. O. F. - Projetação Collective

- A) Projetação was created during June 2013 wave of protests.
- B) The collective objective is to “throw light” on the urgencies of society and strengthen movements of struggle.
- C) There is a meaning behind where you project and on what surface the image will be projected.
- D) When the image of the projection is released online, it goes into the field of infinity.

#### 3.2.1.2. Rafael Rasone - Projemos Collective

- A) Graffiti is political as projections.
- B) In the first month of Pandemic there were approximately fifty people in Projemos Whatsapp group, while in the second month this number changed to one hundred and fifty.
- C) He sees the light as another tool of protest and the power of going viral in social networks is fundamental.
- D) Back in pandemic, projections were left on for three hours, while today they remain on for only minutes. The focus is to project, take a picture and post it on social media.
- E) We can conclude that the collective’s range of action covers almost the entire country. Besides the five regions in Brazil, Projemos has international networks.
- F) During 2020, advertising companies noticed projections power during pandemic. Projemos kept on growing, reaching museums where curators invited them to participate in exhibitions.
- G) In 2022, for the first time, left-wing political presidential campaigns are being broadcast by projections in the cities.
- H) He doesn’t know about projections from right-wing.

#### 3.2.1.3. Mozart Santos - Projemos Collective

- A) The project emerged not only as a protest, but as an informative tool.
- B) Projemos is more than a collective, it is a network.
- C) They created a free software that can be accessed online through their website.
- D) Projemos aims to create free projection tools and for this purpose they are in contact with programmers.
- E) “We are illuminating walls to illuminate people. Light serves to carry a message. We work with light and with the lack of light.”
- F) Projemos has already given workshops in Morro do Alemão, in Rio de Janeiro. They also have produced cine clubs in the countryside of Ceará.
- G) They want to teach people how to use and build lighting tools. Through a workshop, they taught people how to build projectors with flashlights and stencils.
- H) In this way, low-income populations that cannot afford to purchase the tool, are also enabled to project.
- I) An aesthetic was created due to the technical limitation.
- J) The aesthetics of video mapping was imported from Europe to Brazil and he believes that there is much to be developed when it comes to the Brazilian identity as an aesthetic.

### 3.2.2 - VJ’S, ARTISTS AND FIRST TIME OPERATORS

#### 3.2.2.1. Fernando Vaz - Academic professor and political activist

- A) Fernando borrowed a projector during pandemic and tried for the first time to explore the tool. He is part of Projemos Collective.
- B) At Projemos, the script is debated in the morning, images are produced during afternoon and results are then projected in the evening.
- C) It was no longer necessary to have 5000 people holding a banner on Copacabana Beach to spread a message. The internet changed everything.
- D) Fernando compares the legislation for projection in Brazilian cities.
- E) “Light is how I describe what I do.”

#### 3.2.2.2. Rafael Cançado (Homem Gaiola) - VJ and artist

- A) His political art is linked to African matrix religious movements and has nature as its main place of projection.
- B) Activist lighting can be powerful as it awakens one’s curiosity.
- C) Rafael held a projection workshop at an NGO in Belo Horizonte, teaching people to use projection as activism.
- D) Although projectors are now more affordable, there is a large portion of the Brazilian population that cannot afford them.
- E) He believes there is plenty to be developed when it comes to video mapping in Brazil. Blending of mapping with lasers is a trend. The use of different tools empowers narrative. From using different tools to mixing different realities: virtual and real.

#### 3.2.2.3. Rodrigo Araujo (Bijari Studio) - architect and artist

- A) Political art is now better accepted in society. As everything is being recorded, one can no longer make mistakes as in the past.
- B) Bijari’s work is part of a collective action in Brazil. In 2020, they joined Projemos Collective and Activist Design.
- C) They are successful in creating its own graphic language and aesthetics, which today is easily identifiable in Brazil.
- D) “Illuminate something that no one is seeing”.
- E) They intend to start using laser as a device.
- F) Rodrigo believes that the possibilities of exploring mapping are not yet finished. There is still a lot to communicate in Brazil and to develop in terms of content.
- G) Political projections must be communicated immediately.
- H) New Mappin XR (Extended reality) technology is a term referring to all real-and-virtual combined environments, which is a new trend.

#### 3.2.2.4. Paulo Fluxus - VJ and artist

- A) Fluxus participated in two acts in which he used light as sabotage.
- B) He has worked with contemporary and indigenous artists and wants to be able to use high technologies to serve ancestral cultures.
- C) Light tools are still expensive devices, with technologies that are limited to reach a larger audience. It is necessary that more people use these tools.
- D) The projections became the language of the pandemic and the potential of lasers was recently discovered in Brazil. This revolution in ways of protesting is a new reality, with no going back.

#### 3.2.2.5. Alexis Anastasiou - VJ and artist

- A) The underground movement is a political scene. The political art movement of the early 2000s started from these meeting places.
- B) Activist projections are most of the times improvised. Many times there is no refined aesthetic concern, since the urgency of the action does not allow it.
- C) In the pandemic the image became a response to the pain and it represented what was happening.
- D) Since in São Paulo city there is the Clean City Law regulation, the focus was once again not to publicize who was doing the projections, but to create an activist movement.
- E) Drones are being explored recently and have faced some challenges.
- F) He does not believe in the popularization of drones like projectors, because the cost is too high and the system is too complex. He is manufacturing drones in Brazil.

#### 3.2.2.6. Roberta Carvalho - VJ and artist

- A) She believes that the human being connects with light in a very ontological way.
- B) Video mapping is connected with the illusionism of the 17th and 18th centuries. The VJs are the new illusionists of the 21st century.
- C) Light has a power when connected to the city and when connected to protests.
- D) The possibility of amplifying a message in the city and the fact that it is something ephemeral is also relevant.
- E) Light allows us to connect with our imaginary. Projection has a oneiric relationship.
- F) Activism is directly linked to social networks today.
- G) Now we have augmented and virtual realities mixed together.
- H) About the possibilities of exploring mapping in Brazil, Roberta believes that the possibilities are hardly exhausted. Mapping in the first instance was very much linked to architecture and now it tries to explore other surfaces, such as nature (water, trees), for example.

### 3.2.3 - DIGITAL MEDIA COMMUNICATION EXPERTS

#### 3.2.3.1. Marília Pasculli - Digital Art Curator

- A) A financial, environmental and political crisis combined with the pandemic of 2020 brought political activism in Brazil to another dimension.
- B) A massive political activism movement took place, where up to 200 people were simultaneously projecting from their windows. It generated an aesthetic and communication language in Brazil.
- C) Light is an excellent communication tool specially in cities with high population density. It can communicate over long distances, whether by drones, projectors or lasers.
- D) Brazil is still protesting for reasons of survival.
- E) In 2022 political campaigns adhere to this language in order to promote themselves.
- F) Marília believes that video mapping aesthetically as it exists today is very similar to what it was 20 years ago. The possibilities of reach today are greater, due to the power of the projectors and the cost has become cheaper.
- G) The laser seems to have taken a bigger proportion in the last few years, as it has a higher brightness than video projectors.
- H) Marília believes that we are at the end of an era with video mapping and new forms of immersion between the real and the virtual are beginning. Mapping will not be replaced, but incorporated into virtual realities, without physical space, such as the metaverse experience.
- I) The world is demanding sustainable solutions, and the amount of light in the cities needs to be dosed. Nature produces bioluminescence and she believes that solutions in this direction can be used to illuminate urban centers.
- J) Marília believes that demonstrations with light generate a commotion and help defend democracy.

#### 3.2.3.2. Luciana Moherdavi - Post-doc in media facade at FAUUSP

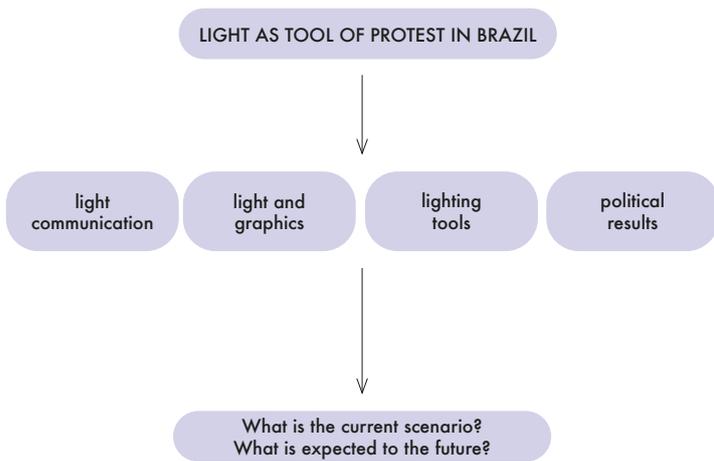
- A) She defends the establishment of a federal law for projections. Brazilian cities have different regulations or do not have any.
- B) There is a lack of state efforts to deal with projections and to look at them with the magnitude that they have nowadays. Luciana defends the creation of a digital culture law.
- C) The movement that happened in Brazil was very meaningful due to the political conditions that Brazilians are going through.
- D) Luciana says that the projection collectives in São Paulo do not respect the City Clean Law, which is an outdated law and does not include contemporary urban situations such as projections as they are done today.
- E) We discussed the recent fact that happened at the Russian embassy in Washington, where the Russians tried to erase a projection of Ukrainian flag with another beam of light.

# 4. DISCUSSION

## 4.1 INTRODUCTION

After conducting eleven interviews, it is concluded that Brazil has a particularity regarding how lights have become a massive movement, especially after the beginning of the Covid-19 pandemic in the year 2020. The mismanagement of the federal government in controlling and informing preventive measures of the pandemic, has caused widespread dissatisfaction among the population. Light has become not only a tool of protest, but also a tool of information.

In order to answer the main question of the research, four categories were created: light communication; light and graphics; lighting tools and political results.



