MAPPING SPACES OF RESISTANCE IN VIDEOGAMES

Hamza Bashandy

Doctoral dissertation submitted to obtain the degree of doctor in Architecture and Planning from the University of Liège

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Abstract (ENG)

This project is about spatial claims. From a decolonial point of view, how can we lay spatial claims over the space of video games? As the physical space, the cyber realm is a technological overlay of space in which power struggles, capitalists and neoliberal agendas are in play. Therefore, in this thesis, I lay out case studies in which people make spatial claims through the gamespace. I am concerned with two performances of democracy: One is participation, and the other is protest. Both are essential facets of civic engagement and have carved a significant space in game studies over the past decade. Following a grounded theory logic, this research comprises three cycles of synthesis that embrace three claims: a spatial claim, a digital claim, and a claim over code.

The first cycle (spatial claim) aims to outline design principles of public space that facilitate contemporary protest and offer spatial resources through spatial exercises for protesters to strengthen their spatial literacy. The second cycle (digital claim) investigate playful tactics employed by protesters in public spaces or players in participatory workshops to disturb institutional control over our physical and virtual spaces. The third cycle (claim over code) starts with the argument that a spatiality that is not understood at the point of code and algorithm will not be open to our resistance. Therefore, it is important to have a hold over code to have true resistance and democratic participation and engagement in making the gamespace.

The outcome of this project is a video game titled Return to Sender. This research-creation project is about disruption. It brings one of the protesters' innovative spatial tactics: the use of a tennis racket to throw tear gas away. Not only does it disrupt the materiality of the racket, but it also disrupts the policing order who does not anticipate such resistance. I employed reflexive positionality in which I recognized myself as part of the research. I define four segments that have affected my research-creation process: the choice of the game narrative, the influence of the game engine, the position of the camera, and the performance of the crowd in the gamespace.

Ultimately, this thesis aims to reposition the role video games play in society from entertainment or a social phenomenon to involve a responsibility in social struggle and social movements.

Abstract (FR)

Ce projet porte sur des revendications spatiales (Spatial Claims). D'un point de vue décolonial, comment peut-on revendiquer spatialement l'espace des jeux vidéo ? En tant qu'espace physique, le cyberespace est une superposition technologique d'espace dans lequel les luttes de pouvoir, les capitalistes et les agendas néolibéraux sont en jeu. Par conséquent, dans cette thèse, je présente des études de cas dans lesquelles des personnes exercent des revendications spatiales à travers l'espace de jeu. Je m'intéresse à deux représentations de la démocratie : l'une est la participation et l'autre la manifestation. Les deux sont des facettes essentielles de l'engagement civique et ont occupé une place importante dans les études sur les jeux au cours de la dernière décennie. Suivant une logique de théorisation ancrée, cette recherche comprend trois cycles de synthèse qui englobent trois revendications : une revendication spatiale, une revendication numérique et une revendication sur le code.

Le premier cycle (revendication spatiale) vise à définir les principes de conception de l'espace public qui facilitent la protestation contemporaine et offrent des ressources spatiales à travers des exercices spatiaux pour les manifestants afin de renforcer leur littératie spatiale. Le second cycle (revendication numérique) interroge les tactiques ludiques employées par les manifestants dans l'espace public ou les joueurs.euses dans des ateliers participatifs pour perturber le contrôle institutionnel sur nos espaces physiques et virtuels. Le troisième cycle (revendication sur le code) commence par l'argument qu'une spatialité qui n'est pas analysé au niveau du code et de l'algorithme ne sera pas ouverte à notre résistance. Par conséquent, il est important d'avoir une emprise sur le code pour avoir une véritable résistance et une participation et un engagement démocratiques dans la création de l'espace de jeu.

Le résultat de ce projet est un jeu vidéo intitulé Return to Sender ; Un projet de recherche-création sur la disruption. Il apporte l'une des tactiques spatiales innovantes des manifestants : l'utilisation d'une raquette de tennis pour lancer des gaz lacrymogènes. Non seulement cela perturbe la matérialité du racket, mais cela perturbe aussi l'ordre policier qui n'anticipe pas une telle résistance. J'ai employé une positionnalité réflexive dans laquelle je me reconnaissais comme faisant partie de la recherche. Je définis quatre segments qui ont influencé mon processus de recherche-création : le choix de la narration du jeu, l'influence du moteur de jeu, la position de la caméra et la performance de la foule dans l'espace de jeu.

A terme, cette recherche vise à repositionner le rôle de divertissement ou de phénomène social que joue les jeux vidéo dans la société pour impliquer une responsabilité dans les luttes sociales et les mouvements sociaux.

Acknowledgement

I am thankful for those who intellectually and morally guided me throughout this journey. This thesis would not have been possible without the support and guidance I received from many people.

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I want to thank my supervisors, Prof. Pierre Hallot and Prof. Björn-Olav Dozo, for their endless encouragement, support and care. A support that started with my master's project and extended all the way to my Ph.D. I also owe gratitude to professor David Tieleman for his academic direction and for being part of my thesis committee. My sincere appreciation goes to my jury Prof. Claudine Houbart, Prof. Rilla Khaled, Prof. Éric Le Coguiec and Dr. Fanny Barnabé, for agreeing to read and evaluate my work.

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While I had to move from office to office due to the construction work in our faculty, this gave me the chance to meet with Éric Le Coguiec. His work on research-creation was of great value to my research. And to my friends Pavel Kunysz and Justine Gloesener, I apologize that

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CONTENTS

Introduction

Research Motivation and Problem Statement

Two significant events have shaped my interest in video games, spatiality, protest, and participation. It started in 2016 when the Egyptian state and police successfully suppressed any assembly efforts in public spaces. That year hundreds of videos went viral on social media showing the police kettling and arresting dozens of protesters with ease in El Mesaha Square. Then, I asked why protesters chose this place specifically and how protesters could be easily trapped in that way. I realized that at that time, El Mesaha square was not a random fate; instead, it was the only public space left open after the police had insured their stronghold over Tahrir square, the epicentre of the Egyptian revolution. After successfully occupying Tahrir Square for 18 days, how could we lose the space? This particular enclosed space, with its high-rise buildings, made the demonstration an easy target for the police. My questions and discovery necessitated action toward a better understanding of spatial literacy in the context of protest. These events have shaped my research to this day and ushered me toward the gamespace as an alternative space of exploration and a tool that can generate spatial strategies.

The second incident occurred during my participation in a workshop titled 'Our Maps, Our Rights' where Nubians and other volunteers, including myself, traced Nubian's old land through archival material and oral history. However, the trials failed to include the workshop's cartographic output to OpenStreetMap (OSM), an open-source mapping platform. The original land of Nubians is now under a body of water due to the construction of dams, which triggered OSM's platform to reject our cartographic entries in that area. OpenStreetMap is a popular mapping software not only among cartographers but also among architects, planners and geographers. It is part of digital platforms such as volunteered geographic information tools (VGI) and public participation geographic information systems (PPGIS) that emerged with Web 2.0 in early 2000. Such interfaces promised to shift the power of space-making from the hand of states and urban planners to the people, creating a common space that serves their interests, human interests - instead of those of a profession or a state (Wood, 2010; p156). However, the OSM workshop exposed the limitations of VGI and PPGIS tools when mapping spaces outside the common understandings of reality and materiality.

Notably because VGI and PPGIS did not catch up with their premise of allowing mapping rights to all. Such tools are fixed on the material understanding of the world, one that constitutes a singular reality. For migrants who lost their land due to forced displacement, this place still exists in their collective memory and imagination. My interest in exploring video games was influenced by anthropologist Celia Pearce's study of the "Uru Diaspora" in her book *Communities of Play: Emergent Cultures in Multiplayer Games and Virtual Worlds*. When *Uru: Ages Beyond Myst*, the adventure video game, was shut down in 2004, its dedicated 10,000 players called themselves "refugees" and migrated to different MMOGs (massively multiplayer online games) such as Second Life (2003) and There.com (1998). Another group of players reverse-engineered the server and were able to restore the gamespace. There, they recreated their own original Myst game space. They used the same artifacts and landmarks, such as the fountain, which was central to social life in Myst. (Pearce, 2008) This case of trans-ludic diaspora let me realize gamespace's ability to facilitate the representations of non-material and unconventional conceptions of space, rendering the it a fertile space to retrieve the lost spaces.

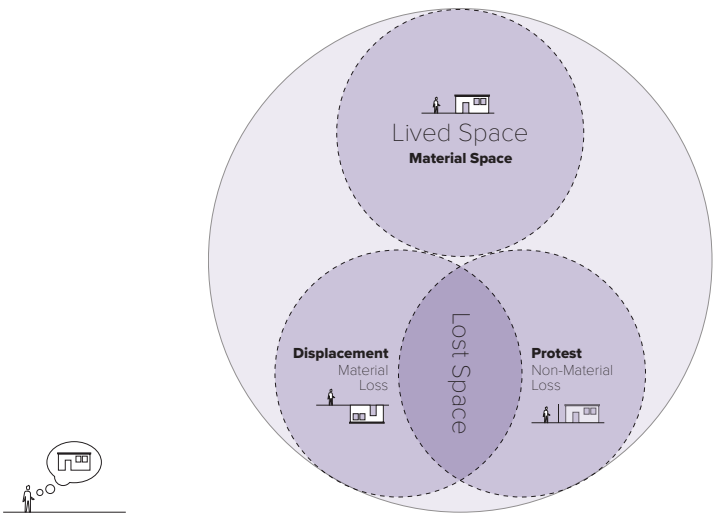


Figure 1: An illustration by the researcher that shows the difference between the live space and the lost space.

Gameplay has the potential to host grassroots efforts, in addition to its ability to situate the player within the time and space of these lost spaces. Video games have the potential to expand space from its material boundaries. Therefore, it allows for a broader range of possibilities in space-making by mapping. It can open a space for mapping the lived, lost,

and imagined space, (Figure 1)opening a door for representing new and old territories that can serve disenfranchised groups and marginalized perceptions of spaces and maps. Thus, this project puts forward the use of digital games to materialize these imagined spaces. At the same time, this research does not intend to romanticize the digital space or in any way frame it as a space of absolute freedom. As the physical space, the cyber realm is a technological overlay of space in which power struggles, capitalists and neoliberal agendas are in play.

Research Objectives and Outcomes

This project is about spatial claims. From a decolonial point of view, how can we lay spatial claims over the gamespace? In this thesis, I lay out case studies in which people make spatial claims through the gamespace. I am concerned with two performances of democracy: One is participation, and the other is protest. Both are essential facets of civic engagement and have carved a significant space in game studies over the past decade. If protest contests the ownership of the public space, participation, on the other side, entails a subtle agreement between the citizen and the state on said ownership. Participation necessitates citizens' involvement with the hierarchical systems (government, city council, urban planner), while protest only works against the system to claim social justice.

Although this research started in 2016 with an investigation on *protest*, my interest in *participation* developed during the 2018 *LiegeCraft'* project. The Liège game lab (LGL) initiated a series of participatory workshops to bring the local community to recreate and redesign the city centre of Liège, Belgium, using *Minecraft*. The tasks were simple: have a guided walk within the narrow streets of liège, make some observations, take some pictures, get back to the lab, open google maps, and recreate the observed architecture in *Minecraft*.

However, in one of these sessions, and as the yellow vests protests were erupting between Paris and Brussels and other European cities, some participants recreated a group of avatars wearing yellow vests occupying the public space in the city centre of Liège. (Figure 2)Such unexpected and disruptive performance brought this question to my mind: What can happen when players disturb the participatory process with its established hierarchies?[1]

1 I speak in detail about Minecraft and Participation in the second chapter. My trial to answer the question can be found in the 4th chapter: Mapping Code Policing in the Gamespace: A Comparative Study of Pokémon Go & Riot:Civil Unrest.

Figure 2: A screenshot taken from Minecraft during the LiègeCraft project.

This research is intended to serve underrepresented, marginalized and disenfranchised groups; it is an attempt to offer activism by research as it looks at ways to redistribute the power of space-making and map-making. It envisages an outcome that will pave the way for groups such as protesters in public spaces, active community members, and displaced peoples to reclaim their cyberscape. For developers and designers, this research intends to offer tools to mitigate exclusionary tendencies in video games and find recommendations for designing an inclusive platform. As for scholars in related fields, this dissertation will provide a theoretical framework and suggestions for further investigation. Eventually, this work continues my master thesis path that dedicates information and resources to marginalized and disenfranchised persons in which research and development in the study of video games can become available to sections of society that are often overlooked. This research is part of my conviction in activism through knowledge.

Research Methodology

The methodological framework of this project aims to put at the forefront a social agenda that posits video games as a tool to advance spatial justice. However, the research gets entangled with the issues already embedded in video games theory and architecture theory and tries

to negotiate them; topics include technological determinism from one side and trying to consolidate the space of the play and the physical space from the other side. To untangle these issues and to posit gamespace as an active agent in social justice, this project aims to answer five questions through its five chapters:

1. What is the gamespace? *Architecture of Videogame spaces* provides an analysis of the nature of spatiality in video games.
2. How do we learn from it? *Videogames & Protest: Recalibrating Spatial Literacy in the Gamespace* proposes spatial literacy, a combination of 'spatial awareness' and 'spatial engagement,' to measure the level of spatial literacy a game on protest can offer.
3. How do we partake in it? In *Playing, Mapping & Power: A Critical Analysis of Using Minecraft in Spatial Design,* I assess video games' capacity to share their gamespaces with players during participatory projects.
4. How do we see it? *Mapping Code Policing in the Gamespace: A Comparative Study of Pokémon-Go and Riot: Civil Unrest* draws examples of 'counter visuality' to claim our right to look. (in my case, the apparatus of visuality is defined as gamespaces' ability to control and survey our bodies and our spaces)
5. How do we activate it? *Return to Sender* proposes a critical reading of elements that compose gamespaces of protest (code, narrative, camera, avatar) through research-creation.

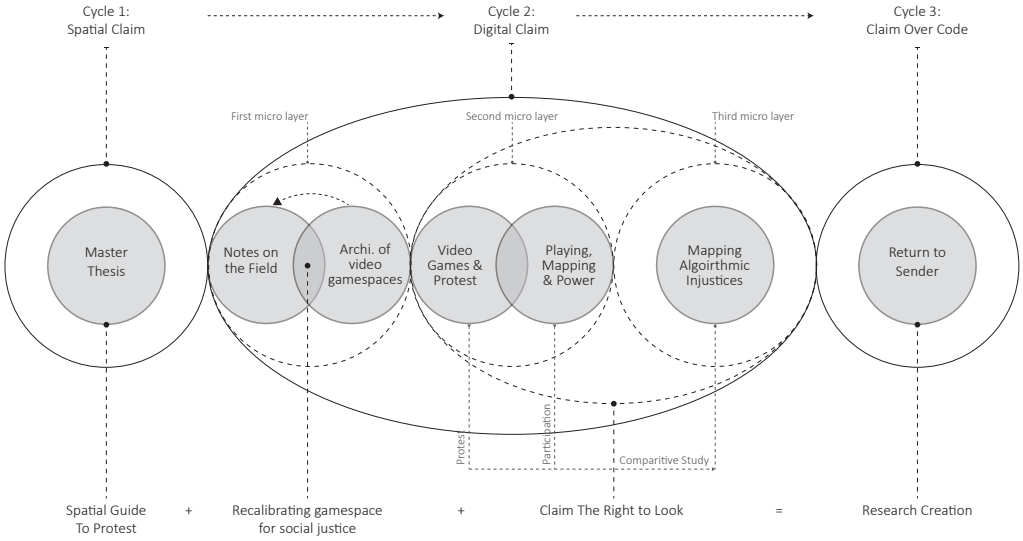


Figure 3: Research cycles and their connections with the chapters. Illustrated by the Researcher

It is paramount for the purpose of telling a comprehensive story about this research methodology to see it in the framework of a larger research that includes my master's thesis, my Ph.D. dissertation, and other smaller research projects conducted around the issue of video games. The overarching aim of this doctoral thesis revolves around the term *claim*. However, an open introspective methodological approach was needed for this *claim* to be substantial and meaningful. Thus, the dissertation follows grounded theory logic. (Glaser & Strauss 1967) The term "grounded theory" refers to a systematic qualitative method in which the collected data and analysis reciprocally feed each other through an iterative process. (Charmaz, 2012) With its 'flexible approach' that offers a collection of guidelines rather than a set of methodological procedures, grounded theory can be useful for social justice inquiries. (Charmaz, 2011 & Irwin, 2019)

The dissertation starts without a specific hypothesis. It has also liberated itself from a fixed research question. However, I have committed myself to the political project of spatial justice around protest, democracy, and participation in video games. Following grounded theory logic, this thesis's methodological rhythm is cyclical, necessitating engaging with existing theory and data, circling back to my original position, and resynthesizing my theory to develop a new proposition. Grounded theory does not include presupposed impositions; instead, the analytic focus of the researcher emerges during the research process. (Charmaz & Thornberg, 2021) Therefore, I allowed the cyclical process to change and readjust my initial research questions to adapt to my claims. This research comprises three cycles of synthesis (Figure 3)that embrace three claims: a spatial claim, a digital claim, and a claim over code.

Synthesis Cycles

1. Spatial Claim: This cycle starts from the point of the physical space. I question the role of space during a protest. And how can spatial analysis help us understand power structure during a protest? The research extensively maps spatial phenomena in the context of protest while surveying theoretical debates around protest issues in urban spaces. The cycle's outcome can be summarized in two goals. Firstly, to outline design principles of public space that facilitate contemporary protest and to extract advanced concepts of common space.

   Secondly, to offer spatial resources through spatial exercises for protesters while utilizing digital tools to strengthen their spatial literacy. The research concludes that

protesters can generate spatial strategies and tactics that can disturb policing order and propose that videogames can be utilized as a vessel through which protesters can acquire spatial literacy to claim the physical space. This cycle started in my master project and composed the foundation on which I built my 2nd and 3rd cycle.

2. Digital Claim: The second cycle considers the digital gamespace as its starting point of investigation. This cycle forms the core of my dissertation and is divided into three microlayers. The first layer aims to understand the nature of the gamespace through chapter 1: *Architecture of Videogame spaces.* It offers a reading of the available literature on gamespaces. (Later, in *Notes on the Field*, I revisit the concepts of this article to propose a counter-reading)

   The second layer comprises two chapters: *Videogames and Protest: Recalibrating Spatial Literacy in the Gamespace* and *Playing, Mapping, and Power: A Critical Analysis of Using Minecraft in Spatial Design*. It investigates ways of claiming the lost space (spaces out of reach for protest due to police control) and the lived space (social spaces of everyday life) through protest and participation's link with video games.

   The third layer proposes a comparative case study between *Riot: Civil Unrest*, a videogame that reconstructs our lost spaces of protest, and *Pokémon-Go*, a location-based game that is associated with practices of participation in mapping the lived space. This part comprises chapter 4: *Mapping Code Policing in the Gamespace*. I apply a lens of "visuality[2]" and "procedurality[3]" to draw conclusions about institutional unjust and biased practices that affect our physical and virtual spaces. Conversely, it highlights how players' innovative use of these games can, even temporarily, disturb state and institutional order.

3. Claim over Code: This cycle starts with the argument that understanding the politics of the gamespace through the writing of urban theorists and geographers such as Henry Lefebvre is not enough anymore, as they understood spatiality through our physical bodies. In Video games, a spatiality that is not understood at the point of code and algorithm will not be open to our resistance. Therefore, it is important to have a

2 The term is introduced by Nicholas Mirzoeff in his 2011 book The Right to Look: A Counterhistory of Visuality. Visuality is an apparatus of surveillance and domination that was implemented by the western to legitimize their practices of surveillance colonialism argues.

3 Procedurality is the ability of digital systems (e.g. computers) to execute a series of rules that is bound to its algorithm.

hold over code to have true resistance and democratic participation and engagement in making the gamespace.

The production of this cycle took place at the TAG Centre, Concordia University, during a 9-month research stay with Prof. Rilla Khaled. I have dedicated my stay to learning, understanding and dissecting the coding languages commonly used in game development, such as C# and game engine interfaces like Unity. Building on the conclusions of my first and second cycles, I developed a video game titled *Return to Sender*. (the article carries the same name also) The video game narrative benefited from the spatial strategies and tactics retrieved from the first cycle. *Return to Sender* provides a counter-narrative to the biased stories from my second cycle that stand on the side of the police and visualize protesters as irrational.

Methods, Tools, and Cases

I follow a qualitative deductive methodology relying on critical, anti-colonial, and intersectional knowledge. It relies on three concrete methodologies:

1. Research-creation:

Claiming is an active act of making that aims to change and disturb the status quo. To lay a claim over gamespaces, I indulged myself in a research-creation praxis that generated a prototype in the form of a video game. Research creation is a practice-based methodological approach that focuses on making and its process as a means of generating new knowledge. The Social Sciences and Humanities Research Council funding agency of Canada defines it as a creative combination of academic research practices to support "the development of knowledge and innovation through artistic expression, scholarly investigation, and experimentation." (SSHRC, 2012) Research Through Design (RTD) or PhD by Design (PbD) are all practice-based methodologies that correlate with research creation but carry different names depending on their geographical and academic context. (Frankel & Racine, 2010; Clemente et al., 2017; Van Reusel et al., 2021 and Prochner & Godin, 2022)

Research creation methodologies are commonly used in Québec, Switzerland, and France. (Lelièvre, 2018) This may partly explain my inclination to apply it since the University of Liège (where I am conducting my PhD) and Concordia University (the

space of my research stay) are located within francophone communities. My interest in using research creation lies in the flexibility the methodology offers. Similar to PhD. by Design, "there is no set format...of what an orthodox thesis of this kind ought to look like." (Fraser, 2013, p.116) Alike grounded theory, research-creation also entails an iterative nature in which research and creation inform each other in a cyclical process (Sadati & Mitchell 2021).

Applying *procedurality* as a method to read gamespaces in cycle two let me realize the necessity to dissect the code that constitutes the gamespace itself. Learning how to write code during my creation process entailed a process of "un-learning" presuppositions taken for granted by the systems that produce or support this code. (e.g., that the default values and information provided by the Unity game engine favour the representation of a police officer rather than an aggrieved protester). Although I expose my research-creation process in the third cycle, I consider the research conducted in my first and second cycles part of my research-creation project. Since I wrote the first draft I wrote in 2016, I intended to conduct an action-research project' on making games for protests.

2. Multiple Case Studies:

The multiple case study methodology was very useful for this research because there is a rich library of video games that has either similar claims to mine or has been complicit with the politics I am critiquing. The modes of comparison have changed and evolved depending on each cycle. In *Videogames and Protests: Recalibrating spatial literacy in the gamespace*, my comparison apparatus is the actual space of protest and its relation to the gamespace, which have also defined my choice criteria. The cases were compared using three analytical lenses: Representation, spatiality, and pedagogy.

In *Playing, Mapping, and Power: A Critical Analysis of Using Minecraft in Spatial Design*, I compare the methods of using the gamespace as a space for making during participatory practices. The available data impacted my choice criteria for each project and whether the project was executed from the design phase, which included the use of *Minecraft* to the construction phase. My analytical lenses in this article had a spatial and player lens. The comparative instrument in the fourth article *Mapping Algorithmic Injustices and Code Policing in the Gamespace* confronts forms of playful protest and

participation from the lens of 'Visuality' proposed by Nicholas Mirzoeff in his 2011 book *The right to look: A counter-history of Visuality*.

3. Positionality and Reflexivity:

Positionality is the result of feminist science studies that emerged in the 1970s, which offered a critique of scientific neutrality. The 'situated positioning' of Donna Haraway (1988) and the 'feminist standpoint perspective' of Sandra Harding (2004) induced an epistemological shift in our understanding of knowledge production. Charmaz's vision of grounded theory also moves closer to reflexivity and standpoint epistemologies as she understands both data and analysis as "social constructions that reflect the conditions of their production," Which means that the research processes we construct occur "under pre-existing structural conditions, arise in emergent situations, and are influenced by the researcher's perspectives privileges, positions, interactions, and geographical locations." (2014, p. 240)

Reflexivity "requires acknowledging one's own intellectual autobiography so that one can then critique and unpack how this may have influenced the construction of knowledge." (Pini 2004) For me, this meant acknowledging my position as a practicing architect, which necessitates dissecting the influence of western thought in my architectural training. In chapter 5, titled *Return to Sender,* I acknowledge the authoritarian influence of the architectural curriculum on my design decisions. This influence has caused tensions between my desire as an architect to design gamespaces that privilege spatial hegemonic domination (e.g., using the view from above) and abolishing police presence from the gamespace to advance my social justice agenda.