## 4.2 LIGHT COMMUNICATION

### 4.2.1 - Lighting Collectives

During the 2013 political crisis, the *Projeção* collective emerged in Rio de Janeiro as a way to unite activists around the political crisis of that moment. In 2020, in the midst of another political and health crisis, the collective *Projetemos* emerged in São Paulo, founded by Felipe Spencer, Mozart Santos and Bruna Rosa. Both collectives are active nationally in most parts of the national territory, although they have the cities of São Paulo and Rio de Janeiro as their reference. The 2020 phenomenon is notably stronger than the one occurred in 2013. Since social isolation and quarantine limited street demonstrations, the combination of internet and technology created a massive movement of projections. *Projetemos* collective has taken on significant proportions in Brazil. “There are approximately 200 projectionists scattered throughout Brazil today. It is a movement that has

come to stay – not only because of the political dimension it has reached, but because of its complete reconfiguration of Brazilian culture: people watch television programs, movies, and live coverage of fashion shows and political news; participate in political actions taking place simultaneously in several countries; and receive health information through these projections. The work of these various collectives has consolidated the democratic occupation of the urban landscape as a daily practice and forced a debate on outdated legislation in relation to this new contemporary context and in defense of freedom of expression.”[23]

*Projetemos* has not restricted itself to lighting façades and has expanded into museums exhibitions, including the Museum of Contemporary Art of São Paulo (MAC) and Museum of the Portuguese Language (MLP). In 2022 they will attend Timisoara Architecture Biennial, in Romania. Their network is constantly growing.

While doing the interviews, I could notice an intense collaborative network between artists and community. At the outbreak of the pandemic, many first-time operators borrowed projectors and started projecting political messages in their cities for the first time. Another notable aspect is that some enthusiastic VJs hold workshops in low-income communities to teach people how to use projectors in order to spread knowledge about new technologies. Although projectors are today a more affordable tool when compared to ten years ago, it remains an inaccessible tool for a large part of the Brazilian population.



Figure 19. Projectors built with pvc pipe, magnifying glass and flashlight at MAC-USP, São Paulo 2022

*Projetemos* collective held a workshop at the MAC-USP in 2022 during three months, teaching people how to build projectors with pvc pipe, magnifying glass and flashlight [figure 30]. Besides the live workshop, they held a free two-day workshop for almost 400 people each day with the same goal. One can notice a strong democratic character of the projection movement in Brazil. There is a concern of the knowledge holders to stimulate others of the use of light

tool. Projection collectives in Brazil have strengthened and are expected to take on even bigger proportions. The collaborative networks between visual artists and activists with lighting tools of projection are also increasing.

### 4.2.2 - The power of light

“Light is how I describe what I do.”

“The collective objective is to *throw light* on the urgencies of society and strengthen movements of struggle.”

“We are illuminating walls to illuminate people. Light serves to carry a message. We work with light and with the lack of light.”

“Activist lighting can be powerful as it awakens one’s curiosity.”

“Illuminate something that no one is seeing”.

“Human being connects with light in a very ontological way.”

“Video mapping is connected with the illusionism of the 17th and 18th centuries. The VJs are the new illusionists of the 21st century.”

“Light allows us to connect with our imaginary. Projection has a oneiric relationship.”

“Light is an excellent communication tool specially in cities with high population density. It can communicate over long distances, whether by drones, projectors or lasers.”

During the interviews I could notice analogies being made between light and information. Light carries a positive meaning and in the midst of dark times and calls attention to a cause in an emotional way. Lighting projections trigger people’s imagination, whether through colors, graphics or by changing the architecture scale. The use of light as a tool for political protest enables the inhabitants of a city to reflect upon future possibilities.

Social media and protest lighting perform a near dependent link. Projections’ ephemerality limits the audience’s access to the message. Through photos and videos posted on social media, the images are eternalized in another dimension. Rodrigo Araujo, from Studio Bijari, related the power that projections exert on graphic art.

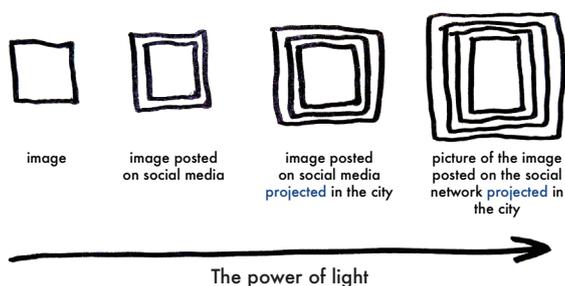


Figure 31. The power of a image when projected in the city

As an image literally increases through projection, its power of dissemination also increases, even if this projection is seen through a photograph [figure 31].

Even with the resumption of physical demonstrations, it is expected that the projections will be incorporated within traditional protest movements.

## 4.3 LIGHT AND GRAPHICS

### 4.3.1 - Projection style due to limitations

As each person had a different projector with different amounts of lumens, an aesthetic was created due to the technical limitation. Bold letters and large fonts were applied to the projections. Contrast images between black background and white letter was strategically used to overcome the technical limitations of each light equipment. Graphical designs displayed in video projections can be made in a simple and impersonal way, or they can also have a purposeful identity content, as is the case with Bijari. They present an in-depth research of typography, graphics, colors, and design [figure22].



Figure 22. Bijari Studio created their own graphic language and

The laser, different from the video projector, emits signals and the images appear by path. For this reason, aesthetics and graphics carry simple and direct forms.

### 4.3.2 - Brazilian identity

The psychedelic aesthetic of video mapping was imported from Europe to Brazil. Brazilian art has a great potential to create new video mapping identities with graphics that are not imposed. Video mapping aesthetics can be improved. Since projections are technology oriented, some artists feel discouraged to try. It is necessary to stimulate national artists to try mixing graphic arts with technology, not only in the field of political projection.

## 4.4 LIGHT TOOLS

### 4.4.1 - Softwares

Projection tools, either video or laser, have gained popularity due to the fact that more financially accessible products have joined the market. However, projection softwares still have cost limitations, since most of them are imported and have high prices in Brazil. Surveys have been conducted in Brazil to find software and hardware solutions to not rely on foreign systems. In this way, they may become more financially accessible, ensuring a more democratized use of the tool.

In order to make it easier for people to experiment projection, Projetemos Collective created a software that can be accessed online through their website. The device enable people to create an image and connect it from computer to a projector. It is also possible to change codes, add motion effects, specials fonts and colors. The software was created for lives. Projetemos aims to create free projection tools and for this purpose they are in contact with programmers.

### 4.4.2 - Lasers

Laser projection is a powerful tool due to its intensity and brightness. It is effective in drawing attention to a cause, whether projecting phrases or just its own beam of light. Laser intensity and colors are powerful in raising awareness for a political cause, without the need for complex mapping, shapes and graphic design. They can be used both for political projections with clear messages and for protests with abstract political messages, as the beam of light projected by Fernando Velazquez and Lucas Bambozzi in the work “Entropia Mineral / Opereta”.

Laser beam direction has to be analyzed carefully when applied in public spaces to avoid hitting the interior of residences and other internal spaces. People who operate tools have a shared responsibility. Lasers, if misused, can cause damage to human eyes. It is necessary to be aware of the risks, to avoid criminalizing the tool.

Laser projections are ephemeral and quick, and do not represent significant urban nighttime pollution. The same applies for mapping projections.

It is a light tool that is becoming popular in Brazilian political protests in recent years. Several interviewees expressed interest in exploring it. Other alternative would be to blend video and laser projections.

### 4.4.3 - Video projectors

One of the questions on the survey was the extent to which video mapping can still be explored. Before I started the research, I often believed that video mapping solutions had been used the same way for many years. After conversations with professionals in the area, I have discovered that there is a potential for aesthetics to evolve as well as the technology

is constantly changing. Video mapping will hardly fall into disuse at the moment. New Mappin XR (Extended reality) technology is a term referring to all real-and-virtual combined environments.

### 4.4.4 - Drones

Drones are still being explored by few professionals in Brazil. Only few VJs have access to this tool due to its cost. The drone projector has the great advantage of being able to fly and illuminate surfaces that previously were not accessible. From a technical point of view, it still needs to be better engineered in terms of battery, power, and resistance to natural conditions such as rain and sun.

VJ Alexis is a researcher of drones in Brazil. He has been conducting numerous experiments with Visualfarm, his company. In May 2022, he flew a projector drone for the first time for a political demonstration. Drones can be one more tool for protest, however, he does not believe in its popularization due to flight restrictions and product cost.

## 4.5 POLITICAL RESULTS

### 4.5.1 - Legislation

São Paulo runs under the Clean City Law since 2007. This law was passed to regulate and prohibit any advertising in the public space – including ideological propaganda [3]. In 2022, at the same state, some political parties started using projections to release their political campaigns. The Superior Electoral Court (TSE) of Brazil has no regulations regarding projections. In addition, Clean City Law is outdated. To make a projection in the city today, it is necessary to request permission from both public (city hall) and private (the establishment that will receive the projection) departments.

The vast majority of projection collectives in São Paulo do not respect this law. Luciana Moherdauí defends the establishment of a federal law for projections, as Brazilians cities have different regulations. There is a lack of effort on the part of the state to deal with the projections and to look at them with the magnitude that they have nowadays. Luciana defends a digital culture law.

By creating a law, activists can have more freedom and also protect themselves from unusual situations. Recently, a projection of the Ukrainian flag at the Russian embassy in Washington was “erased” by another beam of light. With the increase of projections in Brazil and worldwide, may this become a trend?

# 5. REFERENCES

[1] the Guardian. (2022). The Guardian view on Bolsonaro's Covid strategy: murderous folly | Editorial. [online] Available at: <<https://www.theguardian.com/commentisfree/2021/oct/27/the-guardian-view-on-bolsonaros-covid-strategy-murderous-folly>> [Accessed 7 May 2022].

[2] Nytimes.com. (2022). Under Brazil's Far-Right Leader, Amazon Protections Slashed and Forests Fall (Published 2019). [online] Available at: <<https://www.nytimes.com/2019/07/28/world/americas/brazil-deforestation-amazon-bolsonaro.html>> [Accessed 7 May 2022].

[3] Pasculli, M.,(2021). When the walls get voices. Volume, (59), p.<<https://archis.org/publications/volume-59-futures-implied/>.

[4] Beiguelman, G., (2021). Políticas Da Imagem. São Paulo: Ubu Editora

[5] Buchanan, A. (2021). 'Projection art and projection activism'. Architecture\_MPS 20, 1:1. DOI:<<https://doi.org/10.14324/111.444.amps.2021v20i1.001>.

[6] Hook, Jonathan & Green, David & Mccarthy, J. & Taylor, Stuart & Wright, Peter & Olivier, Patrick. (2011). A VJ centered exploration of expressive interaction. Conference on Human Factors in Computing Systems - Proceedings. 1265-1274. 10.1145/1978942.1979130.

[7] Schacter, R. (2014). The ugly truth: Street Art, Graffiti and the Creative City. Art & the Public Sphere. 3. 161-176. 10.1386/aps.3.2.161\_1.