In this thesis, I situate myself on the marginal side of the story; stories of oppressed and dispossessed communities who lost access to the public space while seeking social justice. I look at the case studies from my position as an architect coming from a developing country, who is seen as the "diverse" body (Ahmed, 2012) in a European institution and has the chance to engage with actual spaces of protest. My political interest stems from the feminist 'standpoint' theory arguing that mainstream science does not offer neutral knowledge and stands against the assumption that political interest harm scientific production. (Harding, 2004)

This thesis combines different collection methods. Some Cases benefited from 'netnographic' techniques. An internet ethnography research method that deals with digital artifacts such as drawings, photography, and audiovisual presentations. (Kozinets, 2015) This method was necessary for situations where official data were missing or lacking, and all my trials to get in touch with the authors failed. I applied 'netnography' by visiting the different social media groups to track projects' timelines and follow the progress of their different phases.

Besides reports and archival data, I conducted online interviews with architects and urban designers implicated in playful urban interventions. The choice of interviewing architects and urban designers over players was to touch on a forgotten spot in participatory projects, the 'design process.' Most of the literature on video games and participation either focuses on the player or the resulting product, and both elements can conceal the hierarchal problems in these projects. By interviewing architects and designers who developed the architectural drawings and applied for UN funds, it was possible to understand the entire process and its problems (e.g., that player's participation in a more than one-year project may not exceed a couple of days and that UN-Habitat requires marginalized communities, who cannot afford to have computers, to use *Minecraft* in order to get funds).

Finally, this thesis is structured into separate papers. It is a six-year project that includes different iterations and cycles. I have made every effort to update and fact-check before writing these papers; nevertheless, the long span between publications may lead to some disparity and repetition. The articles are not necessarily interwoven as in a book dissertation. Nonetheless, I have structured this dissertation and its articles to tell a story woven and connected in one context, organized in a rational order that guides the reader through the progression of my ideas developed over the past six years. Each chapter will be based on a published article, an article currently in review, or an article expected to be published within the following year.

Spatial Guide To Protest: A Literature Survey

This doctoral project is a continuation of my master's thesis that I conducted and defended at the University of Liège between 2016 and 2018. The project aimed to investigate dynamic relations between protesters and the built environment. In particular, the strategies and tactics used to negotiate time and space during intense mass demonstrations. It also aimed to analyze the role of architecture during a mass protest and how intentional and unintentional design decisions can affect the core human right, the right to public space, during civil unrest. Since public spaces -and space in general- can act as a tool of oppression. (Yiftakhil 1998) Oppressive authorities employ tangible and intangible strategies to prevent protesters from reoccupying spaces of dissent by seizing control over the public space. Their claim to keep order and functionality of space has led them to use police brutality and impose urban interventions such as walls and guarded gates. In addition, they erase all artworks and memorials related to protesters to rub out the visual remembrance from the place to eradicate any reminder of the power once obtained by the citizens.

Then, the power exerted against protesters starts with the first line in the city's blueprint, yet every move by the body of protest exerts alteration to set patterns of the urban. One important feature of social control on a planning level is its subtlety. Authorities will never declare that some urban interventions or transformations are addressing protests. This is why planning control remains embodied within the system (Lewi and Wickham, 1996). The goal of my master's thesis was to expose power in its materialized form within the city to understand how the city's physical layout shapes the state's or protest's power. The research mapped the strategies and tactics in the space of protest, on both the micro and the macro level, from the actions of protesters as well as those done by the police. By the macro scale, I mean strategies on a planning scale that need a span of time to be applied and that might have a lasting consequence on protest. I analyze strategies and tactics applied on the micro-scale that temporarily affect spaces of discontent. The aim is to provide a spatial guide to understand the authorities' mindset. I believe that providing such information can serve as a "pedagogy of the oppressed" (Thompson, 2006).

In the following part, I present a selection of visual guide for police and protest's different strategies and tactics:

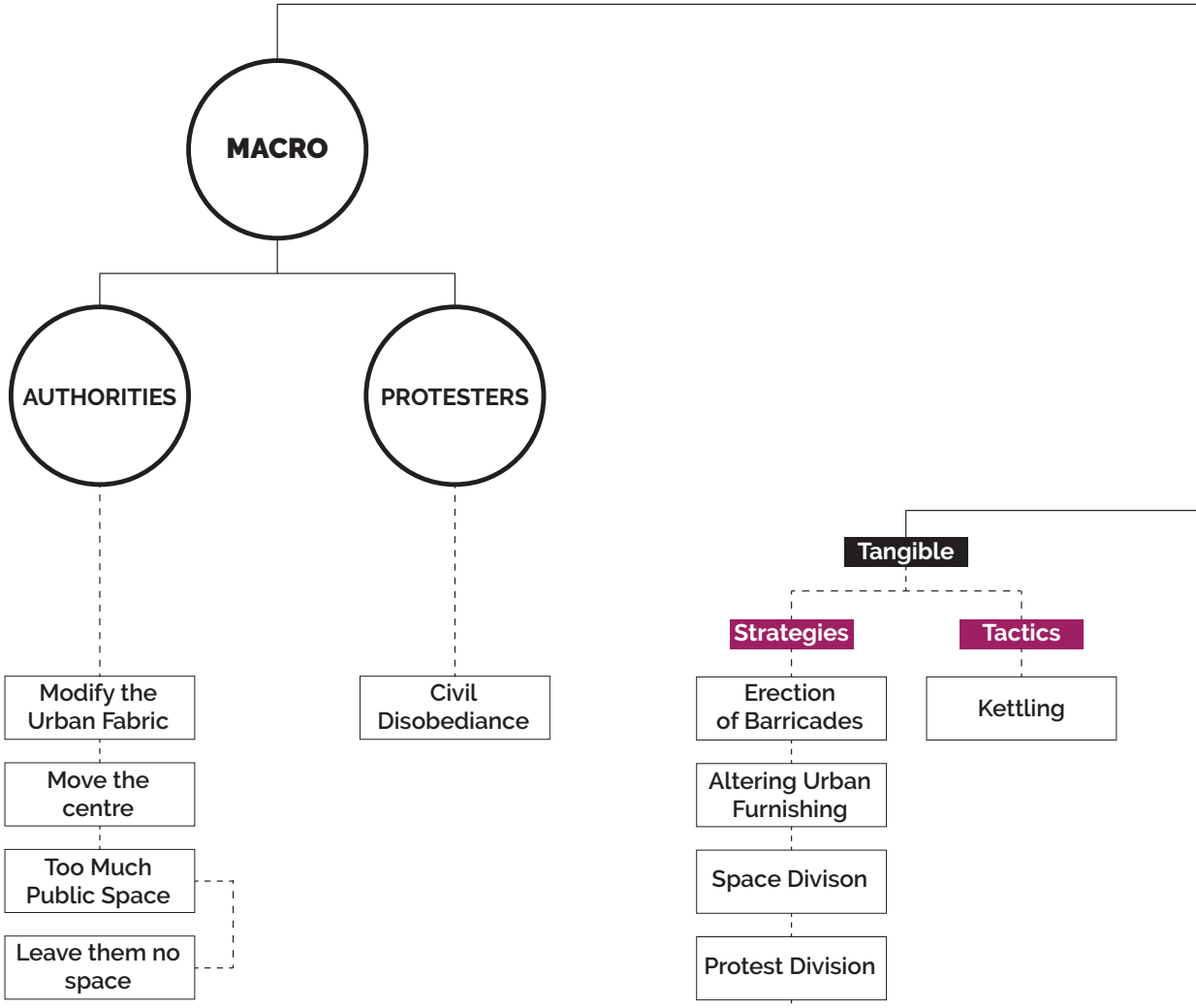
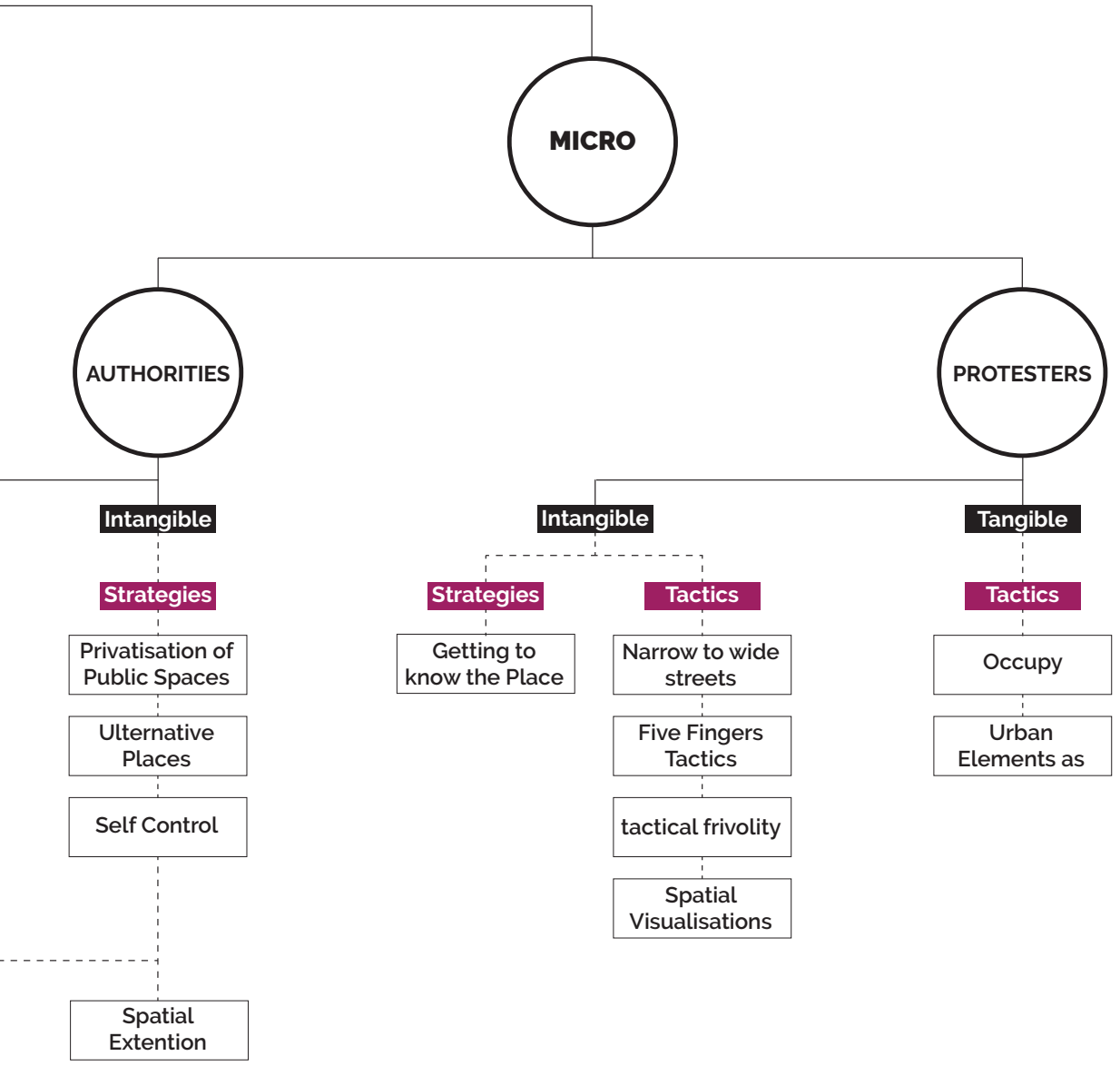
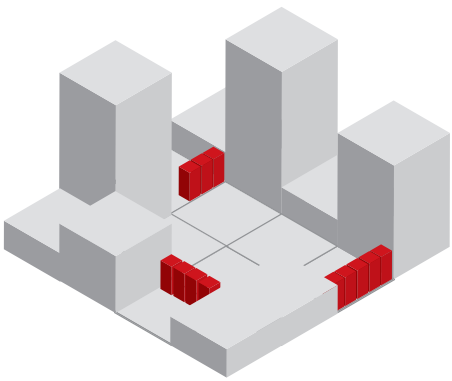


Figure 4: Structure of the spatial guide to protest on the macro and the micro level, illustrated by the researcher.


MICRO
AUTHORITIES
PROTESTERS
Intangible
Intangible
Tangible
Strategies
Strategies
Tactics
Tactics
Privatisation of Public Spaces
Ulternative Places
Self Control
Spatial Extention
Getting to know the Place
Narrow to wide streets
Five Fingers Tactics
tactical frivolity
Spatial Visualisations
Occupy
Urban Elements as

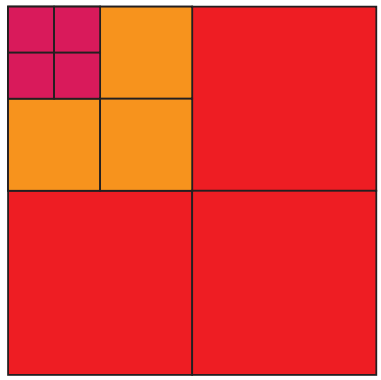
Police Strategies



1. BARRICADES' ERECTION

Police tend to use barricades to draw a separation line separating them from angry citizens. By barricade I mean any form of materiality that has a vertical dimension, from metal fences to concrete walls. Scholl is offering an interesting interpretation: “a barricade demarcates two sides. Barricades separate social forces and help to convert politics into an antagonistic process, where people have to choose sides” (Scholl, 2012). For authorities, barricades act as a temporarily representation for their bodies in the space. As Knut Abramowski, the chief of police (Polizeiführer) of the special police department Kavala, made it clear “If we did not have the technical barrier, we would have to put at every meter one police officer. This would mean employing 36,000 officers in shift service” (Scholl, 2012). The barricade gives police time to react. In addition, barricades can also be used to separate and isolate zones, thus separating protesters.