[8] Stuble, P., (2019). Protesters use lasers to tackle heavily armed police and bring down drone in Chile. [online] Independent. Available at: <<https://www.independent.co.uk/news/world/americas/chile-protest-lasers-drone-riot-police-santiago-a9205591.html>> [Accessed 8 May 2022].

[9] Lourenço, I., (2013). Luz é desligada na fachada do Congresso por causa de protesto. [online] EBC. Available at: <<https://memoria.ebc.com.br/noticias/brasil/2013/06/luz-e-desligada-na-fachada-do-congresso-por-causa-de-protesto>> [Accessed 8 May 2022]

[10] Ribas, T., (2019). Relações Invisíveis: Luz, Arte e Política no Espaço Público. Master of Art & Design for the Public Space. Universidade do Porto.

[11] Alfredojaar.net. (1988). Lights in the City – Alfredo Jaar. [online] Available at: <<https://alfredojaar.net/projects/1999/lights-in-the-city/>> [Accessed 8 May 2022].

[12] Tomlinson, S., (2015). World's first HOLOGRAM protest: Thousands join virtual march in Spain. [online] Mail Online. Available at: <<https://www.dailymail.co.uk/news/article-3038317/The-world-s-HOLOGRAM-protest-Thousands-join-virtual-march-Spain-against-law-banning-demonstrations-outside-government-buildings.html>> [Accessed 8 May 2022].

[13] Anastasiou, A. (2017). Mappingfesto — Projection mapping manifesto. São Paulo: Visualfarm.

[14] Monke, S., 2007. The expert interview as a method of qualitative social research. [Term Paper] Health - Nursing Science - Miscellaneous.

[15] Kolovea Varnava, A., (2017). Light as a medium to enhance communication in urban spaces. Master of Science in Architectural Lighting Design. KTH Royal Institute of Technology.

[16] Starman, A.B. (2013). The case study as a type of qualitative research. Journal of contemporary educational studies 1/2013, pp. 28–43. Retrieved from <[https://www.researchgate.net/publication/265682891\\_The\\_case\\_study\\_as\\_a\\_type\\_of\\_qualitative\\_research](https://www.researchgate.net/publication/265682891_The_case_study_as_a_type_of_qualitative_research). [Accessed 10 May 2022].

[17] Extract from interview with VJ Fluxus, May 2022.

[18] Extract from interview with VJ Alexis, May 2022.

[19] Sdgs.un.org. (2022) Goal 10 | Department of Economic and Social Affairs. [online] Available at: <<https://sdgs.un.org/goals/goal10>> [Accessed 28 May 2022].

[20] Sdgs.un.org. (2022) Goal 16 | Department of Economic and Social Affairs. [online] Available at: <<https://sdgs.un.org/goals/goal16>> [Accessed 28 May 2022].

[21] Lamnek, S. (2005): Qualitative Sozialforschung. Lehrbuch (4. Auflage). Weinheim: Beltz.

[22] Monke, S. (2007), The expert interview as a method of qualitative social research, Munich, GRIN Verlag, <<https://www.grin.com/document/1158768>

[23] MOHERDAUI, L., 2022. #PROTESTEMOS (Luciana Moherdau). [online] Textezurkunst.de. Available at: <<https://www.textezurkunst.de/124/protestemos/>> [Accessed 30 May 2022].

## List of figures:

Figure 1: Projections in São Paulo, Brazil, during Covid-19 pandemic. Photo by Bia Ferrer

Figure 2: Protesters in Brasilia stand on the top floor of National Congress during June 2013 protests. Photo by Mídia NINJA

Figure 3: Artist Alfredo Jaar used red light to fill a cathedral's cupola in Montreal in 1998. Photo by Alfredo Jaar

Figure 4: The world's first hologram protest took the streets of Madrid in 2015. Photo by AFP/Getty Images

Figure 5: A Logo for America, 1987/2014, by Alfredo Jaar. Photo by Solomon R Guggenheim

Figure 6: Detailed diagram of the research methodology made by the author

Figure 7: Diagram of how the methodology aims to achieve relevant results made by the author

Figure 8: Projection in São Paulo, Brazil. May 2021. Photo by VJ Fluxus

Figure 9: Jail Bolsonaro projected in Lviv, Ukraine. September 2021. Photo by VJ Fluxus

Figure 10: Laser projection “Look behind the mountains”. Belo Horizonte, Brazil, 2021. Photo by Lucas Bambozzi and Fernando Velazquez

Figure 11: Laser beam from Museum of Mines and Metals towards Serra do Curral. Belo Horizonte, Brazil, 2021. Photo by Lucas Bambozzi and Fernando Velazquez

Figure 12: Graphic poster projected on the city. São Paulo, Brazil, 2021. Photo by Bijari Studio

Figure 13: Video Mapping “Not him”. São Paulo, Brazil, 2018. Photo by Bijari Studio

Figure 14: Drones flying in São Paulo, Brazil, 2021. Photo by Alexis Anastasiou.

Figure 15: New tool of protest being explored by Alexis Anastasiou. São Paulo, Brazil, 2021. Photo by Alexis Anastasiou

Figure 16: Eduardo Paes (Mayor) and Sergio Cabral (state governor) pointing a gun at the head of the Christ statue. June 2013, Rio de Janeiro, Brazil. Photo by Ana Carolina Fernandes

Figure 17: Climate change protest in 2014 at Christ Statue in Rio de Janeiro, Brazil. Photo by Projetação Collective

Figure 18. Free projection software created by the Projecemos collective. Photo: screenshot from Projecemos website (<https://www.projecemos.org>)

Figure 19. Through a workshop, they taught people how to build projectors with flashlights and stencils. Photo by Mozart Santos

Figure 20: Cerrado Mapping Festival by Dark Light Studio. Photo by Rafael Cançado

Figure 21: Laser projectors display ready-made protest graphics in their presets. Screenshot by Rafael Cançado

Figure 22: Bijari created their own graphic language and aesthetics. Photo by Bijari Studio

Figure 23: Rubens Mano’s light work “Detetor de Ausências” (absence detector) at Anhangabaú Valley, São Paulo, 1994. Photo by Rubens Mano

Figure 24. Laser projections by LabLUXZ\_ of drawings by Denilson Baniwa. São Paulo, Brazil, 2018. Photo by Rafael Avancini

Figure 25. Laser projections by LabLUXZ\_ of drawings by Denilson Baniwa. São Paulo, Brazil, 2018. Photo by Rafael Avancini

Figure 26. Mappingfesto is a book by Alexis Anastasiou that gathers his work with projections. Screenshot by the Author.

Figure 27. Projection by Alexis that went viral at the beginning of the pandemic in Brazil. Photo by Carlos Pupo

Figure 28. “Symbiosis” work. Indigenous people projected onto the Amazon rainforest. Since 2007 is being projected. Photo by Roberta Carvalho

Figure 29. Indigenous artist Denilson Baniwa projected “Brasil Terra Indígena”(Brazil Indigenous Land) on the Bandeirantes Monument. São Paulo, 2020. Photo by Toni Baptiste (Coletivo Coletores)

Figure 30. How to build projectors with pvc pipe, magnifying glass and flashlight. Photo by Mozart Santos

Figure 31. The power of a image when projected in the city. Diagram made by the author

## Instagram Accounts:

@fluxuz\_  
@ f\_\_velazquez\_  
@lucas\_bambozzi  
@\_bijari  
@rodrigo\_araujox  
@robertacarvalho00  
@vj.alexis  
@ vjmozart  
@ projecemos  
@ fernandotonellivaz  
@ homemgaiola  
@ lumoherdau  
@ mariliapasculli

# 6. APPENDIX

Appendix presents the research results in full format, with all information extracted from interviews.

## 6.1 LASER AS TOOL OF PROTEST - 01

Artist: VJ Fluxus, based in São Paulo, Brazil

Paulo Favero, also known as Fluxus is an artist and activist who has been exploring urban intervention techniques both outdoors and indoors. Lasers have been his main research subject for many years. He has an extensive network of collaboration in the Brazilian political activist community.

Work: “Fora Coronaro” / “Jail Bolsonaro”

### 1) POLITICAL CONTEXT

This laser projection series focuses on the protest against the government of President Jair Bolsonaro. Fluxus projected messages in São Paulo and also in some cities in Germany, Ukraine [figure 9] and Greece. The projections written “Jail Bolsonaro” intended to amplify the political degradation of the president nationally and abroad.

### 2) AESTHETIC - DESIGN LANGUAGE

Apart from projections, Fluxus has a longstanding activism work using fuschia as a symbol. His projections also use the color pink, as well as green and blue. His projections, both in Brazil and abroad, are made in a quick and improvised way. Taking this into consideration, the aesthetics and graphics carry simple and direct forms. The laser mapping takes the shape and proportion of the buildings, [figure 8] but without complexity. The messages are urgent and are not displayed in the public space for a long time.

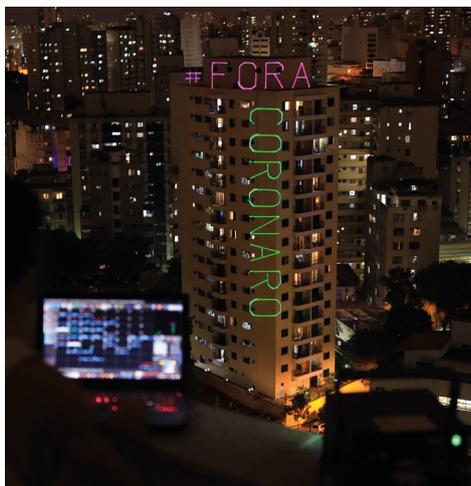


Figure 8. Projection in São Paulo, Brazil. May 2021.

## 3) TECHNICAL ASPECTS

All the interventions of Jail Bolsonaro’s work were made by the artist with the same equipment, a Swiss projector with 10W power, 4kg, computer, tripod and extension cable.

The laser, different from the video projector, emits signals and the images appear by path. The urgent aspect of protests demands quickness and simplicity. In many cases the projections stays on for less than 10 minutes and only become popular through the dissemination of images through social media.