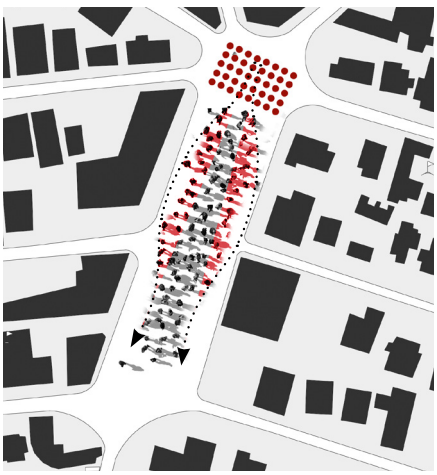
In November 2012, authorities in Egypt erected more than six concrete walls (Figure 2.10) in the area surrounding Tahrir square (Serag, 2013) in a trial to prevent what happened in 2011 to be repeated again: the convergence of the crowd cutting their way through the different streets surrounding Tahrir which makes them uncontrollable. The barricades were around 3-meter-high, from wall to wall, completely blocking the street. These barricades also served as a defensible shield to isolate the governmental buildings from the crowds, neglecting by this the residents and shop owners needs who got blocked between the walls.



2. SPACE DIVISON

In his essay Panopticism, Foucault highlights the innovative strategy -by that time- to control the plague. Spread during the 13th century in Europe, authorities used the urban to get a grip on it. Given the impossibility to evacuate an entire town, quarantine system was invented. The space of the affected town was divided into smaller sections. “the isolation of this separated space results in containment” (Scholl, 2012). In Foucault words: “It is not exclusion but quarantine. It is not a question of driving out individuals but rather of establishing and fixing them, of giving them their own place, of assigning places and of defining presences and subdivided presences. Not rejection but inclusion”. (Foucault, 2007, P45-7)

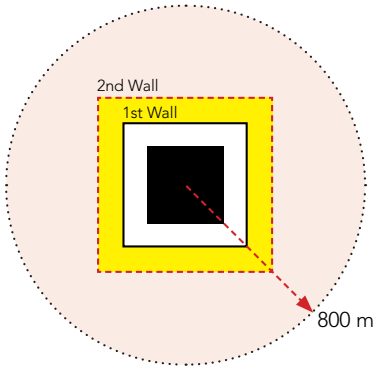
“What is fascinating about the plague town is the way the urban form is recruited into this discourse in an exceptionally ‘soft way.” (Lepetic, 2013). In contemporary societies, authorities and people in power tend to use this strategy within the urban space to make sure that the territory remains subject to state power. Police used space division strategy to control protesters during the wall street occupy movement in 2011. Police have created four different zones with different levels of preparedness.



3. KETTLING

Space division strategy has different manifestations, one of which is Kettling. Kettling is a police tactic to encircle protesters. This tactic brings the notion of street width. Protesters have the priority to push police back in narrow streets. Since their numbers are alawys higher than the police, protesters generate a non-violence bodily force that surpassed the police applied tactics. Police need wider roads in order to apply their tactis. In wider streets, the balance of power may shift.

Kettling is usually applied in open spaces or wide streets: police prevent crowd walking in the sidewalks, which give the police the ability to surround, isolate, contain and incapacitate protesters. It is a tactic more than a strategy since it usually depends on the performance of the crowd and its density. Kettling has been widely used by police to neutrlise and control bodies. The example shown on the right shows how police try to prevent protesters from walking on streets' sides, to be able to encircle them.

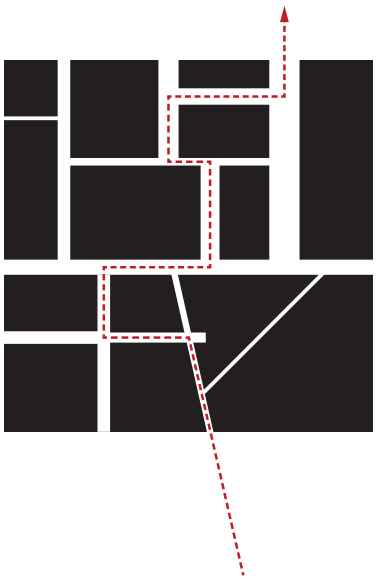


4. SPATIAL EXTENTION

Assembly near governmental and state buildings –for a protest event or not- is usually unwelcomed. A fence or a wall usually surround these buildings. However, with the recent protest movements, authorities are using similar techniques of medieval fortified cities: extending the prohibited area surrounding these buildings in both tangible and intangible ways. By tangible I mean the creation of a second wall in front of the first one as a second line of defence in front of protesters (Figure 2.25). From an intangible dimension, authorities settle laws that deny access to any government institution, or presidential or diplomatic bodies, within a specified minimum distance. Similar to what happened in Egypt. In 2016, During the Land Protest, a new law was settled by the interior ministry that prohibits access to any government institution, or presidential or diplomatic bodies, a minimum distance of 800 meters.

Figure 5: A concrete barricade in front of the central bank in Egypt, 2015. Courtesy of: Léopold Lambert.

Protesters Tactics

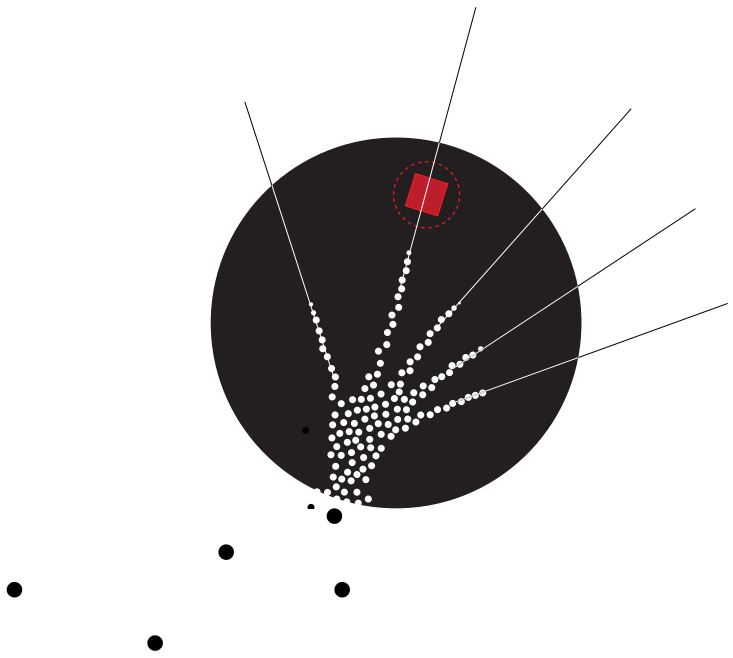


1. NARROW TO WIDE

"Please, do not imprison yourselves in the square..." (Leaflet: How to protest Intelligently, 2011)

This Tactic requires to start from the city alleyways and pour in into larger street until the destination point. Benefits are numerous: 1. It gives a sense of momentum and confidence since small streets give the impression of a growing crowd. 2. Feed up the march. As Meier states “People are likely neighbours and join because they see their friend out in the street.” (Meier, 2011) 3. Restrain the effectiveness of police strategies. As mentioned in the first part in this chapter, narrow streets give more advantage to protesters than police (Figure 2.33).

This tactic also brings the notion of the open and closed crowd proposed by Canetti. For Canetti , an open crowd is a crowd that has the potential to grow (Canetti, 1960). However, a closed crowd is a crowd defined by exterior boundaries. These boundaries could be static [buildings, walls, barricades] or even dynamic [Police kittling].



2. FIVE FINGERS TACTICS

The five-finger tactic is usually used in large open spaces, it was successfully used in cases of Heiligendamm summit protest in Germany 2007 order to disrupt major meetings of the global elite. This tactic is also known as “decentralised swarming”, means to converge on a target from multiple directions (Scholl, 2012).

Scholl describe the protest in which he took part as follows:

“The 5,000 people strong march that left the camp in Reddelich soon encountered a police line blocking the way. In this moment, people did what had been practiced during the previous days: they split according to pre-established 'fingers' and this way trickled the police line.” (Scholl, 2012)

In the course of the summit protest, this move was repeated several times in the walk through forests, fields, and on countryside roads, until all the fingers then re-joined on the spot that protesters chose for the sit-in blockade. This tactic forced the police to stretch their lines in a trial to prevent protesters from circumventing them, which automatically created space for others to pass in between them. (Scholl 2012)

3. THE VIEW FROM ABOVE

If authorities and urban planning took over our Parisian barricades, protesters were, on the other side, able to use the view from above to develop strategies either using a physical or a digital map.

The leaflet is a common tactic used by protesters to communicate the diversity of tactics that can be implemented during protest. A great example is the pamphlet distributed few days before the 2011 revolution in Egypt: How to protest intelligently, offering a diversity of tactics, some of them have a spatial aspect as the one mentioned in the research *from narrow to wide streets*.

On the other side, protesters in the UK and Hong Kong have benefited the advancement of cyberspace technology and have utilised virtual platforms to create a mobile application as a tool of communication that is more interactive and spatially representative. The apps utilise the power of crowdsourcing to help protesters in avoiding to be kettled by the police. Protesters share the location of officers and barricades via the app. The apps uses digital maps to visualise these data.

Figure 6: A screenshot of Google Map. The arrows on the map aim to advise protesters how to navigate the space. From the 2011 leaflet "How to Protest Intellgently" Credit: Anonymous Author

Chapter 1

What is the Gamespace?

This article lays connections between architecture theory and practice, game-making and studies, and urban space. The text is divided into four parts. The first part offers a reading of the gamespace from an architectural lens and its impact on each discipline. Theories developed by game scholars using architectural and spatial concepts to make sense of the moving image in a videogame are developed in the second part. The third part focuses on the relation between the space inside the screen and the space of play by bringing Henry Lefebvre's theories on the production of space. In the last part, we investigate the problematic impact of using simulation techniques to develop existing cities in the gamespace. Ultimately, the article calls on players to continuously revisit game codes and be aware of the position of our spatial agency over the game narrative to avoid being trapped in capitalist or new-colonial narratives.

A peer-reviewed version of this chapter is written in French in collaboration with Rosane Lebreton. The article is titled 'Architecture de l'Espace Vidéoludique' and will published in the 2nd edition of the Liege Game Lab's book: Culture vidéoludique, published by Presses Universitaires de Liège.

Architecture of Videogame Spaces

Video games share close links with architecture, which led Henry Jenkins to propose in 2002 to see video games, not as a cultural object close to cinema but as "a spatial art with its roots in architecture, landscape painting, sculpture, gardening, or amusement park design [...]" (Jenkins & Kurt 2002) The two practices indeed intersect occasionally and reveal mutual influences. We could summarize the cross inspirations of architecture and video games through two main characteristics: the relationship to play on the one hand, and the relationship to technology on the other.

1. Video Games and Architecture as Spatial Design Practices: Cross-Perspectives

Play is part of the current vocabulary of architects. We can think of Le Corbusier, who understood architecture as "the masterly, correct, and magnificent play of masses brought together in light." (Le Corbusier, 2013/1931, p.29/p.19) But it was between the 1950s and 1980s that architects appropriated the term to rethink their ways of designing. Architect David Malaud (2018) proposes a matrix of four playing rules or categories[1] through four architectural projects to describe this playful period.

The first category is the disorientation of the labyrinth represented through the 'New Babylon,' an imaginary city conceived by artist Constant Nieuwenhuys following the concept of unitary urbanism proposed by the Situationist. Malaud links the second category to simulation and symbolic play by looking at architect Aldo Rossi's *Teatro del Mondo*, a temporary floating theatre exhibited for the 1980 Venice Biennale in a symbolic reference to the Venetian carnival. The third category is construction games which can be seen in the *Fun Palace*, an interactive and adaptable educational complex designed by Architect Cédric Price in 1964. The last category is competition and strategic play, which can be found in the

1 These rules were originally inspired from the four categories of play proposed by French sociologist Roger Caillois in 1967. These categories are the agôn (competition), aléa (games of chance), mimicry (role-playing) and ilinx (vertigo).