Laser projection requires a specific distance between the projector and the surface that will receive the light. At the same time, this distance also has strategic implications in risky situations, since local legislation may not approve of the intervention. For example, in the projection of the Brazilian



Figure 9. Jail Bolsonaro projected in Lviv, Ukraine. September 2021.

embassy in Berlin, Fluxus used a lens capable of emitting light with definition under long distances. He was 600 meters away from the embassy, making it difficult for possible authorities to identify where the projection was coming from. The laser has visible beams of light that can be seen at long distances and in environments with less light control. But as any beam of light, as it reaches long distances, the angle becomes narrower and less intense. To solve this technical problem, different lenses can be used and adapted to each situation. Since 2016 the VJ uses the same software, which is stable and intuitive to make slide performance. According to him, new

surveys have been conducted in Brazil to find software and hardware solutions to not rely on foreign systems. In this way, they may become more financially accessible, ensuring a more democratized use of the tool.

#### 4) COMMUNICATION AFTERWARDS - RESULTS

The artist is part of a communication network between activists in Brazil and internationally, allowing the message to be spread by other projection collectives than Brazilians. Furthermore, according to Fluxus, Brazil still lives in a colonized logic, and from the moment one sees a projection against the president in another country, this immediately arouses more interest in sharing the image and in the image itself.

### 6.2 LASER AS TOOL OF PROTEST - 02

Artists: MOOLLA Collective

Fernando Velazquez, based in São Paulo, Brazil

Lucas Bambozzi, based in São Paulo, Brazil

Fernando Velázquez is an artist, curator and professor. He investigates technical devices with particular interest in the structures, dynamics and narratives that give rise to prevailing paradigms, in emerging and generative creative processes, and in transdisciplinary methodologies. Lucas Bambozzi is a multimedia artist. His works are constituted by pieces dealing with media in a wide variety of formats, such as installations, single channel videos, short films and interactive projects. Together, they formed MOOLLA Collective.

Work: “Entropia Mineral / Opereta”

#### 1) POLITICAL CONTEXT

This work intended to denounce a historical environmental problem in Minas Gerais state. Since its discovery by the Portuguese, the state has represented the main mineral extraction pole. Some mining companies that currently operate in Minas Gerais are involved in environmental violations due to irregular extraction in preserved areas, as is the case of the Serra do Curral. After many years of intense exploitation, little is left of the mountains of it. Until the end of 2021, a law barred mining companies from continuing to exploit the region, but in a coup by local political authorities in January 2022, it was decided to restart mining activities. The work was done months before the coup, as the theme has always been in the Brazilian activist cause.



Figure 10. Laser projection “Look behind the mountains”. Belo Horizonte, Brazil, 2021.

#### 2) AESTHETIC - DESIGN LANGUAGE

The work was done during an artistic residence of Moolla Collective at the Museum of Mines and Metals. It was decided to use a Laser Beam from the Museum to Serra do Curral. The blue color was chosen for its visibility at night [figure 11]. The artists performed the act in an improvised way, and the aesthetics was not thought in a formalistic way, since the beam of light played the main role of the work. The beam that began from the museum pointed to the mountain threatened by disappearance. The light directed the gaze towards where one wanted to draw attention. In addition



Figure 11. Laser beam from Museum of Mines and Metals towards Serra do Curral. Belo Horizonte, Brazil, 2021.

to the beam projection, the artists projected with the same Laser Beam a phrase on a building in Belo Horizonte. Also in a simple way when it comes to graphics and mapping, the following sentence was projected: “look behind the mountains” [figure 10].

#### 3) TECHNICAL ASPECTS

Fernando and Lucas are visual artists whose researches are related to both fine arts and video art. They were both

already working with video-mapping projections, however, the Laser Beam was acquired specially for this work, as a way to explore a new tool. The laser used in the project had 6W of power and weighed about 20Kg. Faced with heavy equipment, the practicality of transportation becomes limited.

#### 4) COMMUNICATION AFTERWARDS - RESULTS

The art installation was visible for ten minutes in Belo Horizonte. During this time, some people in the central area were able to observe the beam of light that crossed the city. Even though the work had an abstract political message, the power of the message was strong. Unfortunately, months after this work was done, local political authorities decided to revoke the law that protected Serra do Curral, allowing its mineral re-exploitation. After this political coup, the images posted previously on the artists' social media, regained visibility on a large scale.

### 6.3 VIDEO MAPPING AS TOOL OF PROTEST - 01

Artist: Rodrigo Araujo from Bijari Studio, based São Paulo, Brazil

Rodrigo Araujo is an architect and artist. He is one of the co-founders of Bijari Studio, where he is the art director. Bijari is a creative studio that develops projects in the convergence between art, design, and technology.

Work: "Vocabulário Combativo" (Combative Vocabulary)



Figure 13. Video Mapping "Not him". São Paulo, Brazil, 2018.

#### 1) POLITICAL CONTEXT

Studio Bijari has an activist background on the Brazilian scene producing graphic artworks with political messages.



Figure 12. Graphic poster projected on the city. São Paulo, Brazil, 2021.

Combative Vocabulary is present in Brazilian demonstrations since the 2013 period. Figures 12 and 13 shows political protests directly linked to the government of President Jair Bolsonaro, however Bijari's work also includes political protests against climate change, indigenous rights and other causes related to minorities in the country.

#### 2) AESTHETIC - DESIGN LANGUAGE

Combative Vocabulary presents an in-depth research of typography, graphics, colors, and design. The aesthetics found by Studio Bijari presents an important feature, as it created the Studio's own identity. All the graphic works performed presented the colors pink, white, red and black, which are appropriate colors to be projected at night. Both fonts and graphism of images were presented in the same style. Projections were flat on the building walls, most of the times with no motion, nor complex mapping. They were designed as posters with direct political messages.

#### 3) TECHNICAL ASPECTS

Many collectives were created in Brazil during the pandemic, and one of them is Design Ativista (Activist Design), where

designers sent their graphic pieces for people to publish online and also to be projected on city walls. Bijari Studio, with a consolidated graphic language and popular in Brazilian social networks, produced graphic pieces and published them in projection collectives as Projecemos Collective. Sometimes they had projected images themselves, and other times people from all over Brazil projected Bijari's images in their cities.

#### 4) COMMUNICATION AFTERWARDS - RESULTS

As Studio Bijari's graphics were quite unique and identifiable by people connected to graphic arts and communication, a movement of prosthetic identity was created. The colors and graphics have a unique identity, making it easy for people to identify the author, creating a network of collaboration between the images they produced and the online dissemination on social networks. The images in poster format acquired a powerful reach when they were projected onto the city and had their scale increased.

### 6.4 VIDEO MAPPING AS TOOL OF PROTEST - 02

Artist: Roberta Carvalho based in Pará, Brazil

Visual artist, multimedia and artistic director. She develops projects with video, urban intervention, video projection, mixed realities, installation, audiovisual and interactive projects.

Work: "Symbiosis" / "Queimadas"

#### 1) POLITICAL CONTEXT

Roberta's work seeks to debate social and cultural subjects of Brazil. She comes from the northern part of country, a region which is constantly struggling for representativity. Her work is strongly connected to environmental and technology research. "Symbiosis" started in 2007 and makes a link between two or more entities in balance, a relationship without harm - forest, riverbanks and people who inhabit this context. "Queimadas", occurred during the peak of forest fires in Brazil, in 2020 year, and was performed at the Ibirapuera Park [figure 14]. It was an action promoted by Natura brand. Both works represent a confrontation regarding the use of nature, while one represents harmony, the other represents destruction.



Figure 13. "Symbiosis" work. Indigenous people projected onto the Amazon rainforest. Since 2007 is being projected.

#### 2) AESTHETIC - DESIGN LANGUAGE

In "Symbiosis", Roberta invited riverine populations from Amazonia to have their faces projected on trees. She seeks to explore uncommon projection surfaces as elements of nature



Figure 14. Projection at Ibirapuera Park in order to raise awareness about the destruction of Amazon and Pantanal regions. São Paulo, Brazil, 2020.

[figure 13]. This way, the image becomes three-dimensional, even with 2D projection. The colors of Symbiosis projection were not altered. Green is the same color as the foliage. When “Queimadas” was projected, the sky of São Paulo was reddish from urban pollution, giving a more realistic impression to the burning effect.

### 3) TECHNICAL ASPECTS

Both works are a mapping installation, requiring certain distance between the projector and the surface to be projected. They were planned before execution. Nevertheless, they are experimental works, since a tree surface do not guarantee an exact result as imagined. There are certain limitations in this technique, since if one is not on the same point of view as the projector, is not possible to see the result. Therefore, the image is built by displacement, when people move close to the projector’s point of view. “Queimadas” was made with six powerful projectors. It was necessary to have City Hall’s approval to be performed due to inspection.

### 4) COMMUNICATION AFTERWARDS - RESULTS

“Queimadas” was an impactful work in terms of repercussion. It was made in 2020, during the pandemic in Brazil. Its objective was to be disseminated in the press and social networks, which happened quite strongly. The work “Symbiosis” was made for the local population to appreciate the work in person, since the projected faces were of the riverside population. Later, the work would also be published in social media. Besides being appreciated at the moment of action, its purpose is to be a work in photography and video.

## 6.5 DRONES AS TOOL OF PROTEST

Artist: VJ Alexis based in São Paulo, Brazil

Alexis Anastasiou is one of the pioneer VJs in Brazil to explore video mapping on an urban scale. In 2004 he founded Visualfarm. The company creates technology-intensive spaces on the border between art, entertainment, and design.

Work: Marijuana March

### 1) POLITICAL CONTEXT

The marijuana march is an annual event that takes place in several countries in order to support the legalization of cannabis.

### 2) AESTHETIC - DESIGN LANGUAGE

Alexis is one of the precursors VJs in Brazil to delve into the use of the drone as a tool for protest [figure 15]. Even at an early stage of research and testing, the graphic design chosen for the action is simple, direct, and communicative. As the projector is flying, the action aimed to find suitable walls so that the images could fit in, in order to obtain proportion between the architecture and the image.



Figure 15. New tool of protest being explored by Alexis Anastasiou. São Paulo, Brazil, 2021.

### 3) TECHNICAL ASPECTS

A drone is a platform on which a projector with its own battery is attached and has a LED ring around it. It carries the advantage of being able to access places that a floor projector cannot. Nevertheless, it still carries an ANSI lumens limitation. The projector has 3000 ANSI lumens, while a projector that Alexis would normally use has a range of between 12000 and 20000 ANSI lumens. Battery life is about ten minutes, which limits how long the equipment can operate.

### 4) COMMUNICATION AFTERWARDS - RESULTS

The drone can be considered as a character, as it is an interesting tool to create stories. It is a fully independent platform capable of flying and accessing previously inaccessible places. From the perspective of light power, it is still under development and has great potential.

## 6.6 PROJECTION COLLECTIVES

### 6.6.1. - O. F.

Jornalist and political activist

Rio de Janeiro, Brazil

#### PROJETAÇÃO COLLECTIVE

O. F. is journalist and has always worked with corporate communication. The first time he projected during a demonstration was in June 2013, during the wave of protests that took over Brazil. Approximately 1 million people were marching on Presidente Vargas Avenue in Rio de Janeiro when he participated in a political projection for the first time. Using the professors' moving stage, O., together with other manifestants, projected a political message on an avenue building. Twenty days later an impactful image was projected on the façade of the Guanabara Palace. The image was a collage of then governor Sergio Cabral and the major and the then mayor Eduardo Paes pointing a gun at the head of the Christ statue. At that moment, Projetação Collective began, being composed of activists, journalists, artists, VJs, professors and diverse groups of people connected to politics.

Seeing the destruction of Brazilian institutions in recent political history, he believes that the role of the collective is to make sure that people don't lose hope.



Figure 16. Eduardo Paes (Mayor) and Sergio Cabral (state governor) pointing a gun at the head of the Christ statue. June 2013, Rio de Janeiro, Brazil

The goal is to “throw light” on the urgencies of society and strengthen movements of struggle. Projetação Collective's motto is “Light, action, and awareness.” The collective's strongest period of action was from June 2013 until the 2016 Olympic Games in Rio de Janeiro. Currently, at least

once a week, action agendas are organized. The projections currently take place once a month.

For O., the function of light as a political manifestation is essential to amplify voices. Images occupy territories and alter scales, and at the same time make people reflect on a cause. In addition, according to him, they are non-violent manifestations. When you project in a public space, many people can see that action at that moment until the projector is turned on. There is a meaning behind where you project and on what surface the image will be projected. In a second moment, when the image of the projection is released online, it goes into the field of infinity. He sees a relationship of dependency between social media and projections, since the image disseminated online takes on a much greater proportion than the image projected live.



Figure 17. Climate change protest in 2014 at Christ Statue in Rio de Janeiro, Brazil.

When I ask about his future plans for the collective, O. told me that a great effort is being made to reactivate the collective, especially because 2022 is an election year for the republican presidency. Even with many activist actions, O. complains about the lack of results and answers from politics with the population. Projetação Collective's communication network is wide, as they have contact with other action collectives in Brazil, as well in other countries such as Germany, United States and France. When I asked how he evaluates the use of video mapping in Brazil, O. believes that we are still very embryonic. There is much to be evolved in terms of technique and equipment. The democratization of this protest tool has a lot to evolve.

## 6.6.2 - Rafael Rasone

Cultural producer, artists and political activist

Belo Horizonte, Brazil

### PROJETEMOS COLLECTIVE

Rafael was born in Belo Horizonte and works with cultural production, music and arts since he was 18 years old. Video art work has always been part of his interest. He started working as an activist in Brazil doing graffiti since 1991, when he was eleven years old. For him, graffiti is as ephemeral as the projection, once the wall will be painted later, and the projector will turn off the light at some point. Graffiti is political as the projection. According to Rafael, art in Brazil needs to be political for obvious reasons, especially in recent years.

When the pandemic began in Brazil, his work was interrupted. At that moment, he borrowed a projector and started projecting from his window. Then, through a friend's contact, he was put into a whatsapp group of Projetemos Collective. In the first month there were approximately fifty people in the group, while in the second month this number changed to one hundred and fifty. Projetemos was born from the union of Felipe Spencer, Mozart Santos and Bruna Rosa. Today he is in charge of Projetemos together with the founders. Rafael helps in the creation of the daily agendas and to organize actions. He sees the light as another tool of protest and the power of going viral in social networks is fundamental. Back in pandemic, projections were left on for three hours, while today they remain on for only minutes. At present time, the focus is to project, take a picture and post it on social media. At the beginning of the pandemic he projected for more than a hundred days in a row. The production was very intense, while the group was getting stronger and at the same time taking a more organized form.

Brazil has twenty-five states in total and Projetemos has no representatives in the states of Amazonas, Acre, Roraima, Rondônia, Maceió, Sergipe, Rio Grande do Norte and Alagoas. We can conclude that the collective's range of action covers almost the entire country. Besides the five regions in Brazil, Projetemos has international networks.

During 2020, advertising companies noticed projections power during pandemic. At that time, Projetemos Collective started to receive job proposals. This was a moment of debate within the group participants, as some supported accepting advertisements while others disagreed. Projetemos kept on growing, reaching museums where curators invited them to

participate in exhibitions, such as the Museum of Portuguese Language and the MAC (Museum of Contemporary Art) in São Paulo.

Rafael believes that Projetemos will have a long life of action, since the network is strongly consolidated at the moment. Although the collective's pace of work has slowed down after the resumption of social activities, it still remains strong. He believes projections will be integrated into traditional demonstrations, just as graffiti was incorporated into social movements in the 70s. In 2022, for the first time, left-wing political presidential campaigns are being broadcast by projections in the cities. He doesn't know about projections from right-wing movements in Brazil.

For the future, he is interested in the use of lasers, and believes this is a growing movement in Brazil, since their beam reach is stronger.

## 6.6.3 - Mozart Santos

Vj, artists and political activist

Recife, Brazil

### PROJETEMOS COLLECTIVE

Mozart is from Recife, Pernambuco, where he has worked with projections and visual art. He moved to São Paulo in 2020, during the Covid-19 pandemic. While looking for an apartment to move into, he searched for window views facing walls suitable for projection. In Recife there are usually windows on all four sides of a building, while in São Paulo there are windowless walls ideal for projections. Downtown São Paulo is a popular area for projections due to its architecture.

In 2020, together with Felipe Spencer and Bruna Rosa, they created Projetemos Collective. Projetemos is a network that unites activists, journalists, content creators, VJs, among other groups of people interested in participating in political activism.



Figure 18. Free projection software created by the Projetemos collective.

A wave of fake news and misinformation took over Brazil during the pandemic. The federal government neglected to release relevant information about the pandemic, from contaminated and death statistics to prevention measures. There were no public campaigns for social isolation and the use of masks. The project emerged not only as a protest, but as an informative tool. Through the windows of the city, citizens began to be informed about what was happening and what could be done. For him, Projetemos is more than a collective, it is a network. They have activators in the five regions of Brazil, in South America, Europe, North America.

In order to make it easier for people to experiment projection, Projetemos created a software that can be accessed online through their website [figure 18]. The device enable people to create an image and connect it from computer to a projector. It is also possible to change codes, add motion effects, specials fonts and colors. The software was created for lives. Projetemos aims to create free projection tools and for this purpose they are in contact with programmers.

Projetemos gains political debate in the social network, a ramification they are interested in. According to Mozart, projection as an artistic installation is very ethereal and while published on the internet it is eternalized.

They have expanded their actions from internet to communities around Brazil. “We are illuminating walls to illuminate people. Light serves to carry a message. We work with light and with the lack of light.” Projetemos has already given workshops in Morro do Alemão, in Rio de Janeiro. Besides and they have produced cine clubs in the countryside of Ceará. Projetemos aims to teach people how to use the tool and also build it. Through a workshop, they taught people how to build projectors with flashlight, PVC pipe and magnifying glass [figure 19]. In this way, low-income populations that cannot afford to purchase the tool, are also enabled to project.



Figure 19. Projectors built with pvc pipe, magnifying glass and flashlight at MAC-USP, São Paulo 2022

As each person had a different projector with different amounts of lumens, an aesthetic was created due to the technical limitation. Bold letters and large fonts were applied to the projections. Contrast images between black background and white letter was strategically used to overcome the technical limitations of each light equipment.

The aesthetics of video mapping was imported from Europe to Brazil and he believes that there is much to be developed in relation to video mapping when it comes to the Brazilian identity as an aesthetic. He believes that video mappings with psychedelic aesthetics have changed and Brazilians have a great development potential in this area. As projections are tech-oriented, some artists feel inhibited to try. Mozart cites Roberta Carvalho’s work as an example of artistic work with strong identities.

## 6.7 VJ’S, ARTISTS AND FIRST TIME OPERATORS

### 6.7.1. Fernando Vaz Academic professor and political activist Belo Horizonte, Brazil

Fernando is a sociologist and a post-graduate professor at UFMG. He also has a consulting company, where he works with public policy evaluation. Fernando is also a militant of the leftist collective Alvorada.

As an activist, he used to work making big banners for political demonstrations. During the pandemic, he became part of the Projetemos Collective that encouraged him to start making projections. Fernando borrowed a projector from his cousin (VJ Alexis) and tried, for the first time, to explore the tool. At the collective, the script is debated in the morning, images are produced during afternoon and results are then projected in the evening. It was no longer necessary to have 5000 people holding a banner on Copacabana Beach to spread a message. The internet changed everything.

Fernando compares the legislation for projection in Brazilian cities. While there is no regulation for projections in Belo Horizonte, São Paulo runs under the Clean City Law since 2007. This law was passed to regulate and prohibit any advertising in the public space – including ideological propaganda [3].

Regarding his projection technique, he states that there are many professionals in the area and his projections are made in the simplest possible way. Fernando creates texts in Power Point and turns on the projector. He uses the tool not from its resources and potential, but from its limitations.

When I asked him if an activist can be considered an artist, he answers that it depends on the artist intention regarding the device. For Fernando, using the projector is mechanical, there is little of him in that action. He understands art as when the artist presents something of himself to a tool.

Brazil is facing a democratic process crisis. Fernando believes that people are seeking other forms of action to achieve a more effective response. He doesn't believe projections will replace street demonstrations, however, it is an important instrument to complement street actions.

An image projected by Fernando written "Today in Brazil 428 people died. All of them were someone's love" went viral on the networks. The post had 180,000 shares, 50,000 comments, even though he had 300 followers on Instagram at the time.

"Light is how I describe what I do."

### 6.7.2. Rafael Cançado (Homem Gaiola)

VJ and artist

Belo Horizonte, Brazil

Rafael has architecture as his academic background. He started working with visual arts under the influence of his brother who is also a VJ. Homem Gaiola began approximately ten years ago. Back then, he was part of an instrumental rock band and they performed shows in nature. He began to feel the contrast between nature and cities, which made him more connected with natural environments. He is also part of Afro-Brazilian religion Candomblé. These are two important elements in his projection investigation: nature and the religion symbolisms.