World Game, a card game developed by architect Buckminster Fuller in 1960 about global problem-solving.

These four categories can be found in video games, which offer new meanings to architectural play. The SimCity series (Maxis, 1989-2013) are an example of strategy games oriented around city planning. In contemporary video games, such category can intersect with construction games like Minecraft (Mojang, 2011) or simulation games like *The Sims* series (Maxis, 2000-2022.) Labyrinth is found in many video games, from *Pacman* (Namco, 1980) to modern FPS (First-Person Shooter) inspired by *Doom.* (Id Software, 1993) Video games can also be considered sources of inspiration for new playful attitudes for architects. For example, we can cite the approach of the You+Pea studio, which sees in video games a new way of questioning architecture and urban planning through the possibility of experimenting with radical and non-normative projects such as those of Archigram and Superstudio.[2]

Another important link between architecture and video games is the juxtaposition of modes of representation between the two disciplines. Architect Fabien Duchene (2020) notes how the representation of space in video games can be traced over the architect's various representation tools: the plan, the section, the axonometry, the perspective, etc. Certain digital tools developed for video games are taken over by architects, and the software used for game design and the visualization of architecture drawings are increasingly getting similar in their interface design. But the links between the two practices are not limited to software and technology. City building games or sandbox games such as *Minecraft* are used as schematic architectural tools in participatory urban design projects. On the other hand, architects, historian architects and landscape designers are integrated into the video game design process, as in the making of *The Witness* (Thekla Inc., 2016), *LuminoCity* (State of Play Games, 2014) or the *Assassin's Creed* series. (Ubisoft, 2007-2020)

Research dealing with architecture and video games is relatively recent. On the level of design, Steffen P. Walz brings architect Louis H. Sullivan's famous phrase "form ever follows function" to propose a model of functional architectural forms that shape the gamespace. Examples of these functional forms are the ability of architectural design to control player

2 Two collectives of avant-garde architects formed in the 1960s. To find out more about You+Pea's approach, see their website: https://www.youandpea.com/videogameurbanism. For more details on the link with Superstudio, see the article: Pearson Luke Caspar, ***From Superstudio to Super Mario***, available at: https://www.e-flux.com/architecture/becoming-digital/248078/from-superstudio-to-super-mario/ (visited on 23 January 2020). Luke Caspar Pearson is one of the founders of the You+Pea studio.

movement through boundaries and borders, its potential to orient or disorient players and its ability to oppose the player in a problem to solve. (Walz, 2010) The strong parallel between the two practices is also developed by Christopher W. Totten, a game designer who studied architecture, in *An Architectural Approach to Level Design*. (2019) The book aims to translate architectural concepts into level design[3] vocabulary by focusing on articulating space to orient the player in the game space.

On the academic level, the first collective work was published in 2007, titled *Space, Time, Play. Computer Games, architecture and urbanism: the next level*. (Von Borries & al, 2007) Nevertheless, researchers have been studying the question of the space of video games since the 1990s, a few years after home consoles became more popular. Since then, attention to the video game space has continued to increase, and researchers from different disciplines are questioning the structure and relationship of players to space and architecture in video games. Two collective works published in 2019 by publisher Transcript Verlag (Aarseth & Günzel, 2019 and Gerber & Götz, 2019) are the new witness to a paradigm shift that game scholar Stephan Günzel calls a "spatial turn" (2008) in video game research.

The first conclusion of the various studies on the video game space is its plurality. It is difficult to talk about the *space* in video games in general, and we must rather look at the *spaces* of video games. To talk more specifically about architecture in connection with video games, we have chosen to focus on three approaches to video game space: image space, player space and the space of the city.

2. Architecture in the Image

The question of space in the image of video games (Lebreton, 2021; 2022) has been at the center of many debates. How to think of a space inside an image? If space is what surrounds and incorporates us, and if architecture encompasses bodies, it doesn't seem easy to talk as much about one as the other in the case of video games. The first authors investigated the question of space in video games from a narrative perspective. In 1995, Henry Jenkins and Mary Fuller drew similarities between the narratives unfolded by video games and the grand tales of colonization written by the 16th and 17th centuries travellers. They note

3 In game-making, level design is the process through which game designers create the game spaces and maps using digital software and game engines such as Unity or Unreal Engine

that the narrative of the Japanese Nintendo video games series echoes the same methods of conquering and mastering space, which is manifested in the player's movement in the game space. (Jenkins & Fuller, 1995)

In 1998, Janet Murray proposed in her famous book *Hamlet on the Holodeck* space as one of the essential elements of video game narration (Murray, 1998). Shortly before, Celia Pearce (1997) introduced the term "narrative architecture," a term that Henry Jenkins (2004) would later develop into "environmental storytelling." Jenkins describes video game developers as "narrative architects." The narrative in video games does not only unfold linearly as in the case of a film or a book but also, above all, from space. Jenkins shows the importance of space in video game narratives through four forms of narration: evocative spaces (how the environment can evoke or refer to a fictional world), enacting stories (the impact of player's movement or player's exploration in the unfolding of the story), embedded narratives (the embedding of the player's story and the story told by the game) and emergent narratives. (The stories emerging from the game situation)

In parallel to the narrative approach, an understanding of space in the video game's image in audiovisual terms has also been developed. In 1997, Mark J. Wolf proposed one of the first models for understanding the space of video games, based on the pair of terms "on-screen space /off-screen space" taken from film studies (Wolf 1997). The developed model is mainly based on the evolution of technology, from game spaces visualized solely by written text to three-dimensional and mapped spaces, passing by the scrolling on an axis and the split-screen technique.

In 2005, during DiGRA's conference, Clara Fernández-Vara, José Pablo Zagal, and Michael Mateas proposed an alternative model by discussing Wolf's approach using concepts from cinema and highlighting the singularity of the gamespace. Nevertheless, they agree with Wolf in considering technology as one of the main constraints for representing video game spaces. They introduce the idea of a "gameplay cardinality" defined by "the number of axes (x, y, z) available to the player to make the entities move." (Fernández-Vara & al, 2005) They emphasize players' movements and propose categorizing them into discrete or limited movements and continuous or major ones. In this categorization, the movements on two axes (x and y) in the three-dimensional space of the video game Myst (Cyan Worlds, 1993) can, for example, be considered discrete or punctual. In contrast, the movements in FPS game spaces

such as Wolfenstein 3D are continuous.

Earlier to the 2005 DIGRA Conference and in 2003, Espen Aarseth, Solveig Marie Smedstad and Lise Sunnanå proposed movement as the primary criterion for analyzing space in the video game image in a way to circumvent the techno-historically centred approach. Out of nine classifications, they distinguish three spatial criteria; each includes two properties: perspective (omnipresent or vagrant's viewpoint), topography (Geometrical or topological) and environment (dynamic or static). In connection to the image in video games and the perspective view, the "omnipresent" viewpoint allows the player to examine the entire playing field – the induced relationship is that of an exterior manipulation of space, which we find in construction and top-down video games. Conversely, the "vagrant" viewpoint tends more towards an *embodied* viewpoint, in which the relationship to the game space is carried out through the mediation of a playable body. These include games allowing a so-called first- or third-person point of view. (Aarseth & al, 2003)

The space in the video game's image is closely linked with the player's movements. As a result, it becomes linked to the viewpoint adopted in said space which ties in with Katie Salen and Eric Zimmerman's argument that "space, it seems, is in the eye of the beholder." (2005) To understand this idea, we must consider video games as an image in which it is possible to have action. The video game's image is not only a moving image; it is a *performed* image (Bonhomme, 2013) or a *manipulable* image which cannot be thought of without the player's action. The perspective adopted in the video game image will generate different relationships to the space represented.

Building on Lev Manovich's work on linear perspective (2011), Media scholar Stephan Schwingeler argues that video games adapt and readjust the principles of linear perspective theorized by Renaissance painters. In doing so, video games follow painters and artists' quest for the faithful and realistic reproduction of space in an image. While Schwingeler (2019) proposes "arbitrary perspective" to specify players' ability to control the viewpoint, philosopher Patrice Maniglier (2010) uses the term "mobile perspective." In 3D video games, perspective is no longer unique and fixed but mobile. It allows an infinite possibility of viewpoints. When the player is left free to move the frame of the "imaginary camera" (Krichane, 2018), this mobility becomes subjective. Thus, the video game's image becomes an "image-space" through the player's gesture, according to Stephan Günzel's terms. (2019)

In this sense, the video game's image is not only the representation of a space, but also a space in which it is possible to move.

Then, the question that arises is about the nature of this space. To this question, researchers provide various answers, showing the wealth of current research on the subject. Aarseth proposed that these spaces are "allegories of space" (2001) which, coming up against the impossibility of an entirely *realistic* representation of space, must integrate deformations (abstractions of distances) or simplifications to be able to be played. The notions of *non-places*, developed by Marc Augé, and *heterotopia*, by Foucault, are also mentioned, among other thoughts, to define the nature of the gamespace (Claire & Emmanuelle, 2013 and Mukherjee, 2019). These ideas make it possible to underline the particularity of the video game spaces, which look like "other spaces," out of time, and characterized by the way in which one moves there.

But if the authors agree on the possibility of a space in the image, the question remains whether the space-image can be transformed into an image-place and an inhabited-image. This question is at the crossroads of two opposing discourses. On the one hand, the virtuality of the video game (as a digital space) would be an obstacle to its habitation, in the broad sense of *being* in an image. On the other hand, certain marketing and media discourses sell the possibility of immersion in the video game space. The question of inhabiting said space, thus, links research on the video game space and research on the avatar and the body represented on the screen, particularly through the notions of presence and being-in-the-world.

Several authors postulate, based on the Practice of Everyday Life by Michel de Certeau (1984), that the practice of space – in this case, the actions carried out in the game – would make it possible to transform this space into a place and inhabited space. Game scholars are looking at a broader acceptance of inhabiting it, with the idea of a "presence in the world of play." As Julie Delbouille (2019) proposes in her thesis, being present in the world of play is to be able to interact with the space, move there, and practice the place by carrying out actions, by walking through the bias of the avatar[4].

Finally, to understand the relationship between the space in the image and the player's space (the environment that encircles the player), the philosopher Elsa Boyer worked with Edmund Husserl on what she calls the conflict of perceptions. (2015) This conflict is born of the

4 For more reading on the topic, check the work of Christophe Duret (2019) and Daniel Vella (2019).

simultaneity of the player's space perception and that of the space in the image. It entails a spatial character about the juxtaposition of two spaces, which are perceived simultaneously and are not overlapped. Thus, the space in the videogame image would not be an illusion but an artificial perception or even a "constructed hallucination." (Boyer, 2015, p.171) The idea of juxtaposing two spaces indicates that the player's space does not disappear in the practice of video games. It is not forgotten or set aside in favour of an *immersion* in the video game's image. It is to this space that we will now turn.

3. Player's Space: A Socio-Spatial Perspective

How can we define the relationship between the player's space and the image-space? Are they separate, liminal, or coupled? Is the physicality of space the only factor that defines how a game can be played? What about the body that inhabits this space? How can the social and cultural context or players' behaviours impact where and how a video game is practiced? From Hannah Arendt's writing on the space of appearance in 1951 to Henri Lefebvre's writing on the social space in the seventies, the question of space and its relation to the body induced a debate in social and philosophical inquiries. Contemporary scholars in game studies built on said debate to address the layered relation between the game space and the player's space.

Nitsche (2008) argued that players' socio-spatial behaviour transfers from physical to virtual environments, which -according to him- adds immense complexity to the game space. In parallel, Thierry Joliveau (2012) argues that, based on *Grand Theft Auto IV* (Rockstar Games, 1997-2021)*, Assassin's Creed* series *and Driver San Francisco's* (Ubisoft, 2011) analysis, video game spaces prolong the *real* space than opposing it. Castronova (2008) asserts that players of video games inevitably transfer their behavioural patterns and attitudes outside Huizinga's magic circle. His definition looks at the video game border as a "porous membrane" rather than a solid one. This porousness allows the players to step in and out of the circle, bringing their real-life experiences and personal histories to the game.

To bring together the complex relationship between the game space and the player's space, game scholars adopted Henry Lefebvre's writings on the production of social spaces. Originally, Lefebvre proposed his theory of space -in response- to reject prior definitions that consider space as a neutral container or medium. He argued that space is a social product that can be perceived through the engagement of three dimensions: the physical (perceived), the

mental (conceived) and the social (lived). He insisted on the necessity of space to be *occupied* by the body (1992, p.171). The influence of Henry Lefebvre is distinguishable in spatial, geography and postcolonial studies[5].

While in game studies, Espen Aarseth (2001) was one of the earliest scholars to link Lefebvre's triad to video games. However, as Flynn (2007) notes, his definition overlooked the social and cultural forces that can affect player engagement. As seen in figure 01, several authors, such as Axel Stockburger (2006), Nitsche (2008) and Rufat and Ter Minassian (2011), have suggested different triad models that consider the social aspect. Integrating Lefebvre's[6] theories on the presence of the body and its role in the production of space were significantly helpful for game scholars to highlight the influence of the player's physical space on the game space. However, is tearing Lefebvre's project from its political context[7], which is understanding the crisis-tendencies of modern capitalism through the production of space, and taxonomizing his work into its triangulation method, a method that he had originally employed as a strategy against binary thinking about space and place to avoid the temporal logic associated with both Hegelian and Marxist dialectics (Unwin, 2004), is the proper method to theoretically understand or define the game space?

We wonder if Lefebvre's agenda is better served more by looking at his aim for spatial justice and less by fixating on trilogies as the deep implication of video games in social space and spatial justice is uncontested. We can witness such implications in the already established connection between video games and protests in the public space. As part of popular culture, video games were present in the context of contemporary protest. To start with, the digital space was the house of several virtual protests, from the 2007 IBM workers' protest in *Second Life* (Linden Lab, 2003) to the 2020 Hong Kong protest in *Animal Crossing* (Nintendo, 2020).

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5 In spatial studies, check the work of Don Mitchel, the work of Edward Soja in post-colonial studies and David Harvey in urban geography.

6 Lefebvre's famous triad was written in his 1974 French book, The production of Space. The first English translation was published in 1991. According to Edward Soja, it is the English translation who revived the attention to Lefebvre's social project and agenda.

7 Even Aarseth himself, at the beginning of his article "Allegories of Space", was reluctant to "map" Lefebvre's theory of space onto computer games. Also check the critical work of CRAWFORD Gerry, «Is it in the Game? Reconsidering play spaces, game definitions, theming, and sports videogames», ***Games and Culture***, 2015, Vol 10, no° 6, pp. 571-592. As well as FRASER Benjamin, «Why the spatial epistemology of the video game matters: Metis, video game space and interdisciplinary theory», ***Journal of Gaming & Virtual Worlds***, 2011, Vol. 3, no° 2, pp. 93-106.

Moreover, during the 2019 Hong Kong events, protesters hijacked the *Pokémon Go* (Niantic, 2016) interface -even temporarily- to disrupt the controlled and spatially restrained spaces. (Davies, 2020) In Egypt, during the 2011 revolution and the 2013 Gezi Park protests in Turkey, protesters would use terms such as "beast mode, game over, we faced the monster, or It's six stars now. Now the tanks will come[8]" to describe their situations. This shows how video game interaction has helped explain a critical mass situation. Finding the vocabulary for such exceptional moments in history in video games means that the space of protest at this crucial moment has shared social, cultural, and political characteristics with the space of video games.

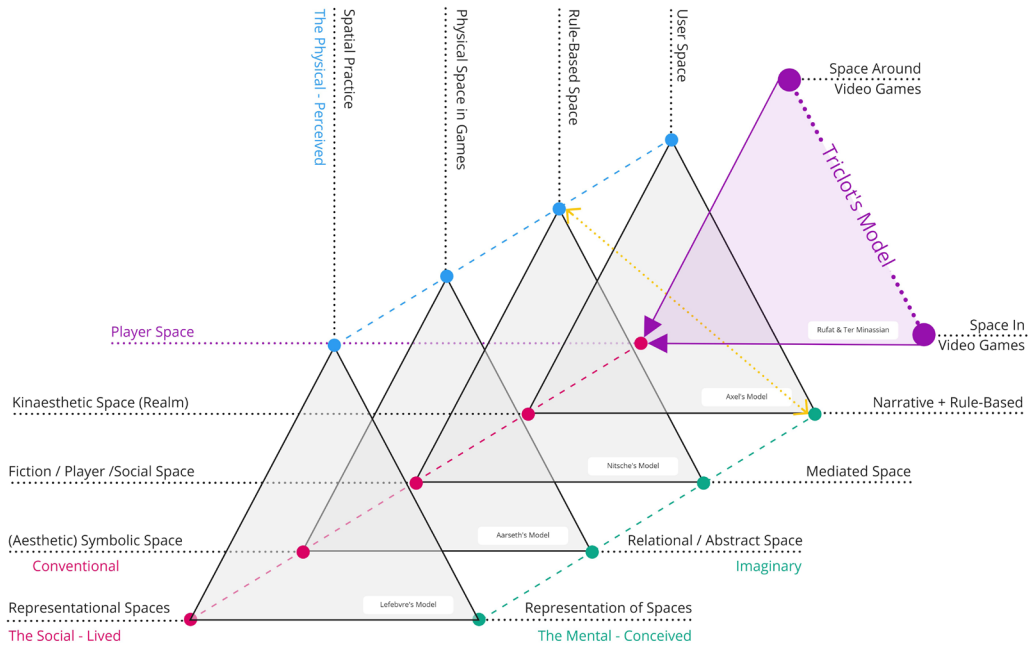

Figure 7: An abstract visual that explains the different associations of scholars' spatial models to the Lefebvrian model. Axel Stockburger and Nitsche's definitions have considered the physical presence of the body in the space of play. Whereas each of them associated different plans and models with a different dimension in Lefebvre's triad, both have associated the player's physical space with Lefebvre's "lived space." In contrast to Aarseth, who considered the lived space as a "symbolic imagery with a primarily aesthetic purpose," Stockburger's thirdspace is the realm constituted by the players' kinesthetic actions. Nitsche considers the thirdspace as the combination of the fictional space, the player space, and the social space. Rufat and Ter Minassian did not directly link their model to Lefebvre's triad. However, they make use of the same triangulation method to define their spatial system by attaching a third layer, "player space," to Mathieu Triclot's (2012) duality of "space in the game" and "space around the game."

8 "It's six stars now. Now the tanks will come" This phrase is inspired from the video game Grand Theft Auto. (GTA)

4. Simulate City Spaces; Simulate Spatial Injustices

In his seminal book Philosophie des jeux vidéo, Mathieu Triclot explains how the video game moved from the space of the university and the shopping center to the family living room. The previous example of protest adds a fourth spatial dimension: that of the space of the city. Indeed, it isn't easy to talk about architecture and video games without mentioning the theme of the city and the urban and how they have become an integral part of video games.

The evolution of the theme of cities in video games was marked by the famous game SimCity (Maxis, 1989), which became the seminal work for the city simulation genre. Like City Life (Monte Cristo, 2006) and Cities: Skylines (Colossal Order, 2015), the SimCity series aimed at modelling the behaviour of a real city on the computer. Rufat & Ter Minassian (2011) point out that even though SimCity and City Life are graphically similar, both are based on very different spatial logics: SimCity advocates polycentric urban development while City Life promotes the centrality and hierarchy of neighbourhoods. In fact, what SimCity encourages its players to build is a hierarchical, technocratic, and North American city. Similarly, Dyer-Witheford and De Peuter (2009) argue that the way cities in the Grand Theft Auto series (GTA) constitute their politics of space reproduces neoliberal urbanism, racialized spaces as well as systems of spatial segregation as in the in-game cities of Vice City, San Andreas, and Liberty City.

The reason why SimCity series or GTA series is produced in that way is that it derives from a physical space that is full of spatial injustice. Such injustice can be justified by looking at the unjust geographic distribution of PokéStops in the location-based game Pokémon-Go in disadvantaged neighbourhoods. The distribution of the in-game items in location-based games such as Pokémon-Go relies on an algorithm that is mostly tied to Google Maps' algorithm or, later, Open Street Map. (OSM) These digital platforms are biased and favour certain places over others, which makes the gaming experience unjust. Likewise, in empire-themed video games such as the Civilization series (Sid Meier, 1991-2019) in which playing the map is tied to its narrative experience, it is inevitable not to associate virtual world exploration with colonialist explorations, which turn the gamer into a colonizer who surveys and controls unknown territories. This phenomenon pushed some researchers to question the mechanisms at work in enjoying empire-themed play experiences. (Lammes, 2003 & Harrer, 2018)

Unlike SimCity's limited simulated experience, Sandbox video games such as Minecraft promote its unlimited capacities. Mojang Studios, the game developer, has employed the freedom of built the game offer as a design and a communication medium in participatory urban planning workshops52F . Nevertheless, either the participatory workshops or the game itself, can bring a set of accessibility limitations to the player and the community. (Bashandy, 2019) In participatory workshops, institutional forces (city council, non-governmental organizations, or spatial professionals) can prevent true access to space-making. Minecraft can bring in an additional space of exclusion with the needed hardware often unavailable in the communities they presume to serve and the colonial and restrictive origins of the game space itself. (Dooghan, 2019 and Ligia & al, 2019)

Such injustices have pushed some game makers to dissect the existing game models' representation of space and cities and to provide alternative models of our contemporary cities. Among the popular game titles are Nova Alea (Molleindustria, 2016) and Lichena (Molleindustria, 2019). The first, Nova Alea, is about real estate speculation, housing bubbles, gentrification and the capitalist forces shaping our cities. The second, Lichena, is an abstract city-building game about climate change, polluted landscapes and ruined cities. Paolo Pedercini, the founder of Molleindustria, publishes both games. And both are presented in the Playable Cities project as a series of Marxist realist alternatives to SimCity. These titles demonstrate video games and digital simulation capacity to act as a tool to critique cities' political, economic, and societal systems.

Eventually, the SimCity series and city simulation games, in general, are compelling examples that show that simulation has its limits since it tends to represent a preordained and predetermined experience that dominantly illustrates the point of view of its makers and the spatial environment in which it was developed. Expanding the gameplay spatial experience by integrating digital maps' algorithms (as in Pokémon Go) or implementing procedural generation techniques (as in Minecraft) do not exempt game makers from their ethical responsibility towards the written code and the spaces they generate. As players, we shall always revisit these codes and be aware of the position of our spatial agency over the game narrative.

Chapter 2

How do we Learn from the Gamespace?

This article proposes an analysis of the links between the virtual space of video games and the physical spaces of protest. The recent movements elucidate the importance of spatial understanding by the protesters or the police to occupy or control a contested space. Recently and in response to the mass protests, many game makers and activists have developed video games to support protesters in their quest for justice. This research argues that gamespace can offer social movements a way to actualize their collective consciousness and act as a tool of spatial literacy. Therefore, this research poses two questions: Does the existing library contain games that consider the role space plays in protests? Moreover, are the game makers aware of the spatial dimension when building their games? To answer the research questions, we start by defining spatial literacy as the level of spatial awareness and spatial engagement that a game can comprise. Using three analytical lenses: Representation, spatiality, and pedagogy, this research studies three cases that engage with gameplay, protest, and the city. The Three cases are 1979 Revolution: Black Friday (2016), OccupyGezi (2013) et Riot: Civil Unrest (2019). The research concluded that game makers were partially aware of the spatial dimension of a protest. Still, they failed to interweave the constructed spaces with the game narrative and engage players in the game space, and consequently, the presented games fall short in acting as a tool for spatial literacy. Although the present cases mostly neglected the spatial dimension, this research still believes in the potential of the gamespace to act as a tool for spatial literacy; thus, we propose the integration of geospatial technologies in the construction of gamespaces in the hope that they can serve as a spatial literacy tool for protesters.

A peer reviewed version of this chapter was published in French in collaboration with Pierre Hallot and Björn-Olav Dozo in L'urbanisme, l'architecture et le jeu vidéo, Revue Géographie et Culture, 12/2019. The article is titled "Jeux vidéo et protestations civiques et politiques : Développer la littératie spatiale des manifestants urbains grâce au jeu vidéo ?"

Videogames and Protests: Recalibrating Spatial Literacy in the Gamespace

1. Introduction

By the start of the new millennium, the world has seen people take their demand for justice to public spaces in Egypt, Tunisia, Hong Kong, New York, and many more places. They redefined the space to be a political actor (notably by thematizing it with the notion of "occupation") and claimed ownership of it. The existence of new media leads to new definitions of places; it rendered these places even more complex with maps of tweets and Facebook events, adding a new layer of located virtuality to the geographic identity of places. Alongside these events, game designers, amateurs, and activists created video games around the theme of civic and political protest. They mobilize video game platforms to simulate spaces of protest and urban demonstration.