His political art is linked to African matrix religious movements and has nature as its main place of projection (forests and waterfalls). One of his works in natural environments was a laser painting of cerrado animals in a forest at Cerrado Mapping Festival. This intervention was not seen by anyone live, as it was done for its images to be published online. The projection works as a scanner, not being visible to the human eye, only through camera.



Figure 20. Cerrado Mapping Festiva. Projection by Dark Light Studio.

Each person is a political being, and activism has been changing art. The mere fact of living in Brazil is already seen as activism in some way, considering the many social problems that are always in vogue. He sees light as a tool that lead us. Everyday night creates new possibilities of narratives due to darkness. In this context, activist lighting can be powerful as it awakens one's curiosity.

Recently Rafael held a projection workshop at an NGO in Belo Horizonte, teaching people to use projection as activism. He taught people to use cheaper projectors in order that, combined with others, the impact would be greater.



Figure 21. Laser projectors display ready-made protest graphics in their preset.

Regarding his professional career, Rafael has already participated in two major lighting festivals in Belo Horizonte and abroad. At iMapp Bucharest he projected at the largest façade in the world, a 64.000 m2 wall. Along with video mapping, he also investigates lasers, mentioning that some laser projectors display ready-made protest graphics in their preset [figure 21]. Rafael believes there is plenty to be developed when it comes to video mapping in Brazil. For example, the blending of mapping with lasers is a trend. The use of different tools empowers narrative and multidisciplinary encounter is the future. From using different tools to mixing different realities: virtual and real.

### 6.7.3. Rodrigo Araujo (Bijari Studio)

VJ and artist

São Paulo, Brazil

The Bijari studio began inside architecture building of University of São Paulo. The studio develops projects in the convergence between art, design and technology. They gathered a multidisciplinary group composed of artists, video-makers, architects, set designers and strategists. Together they have created a history of understanding public space as a battleground and have learned to take a critical look at it.

Even though Bijari is been doing political art in Brazil for 24 years, their activist identity takes shape in 2016 with “Vocabulário Combativo” (Fighting Vocabulary). According to Rodrigo, political art is now better accepted in society than in the past. As everything is being recorded, one can no longer make mistakes as in the past.

Their work is part of a collective action in Brazil. In 2020, they joined Projetemos Collective and Activist Design. This collaborative network between artists was fundamental in empowering the protest voices. This is how a networked action is made.

Bijari was successful in creating its own graphic language and aesthetics, which today is easily identifiable in Brazil [figure 22]. They mixed references from constructivist graphic design and Swiss modernist to create a unique style of graphism. Images initially appeared for social networks and printed posters. Then, they started to be projected in all country. The studio won the Biennial Graphic Design Award with Combative Vocabulary work.



Figure 22. Bijari created their own graphic language and aesthetics.

“Illuminate something that no one is seeing”. For Rodrigo, light is one more tool for political protest, but we should use all possible tools, especially in the actual moment of Brazilian politics. He thinks that projection doesn’t have an obvious beauty. In large scales, it dialogues with the city and calls attention.

Rubens Mano’s light work “*Detetor de Ausências*” (absence detector) at Anhangabaú was made in 1994 and remains as a strong reference of political art for him. The urban intervention consisted of a light installation that crossed the viaduct perpendicular to the flow of cars and pedestrians. Two spotlights were installed on either side of the viaduct, allowing the light to spread down Anhangabaú Valley and dissipate into the immensity of the city.



Figure 23. Rubens Mano’s light work “*Detetor de Ausências*” (absence detector) at Anhangabaú Valley, São Paulo, 1994.

In 2022, Bijari is planning to do more projections. They intend to start using laser as a device, as it matches the graphic pieces they have been developing. He believes that light installations will become even more stronger, as technology supports dialogue within public space. He is interested in the idea of nomad projection, using the bicycle in demonstrations in order to perform live projections.

Rodrigo strongly believes that the possibilities of exploring mapping are not yet finished. There is still a lot to communicate in Brazil and to develop in terms of content. He explains that video mapping is different from projection. Mapping has another time frame as it requires planning, editing, art creation, and rendering. Political projections in façades are immediate, since from the moment news comes out, it must be communicated immediately. However, mapping doesn’t lose its political nature for this reason. Just by occupying the city it is already political, but in another way.

Brazil has a lot to evolve when it comes to video mapping. He explained that the new Mappin XR (Extended reality) technology is a term referring to all real-and-virtual combined environments, which is a new trend.

#### 6.7.4. Paulo Fluxus

##### VJ and artist

##### São Paulo, Brazil

Paulo Fluxus grew up in a family context of political activism. His father, a journalist graduated from ECA-USP, was an important activist in the resistance period against the Brazilian military dictatorship during 70s and 80s. From this background, he grew up having a strong familiar relationship with activist and student movements. He started participating in politics at a young age, since 2001, when he was a student at the United Colleges at Red Cross Nordic, a college in Norway. Like his father, he also attended ECA-USP (School of Communications and Arts of University of São Paulo). At ECA, he founded *Canil* occupation - a space for cultural freedom and political expression, resisting until today. In the fine arts course, he began to use light as an artistic instrument. The purchase of the first light equipment by *Canil* resulted in the creation of *Lab Lux*, a space for experimentation with light tools and performance.

He also created *Tanque Rosa Choque*, a political and artistic movement of interventions and performance. The tank confronted the truculent actions of the Military Police during demonstrations. At that moment, he started using green and red laser lanterns during the actions. The aesthetic matters are also placed within the field of war and struggle. Brazilian battle is constant, thousands of people are still murdered in

each year in the country due to firearm violence. Brazilians still need to fight for basic issues, such as the demarcation of indigenous lands and the right to housing for low-income populations. The context of extreme inequality creates the need for being active in the political debate, more intensely since the impeachment of ex-President Dilma Rousseff.

Starting in 2009, he began to think about light in order to strengthen his activism. He renovated a light desk from the 1970s amateur theater of Physics at USP and started exploring light. From 2009 on, he was active with *Tanque Rosa Choque* and at the same time working with stage lighting for independent bands in Brazil. He performed in the streets and on stages at the same time.

The media evolution has contributed to popularizing political interventions in demonstrations. Everything now is being filmed, and the police can no longer act in the same way they had done in the past.

Fluxus participated in two acts in which he used light as sabotage. In 2013, the singer Lobão started making insulting statements about the Brazilian military dictatorship, underestimating the historical reality of it. That same year, during a concert by the artist at *Virada Cultural*, Fluxus used a laser pointer at the stage in an attempt to sabotage Lobão's concert. Another intervention made by him was during Globo Television's SPTV news program. The program background was a live image of São Paulo, with a view to a postcard of the city. At that time, there was a group of protesters calling for the media democratization and standing against Globo Television Network. The main communication media did not report the demonstration until the moment Fluxus indirectly invaded the live studio by pointing a laser at the journalist's face. His intervention resulted in national news coverage of the demonstration.

Invited by the Guaranis of Jaraguá, from the state of São Paulo, he took part in the *Terra Livre* demonstration, for indigenous land demarcation. The protest took place in the two towers of Brasília's National Congress. Messages and images related to the Terra Livre Movement were projected onto the congress towers. Fluxus has worked with contemporary and indigenous artists and wants to be able to use high technologies to serve ancestral cultures [figures 24 and 25].

During the pandemic, Fluxus started using his laser projector to spread messages against federal government with phrases as "Jail Bolsonaro" and "Fora Coronaro". He was inspired by the Polish feminist activist group Strajk Kobiet. The group



Figure 24. Laser projections by LabLUXZ\_ of drawings by Denilson Baniwa. São Paulo, Brazil, 2018.

was in a very strong movement of interventions against the Polish ultra-right and in the first weeks of the pandemic, they started to reinvent ways of making demonstrations respecting WHO. During the quarantine, “*panelaços*” movement gained strength, a moment when people made sounds from their windows using pans while the federal government made speeches on television. At the same time, projections took over the city.

The way to interfere in the public space during the pandemic was through the windows. Given that, it was the moment to put action to proof. Through light, it was possible to strengthen voices, make articulations to intervene within the national territory and strengthen social movements in social media. It was a movement in which artists articulated themselves with VJs and collectives. The projections became the language of the pandemic and the potential of lasers was discovered in Brazil. Light tools are still expensive devices, with technologies that are limited to reach a larger audience. It is necessary that more people use these tools, which requires more autonomy to access technology. He supports technologic and knowledge democratization.



Figure 25. Laser projections by LabLUXZ\_ of drawings by Denilson Baniwa. São Paulo, Brazil, 2018.

Fluxus believes that there is a change in the way people look at protests, as since 2013 people are more receptive to it. He hopes that there will be more collective approaches and articulations to fight against Brazil’s growing fascism.

He has a project to invest in a car to be a mobile base for laser and projection interventions. This would facilitate articulations in public space with more autonomy. He believes that this revolution in ways of protesting is a new reality, with no going back. Now, even with the return of social activities, we will readapt to this. He has plans to invest in a new, more powerful, portable 10W laser that can be carried in a suitcase.

Fluxus is known as the Laser artist and activist in Brazil. The

first time he came into contact the tool was through a physics student in 2010 inside São Paulo University. After that, his world was transformed. The laser is a tool that best harnesses energy to transform it into photons. It is a technology that is becoming more popular and cheaper. Today it is possible to create images in real time, with other holographic and spatial qualities, with much lighter interventions and potential reach than projectors.

### 6.7.5. Alexis Anastasiou

VJ and artist  
São Paulo, Brazil

Alexis is one of the pioneer Vjs in Brazil. He has been working with projections and video mapping for 17 years. He started participating in student movements during the impeachment of ex-President Fernando Collor. At that time he was living in Brasília, Brazil’s capital. In 1999 he started playing at parties. The underground movement is a political scene, since they were parties that demanded freedom of speech. The political art movement of the early 2000s started from these meeting places.

He started to rent projectors for the parties and over the weekend he tested the projectors in his house. Even though the projectors at the time were weak, he managed to create aesthetic formats for the first projections on buildings. Jobs began to emerge from there and together with means to finance these projections. In 2008 mapping began to spread in Brazil and he moved to São Paulo to become a professional and work with projections and art through music.

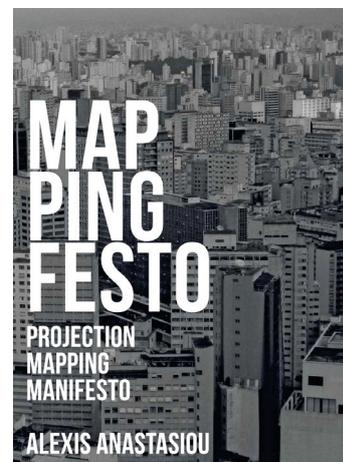


Figure 26. Mappingfesto is a book by Alexis Anastasiou that gathers his work with projections.