This article aims to analyze three video games developed to serve as a simulation ground for protests. We wish to contribute to the debate on using video games in the context of public dissent and to show how they succeeded, but also how they failed, to be at the service of the demonstrations. Thus, We will examine these games from three analytical lenses:

Mode of Representation: This lens is necessary to critically examine the alliance offered by the space of protest and the space of play. More precisely, this lens intends to verify if the game places the space of protest in the foreground and if this space is playable. We also examine whether the game offers a positive look at the civic practice of protest;

Spatiality: which is at the centre of the protest exercise. Therefore, this lens researches spatial representations in these games and how the game's process includes the player in the creation of space;

Pedagogy: This lens explore the possibility of using games to develop spatial literacy. We will examine if and how the spatial awareness of protesters can be developed through the lessons offered in these games and their possible generalization.

1.1. Defining Spatial Literacy

We have chosen to use the term *literacy* instead of the term *alphabetization*[1] given the socio-cultural dimension that the term literacy intails. (Street, 1993; Street, 2005) The concept of literacy is thus broader than the concept of alphabetization: it allows us to "rethink the issue of alphabetization, taking into account epistemological, historical, social, political, ideological factors..." (Pierre, 2003)[2] According to Chartier and Rockwell, "[in] one case (alphabetization), the procedure of written-oral transcoding is considered as a know-how skill independent of the reading content to which it is supposed to give access, in the other case (literacy), it is the capacity to understand and use writing that is privileged."[3] (2013) Rather than the notion of alphabetization, this broader concept offered by the term *literacy* corresponds more to what we want to understand by spatial literacy in the case of demonstrations.

To refine this concept, we propose to briefly retrace its main articulations. Coming originally from the fields of education, spatial literacy is generally used in the field of GIS (geographic information systems) to describe the knowledge and tools needed to understand a space. (Tsou and Yanow, 2010) In game studies, Celia Pearce defines "spatial literacy" as a mode of conventions and skills players develop to read a certain game space. (Pearce, 2008) Pearce studies the games *Myst* (1993) and *Uru: Ages Beyond Myst* (2003), from which she elucidates four practices that demonstrate and develop spatial literacy. These four practices are interpretation (reading space), discourse (describing space), emergent gameplay (using knowledge of space to create unique forms of gameplay) and productive play (which can be defined as the writing of space). (Pearce, 2008, p. 8)

Pearce's definition focuses only on the game space. This article aims to extend this definition to include the physical space in addition to the game space; both are present in the case of protest. Spatial literacy includes two main dimensions that playing protest can offer: spatial

1 This text was initially written for the francophone community in which the term "Alphabetization" is more common to be used instead of "Littératie". For example check: Guillaume Grandjean 2020 article: ***Le langage du level design : analyse communicationnelle des structures et instances de médiation spatiales dans la série The Legend of Zelda (1986-2017)***. Sciences de l'information et de la communication. Université de Lorraine.

2 « repenser la problématique de l'alphabétisation, en tenant compte des facteurs épistémologiques, historiques, sociaux, politiques, idéologiques… » Translated by the author

3 « [d]ans un cas (alphabétisation), la procédure du transcodage écrit-oral est considérée comme un savoir-faire indépendant des contenus de lecture auxquels il est supposé donner accès, dans l'autre cas (literacy), c'est la capacité à comprendre et utiliser l'écrit qui est privilégiée. » Translated by the author

awareness and spatial engagement. By spatial awareness, we mean the way in which the creator of the game develops a space that intertwines with and thematizes by the story and thus becomes an actant of the game. Spatial engagement refers to the possible level of engagement with the contested space, which the player experiences while playing. This element can only be actualized if the first element — spatial awareness — is present.

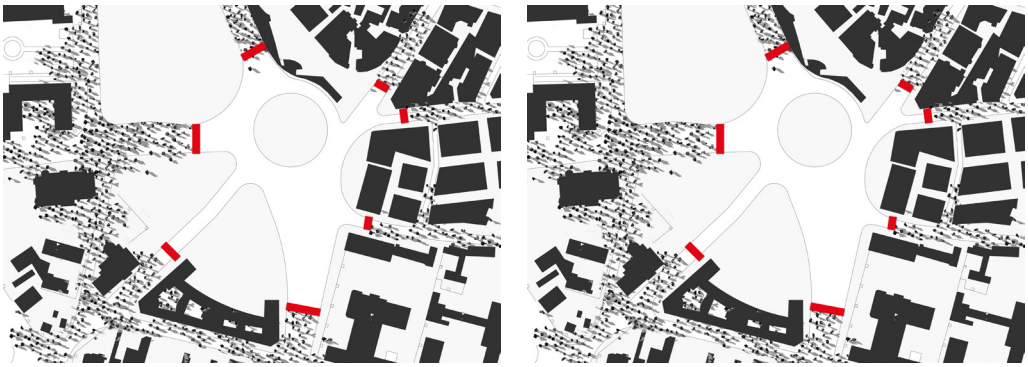

Figure 8: Left: Protesters are easily surrounded by police when they take the square as their starting point. Right: Police can lose control over space if protesters arrive from the streets surrounding the square. Illustration by the authors

1.2. Two Scenes of Spatial (il)Literacy During Protests

On Friday morning, January 28, 2011, Egyptian police closed the entrances to Tahrir Square in Cairo to prevent protesters from occupying the space. Hours later, protesters took over mosques and universities as the starting point for their movement. Passing through the alleys of Cairo and arriving at Tahrir Square, they could surround the police and eventually occupy the space. Tow years later and In 2013, the security forces — having become aware of the tactics used by the protesters in 2011 — surrounded all the entrances to the public space and evacuated Rabaa Al-Adawiya square for what is knows as "August 2013 Rabaa massacre."

In the first event, protesters developed a sense of momentum and confidence by moving through narrow streets, giving the impression of a growing crowd. This tactic also feeds up the march with more crowds since it encourages neighbours living in the narrow streets and looking from their balconies to join the march. If we leave aside the fatal violence used by the security forces, In that case, we can highlight another factor in the defeat of protesters in the second event: their lack of awareness of their spatial presence. Indeed, located at the intersection of two wide roads, Rabaa Al-Adawiya Square could easily be surrounded by its

four entrances by the security forces. Protesters were, therefore, easily imprisoned (Figure 8). These two examples clearly show that the spatial illiteracy, first of the security forces and then of the demonstrators, led each of the two groups to lose control of space.

1.3. Brief State of the Art on Spaces of Protest

Before proceeding to analyze the corpus of games in connection with spatial literacy, we must present a brief state of the art of work on contested urban space during civic or political protests and situate our contribution.

Protest, demonstrations, occupation and other spatial performances of resistance have always threatened oppressive regimes. Crowd assembling in urban spaces is not only putting pressure on the existing authorities but also paralyzing the administrative and political life (Bayat, 2017, p.126) and disrupting urban economies. (Harvey, 2012, p.118) In addition to states' efforts to curb such spatial exercises, they have recognized the importance of limiting their occurrence in the future by imposing short and long-term urban strategies. (Figure 9) (Figure 10) These arrangements define the distribution of power over the contested space. (Tilly, 2000; Martin and Miller, 2003; Said, 2015)

Figure 9: Map showing how the police create the barricades to control the space. The map projects the Tahrir Square in Cairo, Egypt. Illustration by the authors

Figure 10: a barricade near Tahrir Square, December 2011. Credit: Alisdare Hickson https://www.flickr.com/photos/alisdare/6472869105/

In addition to erasing all artworks and memorials related to the contested events, (Abaza, 2013) the regime is erasing the visual remembrance from the place to eradicate any reminder of the power once obtained by the citizens. Such oppressive powers are successful in limiting social and political movements from their right to occupy the space, which consequently led to the loss of the space and the defeat of protesters' purpose.

Recent crowd gatherings illustrated that understanding of space was often lacking on the side of protesters and that space was previously understood as an abstract concept. But for some, this observation is not inevitable; to remedy this, they move to video games. In this article, we want to analyze video games that thematize social movements in their narrative to answer two questions: which games take into consideration the role of space in protests? And how spatially aware are game makers when building their games on protest?

We posit that video games have the ability to offer a deep understanding of how space can affect political and civic protest. Video games provide a platform for recreating virtual geographies while maintaining symbols of place and empowering its players with the ability to be active;

in an interdisciplinary interaction between urban issues and new technologies. In addition, video games, being part of popular culture, are present in the context of contemporary manifestations. For example, activist artists in Turkey have used graffiti to resist and challenge the oppressive regime; the drawings made on the walls of Taksim Square during the 2013 Occupy Gezi protest show strong references to video games. (Demirbag-Kaplan and Kaplan-Oz, 2018) This paper hypothesis that video games, due to their ability to influence protest culture, can be utilized as a vessel through which protesters are able to virtually retrieve lost geographies via gameplay.

Video games can be seen as spatial (Ter Minassian et al., 2012, p.210) as protest, as they both occupy space and are understood in spatial terms. Like protesting, game playing is an activity that requires active bodies. Video games exist not only in a -virtual- space but are also connected to their material surroundings. Moreover, game theorists have found a home in the works of urban theorists, such as Henri Lefebvre, to explain particular expressions in video games. (Leirfall, 1997; Aarseth, 2007; Nitsche, 2008 and Crawford, 2015) Contemporary works have proposed an understanding of the game space as a separate realm that enables a deviation in ethos from the material world, at the same time explaining its boundary as a porous membrane in which the player moves between two realms, inflicting change on both. (Castronova, 2005, p.147) The video game then becomes pervasive, extending the gaming experiences into the physical world. The connection between the virtual and the material renders the game space trans-paradigmatic in its operation and transversal in its impact, rendering it an ideal candidate in the search for another medium for protest. Thus, video games can offer social movements a medium to actualize their collective consciousness of space and act as a tool for spatial literacy.

2. Occupy the Virtual: Typology of Games Thematizing Protest

Designing and building games for protest is not a novel proposition; the current library of video games contains many titles that deal with political play or showcase mass protest. Historically, the rise of protest/activist video games is usually attached to the anti-corporate protests in Seattle in 1999 (Pedercini, 2004) as well as the international mobilization against the war in Iraq in 2003. (Dyer-Witheford & De Peuter, 2009, p.XXVII) A third time frame

that has greatly affected the production of protest games is the 2011 global protest that took place in several cities around the world. This move has inspired several activists and game makers to produce action, board and digital games to support these social movements.

This text distinguishes three different patterns of games that feature protest in its lines of code. The first pattern consists of video games and virtual environments that were not initially designed to support protesters but have been hijacked by some players for this purpose. This is the case with massively multiplayer online role-playing games (MMORPG). The players thus appropriated these spaces to protest. The second pattern consists of games that present protest as the setting for the game's narrative. In this case, protest is usually marginalized, stripped of its substance, and used as a background. Finally, the third pattern contains games in which protest is central. This last category has different names, such as *activist games* (Flanagan, 2009), *current-event games* (Bogost et al., 2010) or even *newsgames.* (Sicart, 2009)

2.1. Virtual Demonstration in MMOGs

In-game virtual protests emerged with the rise of MMOGs such as *Ultima Online* (Origin Systems, 1997), *Second Life* (Linden Lab, 2003) and *World of Warcraft.* (Blizzard Entertainment, 2004) Many of these protests were linked to fictional in-world issues similar to customer service problems or modifying the control level over characters. (Hjorth & Chan, 2009, p.142) However, With the growing interdependencies of virtual worlds and physical spaces, players extended the virtual space to contain protest events related to the physical world's political, cultural and social issues. During the past years, *Second Life* (SL) has included dozens of protest events due to the freedom the game gives its users to recreate the existing physical world.

SL is a virtual environment that users have widely used to develop ludic activities based in particular on role-playing. However, The invitation of corporations (such as IBM and Rebook) by Linden Labs, creator of *Second Life*, led to dissent among players "who saw it as a violation of the libertarian ethic that they believed informed their virtual world." (Dyer-Witheford & De Peuter, 2009, p.XIV) Later, in 2007, the international labour union organized a protest in front of the IBM virtual campus in *Second Life* to support striking Italian IBM workers. Such events pushed activists to establish a Second Life Left Unity (SLLU) virtual party to "oppose capitalism, as well as racism and sexism as a part of capitalism" (Tracer, 2018). Their contribution was also significant when they organized a protest and succeeded in preventing

the Front National -the right-wing French political party- from creating its headquarters within the game space. (Nitsche, 2008, p.235)

As previously stated, crowd assembling in urban spaces puts pressure on the oppressive regime and paralyzes the administrative and political life. (Bayat, 2017, p.126) On the other hand, an overcrowded server -with virtual protesters and people logged on to watch the event- can crash the game server. (Hjorth & Chan, 2009, p.143) This happened in 2007 in Fantasy Westward Journey (FWJ), the most popular multiplayer online game in China at the time. When players believed that they saw the Rising Sun Flag -a symbol of Japanese militarism- within the game, they gathered on March 7, 2007, in front of the building carrying the sign. According to Henry Jenkins, almost 10,000 players joined the protest on the first day, and their numbers have significantly increased, causing clogs and issues to the game server. (Jenkins, 2006)

The gamespace appears to offer more freedom for players to protest and safely represent their point of view without risking incarceration. However, we should always be aware that this coded space is -in most cases- controlled by an operating company, and they can break up the protest at any moment. Also, with the vast amount of players and the expanding worlds in these multiplayer online games, operators mostly rely on abuse reporting by looking mainly at the total amount rather than the reason for the protest. (Linden Lab, 2008) In this case, blind and quantity-oriented code becomes the ruling power in the space of video games.