Alexis founded Visualfarm company in 2004, where together with a team, he creates technology-intensive spaces on the

border between art, entertainment, and design [figure 26]. In 2010 he made the first *Video Guerrilha*, a projection festival in public space with several artists. The festivals' graphics are different from the political projection actions. Activist projections are most of the times improvised. Many times there is no refined aesthetic concern, since the urgency of the action does not allow it. There was no concern in promoting itself through these actions, once the artists' names were not disclosed in the projections.

For Alexis, projection doesn't need to have clear messages to be political. The choice of the place for the projection is already in itself a political act. He has an active participation in the Brazilian political protests scene.

Before the election of President Jair Bolsonaro, he lent projectors and distributed them to several people in the city of São Paulo to project messages against his candidacy. Furthermore he was arrested by the police for projecting in front of MASP after the murder of federal deputy Marielle Franco. Alexis also projected at national congress in favor of the indigenous cause. He has already had projections stopped by the police because of the content that was directly aimed at a politician.

In the pandemic the image became a response to the pain, it represented what was happening. At the beginning of quarantine he projected an image of the President that went viral [figure 27] on social networks. The image was a phrase said by Bolsonaro, when he disdained the seriousness of Covid-19. He believes that this projection may have driven the waves of projections that emerged in the pandemic.



Figure 27. Projection by Alexis that went viral at the beginning of the pandemic in Brazil.

Since in the city of São Paulo there is a Clean City Law regulation, the focus was once again not to publicize who was doing the projections, but to create an activist movement.

The projection is a tool to democratize the architecture of the country, but it is limited to a few people. Many people

graduate in architecture, but few sign a building or even a house. And through the projection, that architecture can become "something personal" of who projects.

Social networks are a way to democratize the distribution of images. The objective is to create impactful images in a cheap way and distribute a message.

Drones are being explored recently and have faced some challenges. Excessive sun, rain, or strong magnetic interference near to it can interfere with its programming. He does not believe in the popularization of drones like projectors, once the cost is too high and the system is too complex. Alexis is manufacturing drones in Brazil and has been exploring the tool extensively.

### 6.7.6. Roberta Carvalho

VJ and artist

Pará, Brazil

Roberta started studying literature at UFPA (Federal University of Pará). Literature brought her poetry and led her start a new study of Visual Arts at UNESP - Universidade Estadual Paulista. She has been working with video art since 2003 and debates social and cultural matters in Brazil.

She is originally from Northern Brazil, region that is constantly fighting for representativeness [figure 28]. When an artist is aligned with the country's social issues, he/she will produce, dialogue and question the worries that arise from social and political context. Art is placed in a political scene as it brings possible answers to these ways of reviewing and looking at reality.

Public space is permeated with information, whether advertising or architectural. The city imposes on us a history and the city itself. It also imposes a visual and psychic flow. The projection has the capacity to interfere, producing other debates through new layers and architecture. For Roberta, activism comes from the idea that one can interact in the city that crosses us. It is a new possibility of narrative within the urban scale.

Light is something ancestral to the human being. From the visualization experiments of the dark chambers inside caves, to the light of the projections with shadows of the Chinese theater of phantasmagoria. She feels that light has a connection and a dazzle with the human being. We understand life as light and shadow. She believes that the human being

connects with light in a very ontological way.

For her, video mapping is connected with the illusionism of the 17th and 18th centuries. The VJs are the new illusionists of the 21st century, because they are also creating a game between ludic, fright, enchantment and people's imagination. Light has a special power when connected to the city and protests at the same time. The possibility of amplifying a message in urban scale and its ephemerality is also relevant.



Figure 28. "Symbiosis" work. Indigenous people projected onto the Amazon rainforest. This work is being projected since 2007.

Light allows us to connect with our imaginary. Arlindo Machado makes a relationship between dreams and projection. When we dream, we are projecting. Projection has an oneiric relationship.

Two political works using light as a tool that influenced Roberta Carvalho are *Multitude*, by Lucas Bambozzi and Denilson Baniwa drawings projected by VJ Fluxus. The first work was made with two projections face-to-face with images of two crowds. The images of this crowd, recorded with about 150 people in Vale do Anhangabaú (about 1 hour before the projection) are confronted with images of another crowd, previously recorded.

The other work was made by VJ Fluxus with the indigenous artist Daiara Tukano. It was projected at the Municipal Theater of São Paulo, in an exhibition about another view of modern art.

The experience of a live projection is very different from that experienced through computer screens and cell phones. They are not comparable and with distinctive importance.

Robert can't measure the future of protest lighting, but she believes that artists have the historical intention of occupying

media and cities with other speeches and possibilities of seeing reality. The online and virtual will be much more connected with our reality and mixed realities as well. Roberta believes in the collaborative network between artists, as she is part of *Projetemos Collective*.

For the coming years she plans to continue consolidating her trajectory and principally within the language of projection related to the environments that she is part of - North and Amazon region. She plans to keep her activism linked to environmental and technology research. Roberta also works in the field of artistic direction and has participated in projects involving art, technology, immersive spaces and interactive works. The artist today is also a producer and articulator. Roberta will participate in an art direction project at the next *Rock in Rio*, named *Nave*, an immersive installation about Amazon. In addition, she will also participate in the next *Amazônia Mapping*, which she devised together with other artists since 2013.

About the possibilities of exploring mapping in Brazil, Roberta believes that the possibilities are hardly exhausted. It is a language that is transforming and constantly evolving. Mapping in the first instance was very much linked to architecture and now it tries to explore other surfaces, such as nature (water, trees), for example. Roberta believes that the artist is limited to the language of the video mapping software, because each one has a specific language. The art is limited to machine's own discourse. When one manages to reprogram the possibilities of the softwares with contents that are actually relevant, the result can be renewed.

She quotes Arlindo Machado by saying "Man cannot be an employee of the machine". How to break this cycle and reinvent yourself?

## 6.8 DIGITAL MEDIA COMMUNICATION EXPERTS

### 6.8.1. Marília Pasculli

Digital Art Curator

São Paulo, Brazil

A financial, environmental and political crisis combined with the pandemic of 2020 brought political activism in Brazil to another dimension. Brazilian demonstrations, usually organized parades, were forbidden for health protection reasons. At that moment, demonstration with light became a tool for people to be able to protest through their windows. A massive political activism movement took place, where up to 200 people were simultaneously projecting from their windows.

Light is an excellent communication tool specially in cities with high population density. It can communicate over long distances whether by drones, projectors or lasers.

Brazil is still protesting for survival reasons, as hunger increase, inflation, health crisis, death and pandemic. In addition, violence is growing. During the pandemic, cases of domestic violence have increased dramatically.

One political protest that marked Marília was an action supported by São Paulo City Hall, named “Voices against Racism” curated by Helio Menezes, in 2020. The city government funded the project and gave the possibility to black and indigenous artists to rewrite their stories on São Paulo’s monuments. Indigenous artist Denilson Baniwa

projected “Brasil Terra Indígena” (Brazil Indigenous Land) and also rupestrian drawings on the Bandeirantes Monument. This monument is dedicated to men that colonized and killed thousands of Indians during the Brazilian colonization. The intervention was carried out at night and turned off the lights of the city monument while using it only as a surface to project the graphics and messages [figure 29].

For Marília, the interventions encourage each other in a cycle of empowerment. The social media contribute for these messages to be everlasting and to reverberate. Social media’s immediacy has encouraged other people to join the movement, which has been gaining strength. The 2020 movements were massive and generated an aesthetic and communication language in Brazil. Nowadays, political campaigns adhere to this language in order to promote themselves. The cheapening of lighting equipment has made this massification of projections even more popular.

Marília believes that video mapping aesthetically as it exists today is very similar to what it was 20 years ago and what has changed is its accessibility. She also noticed that lasers seems to have taken a bigger proportion in the last few years, as it has a higher brightness than video projectors.

When a new technology is launched, it is first intended for those who have more purchase power and then it becomes popular. Marília believes that we are at the end of an era with video mapping and new forms of immersion between the real and the virtual are beginning. Mapping will not be replaced, but incorporated into virtual realities, without physical space, such as the metaverse experience.

Marília believes in a greater popularization of Laser,

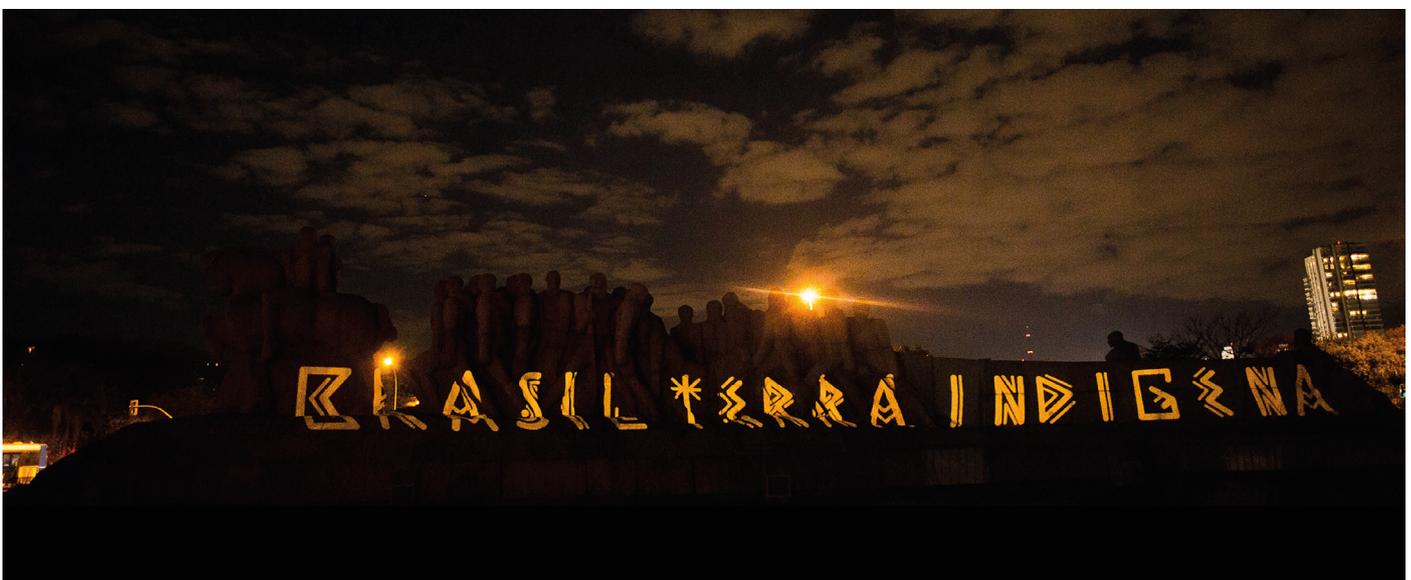


Figure 29. Indigenous artist Denilson Baniwa projected “Brasil Terra Indígena”(Brazil Indigenous Land) on the Bandeirantes Monument. São Paulo, 2020.

but she believes that the language should not be changed significantly.

Light is seen as a tool for progress and many cities in the world have incorporated large LED panels into their architecture, as in Asia. This concept has not proven to be beneficial for nature. The impact also happens to our bodies with the excess of artificial light. The world is demanding sustainable solutions, and the amount of light in the cities needs to be dosed. Nature produces bioluminescence and she believes that new sustainable solutions can be explored to light urban centers.

Marilia believes that demonstrations with light generate a commotion and help defend democracy, since they allow people to express themselves. Every protest has to be supported. Society needs to use all available resources to defend democracy, whether it's the vote, lights through window or writing. All these professionals and activists must continue to exploit these tools effectively. Projections can be strategic from a political point of view, as they generate interesting images to be observed on social networks.

### 6.8.2. Luciana Moherdavi

Post-doc in media facade at FAUUSP  
São Paulo, Brazil

Luciana makes a parallel between projections and graffiti. In 2011, the president Dilma Rouseff created the Graffiti Law, establishing rules for its use in cities. Making this comparison, she defends the establishment of a federal law for projections. São Paulo runs under Clean City Law. This law was passed to regulate and prohibit any advertising in the public space – including ideological propaganda [3]. Brazilian cities have different regulations or do not have any. Currently, to project in São Paulo following the Clean City Law, one needs an approval from the public (city hall) and private (depending on the building where it will be projected).

The massive movement of projections is recent, dating from 2020. Even though there were projections in the city before, nowadays the dimension is different. In 2022, some political parties started using projections for their campaigns. The Superior Electoral Court (TSE) has no regulations regarding projections. For Luciana, projections are not the same as outdoor billboards, they need to have a different law. There is a lack of state efforts to deal with projections and to look at them with the magnitude that they have nowadays. Luciana defends the creation of a digital culture law.

She compares the projection collectives in Brazil and the New York movement *The Illuminator*, which emerged during the *Occupy Wall Street* movement in 2012. The Brazilian case not only acts as artistic activism, but also as news reporting. This characteristic is unique to the Brazilian movement. During pandemic, projections reported the number of people killed by Covid-19, while the federal government itself stopped publishing official numbers.

The movement that happened in Brazil was very meaningful due to the political conditions that we are going through. Other places in the world, such as Italy, have used projectors to show films on house façades and other entertainment events.

Luciana believes that the articulation power of projections when published on social media is fantastic. She also observes that the projection movement in Brazil is characteristic of left-wing movements, since she has never seen projections from the right-wing parties.

Luciana states that projection collectives in São Paulo do not respect the City Clean Law, which is an outdated law and does not include contemporary urban situations such as projections as they are done today. It needs to be revised and updated. Who would be willing to think about this?

I ask if authorization is needed to do activism. And she answers me that from a rational point of view, they need to respect the laws. São Paulo city hall closed their eyes to this question. Luciana believes that political projections need to be allowed by the private sector, not the public. That will guarantee people more autonomy.

We discussed the recent fact that happened at the Russian embassy in Washington, where the Russians tried to erase a projection of Ukrainian flag with another beam of light.

São Paulo is a reference city in national projections, due to the amount of people and the architectural walls, mainly in the downtown area. This same city is the only one that has a law that mentions projections, but even so it is outdated. She defends a national debate about the theme.

## 6.9 INTERVIEW QUESTIONNAIRES



Lights for Democracy:  
Lighting as a tool for Brazilian political protests

Helena Peres Caixeta Silva  
Master Thesis Student

KTH Royal Institute of Technology  
School of Architecture and Built Environment  
Master of Science in Architectural Lighting Design  
2021-2022

Dear Sir/Madam,

I appreciate your support and kindness in answering this interview. The expert interview is part of my case study for my Master Thesis at KTH.

With your participation, you agree that the **interview will be recorded**, in order to simplify the data gathering process. The **information provided on this interview will be published as well as your personal information** (name, profession and photograph).

**All interviews will be conducted in Portuguese and then transcribed and translated into English. The complete interview will be shared and you will perceive the English text for approval.**

### Questionnaire (general questions for all interviewees)

- 1) What were the main reasons that you started to work in the field of art and activism in Brazil? (\* for artists)
- 2) What makes art for social change special in Brazil in last years and how has it changed over the years?
- 3) Political protests using light (video mapping, laser mapping and other technologies) are increasingly in the Brazilian scene and also worldwide. How do you evaluate the role of light as a protest tool?
- 4) Considering the Brazilian context, can you describe me some political manifestation in which the use of light has impressed you?
- 5) During the pandemic, we could notice an increase of projections on the facades of many Brazilian cities. What was already being developed before gained strength through a higher recognition of projection collectives. In which way do you see relation between these political interventions with light and social media?
- 6) How do you visualize the future of political protests using light tools and what are your plans for the next two years? (\* for artists)
- 7) Do you believe that the Brazilian activist art scene has established a network with collaborations or is it more about individuals working on their own social activism projects?



**Questionnaire:  
(specific questions)**

**Vj Alexis (video mapping and drone artists)**

- 1) Recently a drone performance held in Hamburg, Germany had to be cancelled by interference from high speed external drones. (<https://www.elbphilharmonie.de/en/mediatheque/drift-breaking-waves/727>). As a professional in this field, what challenges have you faced using this tool?
- 2) Do you believe that drones can become popular tools for artistic and political manifestation, like mapped projections?

**Vj Fluxus (laser mapping artists)**

- 1) What specifically attracted you to work with laser research and artistic performance comparing to other technologies?
- 2) How do you evaluate the specific use of the laser as a tool for political manifestation in your work?

**Roberta Carvalho (video mapping artist)**

- 1) Video mapping has been used intensively in the last 20 years as a form of artistic manifestation and more recently as a political tool. Do you believe that the possibilities of exploring mapping are already being exhausted or there is still a lot to explore? How do you evaluate the technological evolution of projection tools and the consequent evolution of artistic work with video mapping?
- 2) How do you see the future of political protests using video mapping?



### **Rodrigo Araujo (video mapping artist)**

- 1) Video mapping has been used intensively in the last 20 years as a form of artistic manifestation and more recently as a political tool. Do you believe that the possibilities of exploring mapping are already being exhausted or there is still a lot to explore? How do you evaluate the technological evolution of projection tools and the consequent evolution of artistic work with video mapping?
- 2) How do you see the future of political protests using video mapping?

### **Rafael Cançado - Homem Gaiola (video mapping artist)**

- 1) Video mapping has been used intensively in the last 20 years as a form of artistic manifestation and more recently as a political tool. Do you believe that the possibilities of exploring mapping are already being exploited or is there still a lot to explore in the Brazilian context? How do you evaluate the technological evolution of projection tools and the consequent evolution of artistic work with video mapping?
- 2) What were the biggest technical challenges you faced during your interventions with light?

### **Fernando Vaz – activist and first time operator**

- 1) Video mapping has been used intensively in the last 20 years as a form of artistic manifestation and more recently as a political tool. Do you believe that the possibilities of exploring mapping are already being exploited or is there still a lot to explore in the Brazilian context? How do you evaluate the technological evolution of projection tools and the consequent evolution of artistic work with video mapping?
- 2) What were the biggest technical challenges you faced during your interventions with light?



### **Rafael Rasone – Projecemos Collective**

- 1) Video mapping has been used intensively in the last 20 years as a form of artistic manifestation and more recently as a political tool. Do you believe that the possibilities of exploring mapping are already being exploited or is there still a lot to explore in the Brazilian context? How do you evaluate the technological evolution of projection tools and the consequent evolution of artistic work with video mapping?
- 2) I would like to understand how the collective was formed and how you evaluate its importance today in the Brazilian political context. What has evolved since the beginning and what are the biggest challenges you face as a collective?

### **Mozart Santos – Projecemos Collective**

- 1) Video mapping has been used intensively in the last 20 years as a form of artistic manifestation and more recently as a political tool. Do you believe that the possibilities of exploring mapping are already being exploited or is there still a lot to explore in the Brazilian context? How do you evaluate the technological evolution of projection tools and the consequent evolution of artistic work with video mapping?
- 2) I would like to understand how the collective was formed and how you evaluate its importance today in the Brazilian political context. What has evolved since the beginning and what are the biggest challenges you face as a collective?

### **O.P. – Projetação Collective**

- 1) Video mapping has been used intensively in the last 20 years as a form of artistic manifestation and more recently as a political tool. Do you believe that the possibilities of exploring mapping are already being exploited or is there still a lot to explore in the Brazilian context? How do you evaluate the technological evolution of projection tools and the consequent evolution of artistic work with video mapping?
- 2) I would like to understand how the collective was formed and how you evaluate its importance today in the Brazilian political context. What has evolved since the beginning and what are the biggest challenges you face as a collective?



**Marília Pasculli (researcher)**

- 1) Video mapping has been used intensively in the last 20 years as a form of artistic manifestation and more recently as a political tool. Do you believe that the possibilities of exploring mapping are already being exploited or is there still a lot to explore in the Brazilian context? How do you evaluate the technological evolution of projection tools and the consequent evolution of artistic work with video mapping?
- 2) What connection do you draw between occupying the city with light, projections, and media for protests, and the Brazilian democracy?

**Luciana Moherdau (researcher)**

- 1) Video mapping has been used intensively in the last 20 years as a form of artistic manifestation and more recently as a political tool. Do you believe that the possibilities of exploring mapping are already being exploited or is there still a lot to explore in the Brazilian context? How do you evaluate the technological evolution of projection tools and the consequent evolution of artistic work with video mapping?
- 2) What connection do you draw between occupying the city with light, projections, and media for protests, and the Brazilian democracy?