2.2. Protest as Background

Games such as *SimCity* series, (Maxis, 1993) *Tropico* series (PopTop Software, 2009), and *Assassin Creed's Unity* (Ubisoft, 2014) are the most popular for introducing protest/riot in their narrative. These games have voluntarily decided not to engage with the political events they represent in their game narrative. By doing so, they empty protest from its cause and substance to increase the playful experience and make it more dynamic. For example, *Assassin Creed's: Unity*' events take place in a timeline adjacent to the French revolution in which the video game narrative (Barnabé, 2018) is nourished by these contributions throughout the game. However, it is a background feature of the main narrative that is not included in the playable experience.

SimCity offers a different -and sometimes radical- perspective on the act of protest/riot.

SimCity first introduced riots in its second version: *SimCity 2000*. According to Julian Bleecker, introducing riots was a last-minute decision (Bleecker, 2004, p.50) as a response to the Los Angeles (LA) uprising in 1992, less than one year before the release of the second version of the game. Racism was the main catalyst of the LA riots. However, In *SimCity*, race and class conflicts are sanitized. It is impossible to see racial riots in *SimCity* (Pedercini, 2017).

Riots were introduced as a *disaster* feature, natural disasters or major accidents (plane crash in the city, for example). Disasters can occur randomly, or the player can trigger them. In subsequent versions of the game, riots were considered equivalent to other elements that put the city in peril, such as a meltdown of a nuclear reactor, a meteor, an earthquake, a UFO or a zombie attack. In-game conditions that trigger a riot "include high heat, high crime, and high unemployment." (Bleecker, 2004; p. 51) The game teaches planning and strategy making; however, the game has been criticized from many perspectives. For the sake of this research, we are looking at what *SimCity* teaches us about rioting and protest. As a SimCity's mayor, riots are a threat that must be solved as quickly as possible. Players must first use extreme force to deal with the riots, then consider how to deal with crime and education problems. In *SimCity 2013*, riots are no longer considered a disaster, but it still exists. However, the chance to have a riot became very rare. It is frequent now to see a strike or a protest in front of the city hall.

2.3. Games Serving Protest

Digital media have given new definitions to contemporary citizenship. Countless people worldwide are harnessing digital media's affordances to enable democratic participation. Digital games are getting particular attention and are being used by local authorities to mobilize the community; for example, digital games for local planning or apps to give feedback to the city council. Therefore, digital games can be used as co-production tools for government services or, on the contrary, to challenge institutional bodies, as in the case of Occupy movements. (Gordon et al. 2013, p.2)

Peaceful protest is receiving particular attention among civic theorists, who also show interest in protest and video games. (Stokes & Williams, 2018) Such interest is partly caused by a global rise in protest and partly because video games are a fertile and unconventional medium for young activists. Video games share many similarities with peaceful protest, (Duncombe, 2007) as role-playing games can echo some of the carnivalistic role-play demanded of

protesters in groups; it provides a way to align with collective bodies and simultaneously express personal identity. (Stokes & Williams, 2018, p.330)

Tracing such games is always challenging. As Sicart argues that political video games "addresses a political theme of the moment and then rapidly vanish from the public scene" (Sicart, 2014). Games such as Yellow Umbrella (Awesapp, 2014) were created as mobile games during the 2014 Hong Kong Protests but no longer exist on the online store. Another interesting aspect also to consider is game jams. Game jams are social events to produce games under constraints, such as a short fixed time (Goddard & al, 2014). During the 2013 OccupyGezi protests in Turkey, a 48-hour #GeziJAM took place to support protesters in the street. Local developers banded together and uploaded around eleven games. However, most of these games are no more traceable.

3. Game Design as Activism

In this section, we will analyze three games to deepen our investigation of the third category (games serving protest) and to illustrate the type of video games that can fit into it. The selection process for our cases has set particular criteria: a) the protest is playable or interactive, b) the protest has a direct relation to a space, whether real or imaginary c) the game is playable for the public d) the depiction of protest in the game has a clear point of view about the act of public demonstration and therefore transmits that views to the players. The cases will be analyzed using the three analytical lenses we identified in the introduction.

The research has eliminated games that could not fulfil these criteria, such as *Assassin Creed's Unity*. Although the Assassin's Creed franchise is known for its quest for spatial precision, we removed it from selected cases because the events are used as background, as explained earlier. Other games were eliminated due to their unavailability, for example, certain video games created during the 2014 #GeziJAM. They are very appropriate cases for this research as they centre protest and relate directly to space, not to mention their relationship to real events. However, most of the Gezi Park games seize to exist but in the title, making it impossible to access and analyze them during game sessions for a cohesive evaluation. We will first present the three games during a systematic description phase. Then, we will mobilize the concept of spatial literacy in order to compare the contributions of each game.

Figure 11: Reza, the game's protagonist, with his friend Babak Azadi, observes the protesters filling the streets of Tehran. Screenshot was taken by the authors of the article.

3.1. 1979 Revolution : Black Friday (2016)

This game is built around the story of the Iranian Revolution, a reference to events that resulted in the overthrow of the Pahlavi dynasty under Mohammad Reza Shah Pahlavi. Revolt and protest against the Shah began in October 1977; the protest turned into a campaign of civil resistance that included both secular and religious aspects and peaked in January 1978. Between August and December 1978, civil disobedience through strikes and demonstrations paralyzed the country. The royal reign collapsed on February 11, when guerrilla tactics and rebel groups overhauled troops affiliated with the Shah in armed street fighting, eventually bringing Khomeini to power.

The plot revolves around decision-making during protests. It takes place a few days before the tragic turning point in the revolution; the Black Friday massacre left dozens of civilian deaths in Tehran's Jaleh Square after the pro-Shah forces opened fire on a crowd. The game protagonist Reza, a young photographer -who came back home from Germany after finishing his studies- found himself in the streets of Tehran witnessing one of the most important revolutions in history. The story's narrative is told in flashbacks. Reza - caught by the police - found himself in a dark investigation room. Following the investigator's questions, Reza starts to remember the events that occurred in the streets of Tehran.

In the first part (before Black Friday events), players understand the events of the 1979 revolution and documents the important moments with their camera. According to the game introductive scene: "The choices you make will shape your experiences in this revolution and the fates of those around you." The captured photos will always be put in comparison to black and white photos captured during the original protest, in a trial to link the virtual events in the game with the real events.

Analysis of 1979 Revolution: Black Friday Using Analytical Lenses

Mode of Representation	The game depicts the city of Tehran with relatively advanced visual fidelity. The game sheds a positive light on the protest exercise, and it is told from the perspective of the people. However, the protest space is barely playable.
Spatiality	The player can interact with the built environment and can, for example, go to the roof of a building. He takes advantage of urban environments to take his photos. However, the player cannot choose the location himself. A fixed scenario determines the space experience a priori, which prevents the player from exploring the city.
Pedagogy	The purpose of this game is educational: it aims to offer a lesson in history through play. However, the game does not allow for the development of the players' spatial literacy. In his book *Life as Politics*, Asef Bayat (2009), an Iranian-American scholar who lived through the Iranian revolution, explains why certain streets were the epicentre of the revolution and the role certain spaces played during the events by indicating four socio-economic characteristics - spatial: the centrality of the space, the proximity of cultural and intellectual centres, accessibility by transport networks and the possibility for the crowd to flee out of space. The game is unable to show these characteristics. Although the scenario of the game depends on the choices of the player, these do not include spatial decisions.

Figure 12: Screenshot by the authors of the article showing the organization of the police and protesters in the game space.

3.2. OccupyGezi (2016)

Istanbul Gezi Park Protests refer to demonstrations and civil unrest nationwide in Turkey. It started as a reaction to the violent crackdown by the police against a small environmentalist protest at the end of May 2013. Protesters rallied against the redevelopment plans of the Taksim area, which included the demolition of Gezi Park, one of the last green spots in Istanbul. (Sezen & Sezen, 2016) The mobilization of thousands of people toward Taksim Square and the clashes that occurred on June 1, 2013, with the police resulted in their withdrawal and the occupation of Gezi Park. The state reacted to these demonstrations with a massive deployment of riot police. After months of violent confrontations, leading to a high number of injuries and several civilian deaths, the protest faded in late August 2013. (Amnesty International, 2013)

This particular game is one of the few trackable/playable games out of all the twelve games developed at the Gezi Game Jam. The #GEZIJAM took place in early June 2013 in Turkey during the occupation of Gezi Park. It was announced by the unofficial digital game

developer community "Game Developers @ Turkey." The theme included topics such as disinformation, police violence, democracy and media freedom. (Dijital Oyun Kültürü, 2013) In the case of OccupyGezi, the game experience is antagonist-driven: the player takes on the role of a police officer tasked with firing tear gas canisters at protesters. *OccupyGezi* is a game that the player can only lose. One could argue that the game represents the mood of the early days of the protest, which saw the withdrawal of police from Taksim Square and Gezi Park. The player decides whether to throw tear gas or not and can also choose to let people pass without resorting to violence. The use of tear gas does not block the way of protesters, it only slows them down. Tear gas multiplies the number of demonstrators.

Analysis of OccupyGezi Using Analytical Lenses

Mode of Representation	The game focuses on the behaviour of the police in front of the crowd: *OccupyGezi* is about showing and glorifying the power of the demonstrators and the helplessness that shows the limits of the police. (Sassen, 2011) The rhetoric of the game is predicated on the protesters winning either way. The representation of the space of protest is missing. The space in the game is very abstract: a simple, neutral facade surrounded by grass. However, the game contains different representations of local resistance iconography from the Gezi Park protest. It pays homage to iconic aspects of protest, such as supporters making noise from balconies with kitchen utensils.
Spatiality	The game does not reveal any spatial strategy or tactics developed by protesters. The player has no control over the game space. The game environment can be separated easily and should not be anchored in a spatial game link. It is a removable background that does not affect the game experience.
Pedagogy	The game does not reveal any spatial strategy or tactics developed by protesters. The player has no control over the game space. The game environment can be separated easily and should not be anchored in a spatial game link. It is a removable background that does not affect the game experience.

Figure 13: Screenshot by the authors of the article of the Tahrir Square recreated in the game Riot: Civil Unrest.

3.3. Riot: Civil Unrest (2018)

Riot - Civil Unrest recreates virtually the contested spaces in a trial to keep the memory of these spaces and events alive. The game mainly shed light on four movements, most of which occurred in 2011. First is the NoTAV movement in Val di Susa, Italy. Its purpose was to prevent the construction of the high-speed train line between Turin and Lyon. Second, the Keratea protest in Greece in which residents protested against government plans to create a depot to store the capital's waste. Third, the Indignados movement in Spain was due to the economic crisis. The events produced in the game are from Madrid and Barcelona. Finally, the Egyptian revolution which took place across all Egyptian cities. However, the game only recreated the events in and around Tahrir Square, Cairo.

There are four essential modes of play: story mode, global mode, versus mode and custom mode. What this game offers, unlike others, is the potential to play on both sides: Protesters or Police. In some cases, as in custom mode, you are forced to play both sides to be able to unlock other events. Depending on the player's position, the objective can be to protect the tents from being destroyed or to peacefully occupy the space as protesters or the inverse in the case of police. Depending on the level played, players -as protesters or police- can go from passive (peaceful) to aggressive (violent) or the inverse. Each mode has its tactics and

equipment. In global mode, this can significantly affect the points the players get at the end of each level, even if they have accomplished their objective, as it affects the "political result". The political result is related to how social media responds to the event, and using violence, as an example, can make players lose points and, consequently, lose the game.

Analysis of Riot: Civil Unrest Using Analytical Lenses

Mode of Representation	*Riot: Civil Unrest* is perhaps the most sophisticated game on the market today among those that attempt to depict and recreate the spaces of recent popular uprisings. The game mimics existing protest spaces using pixel art style and features over twenty maps of contested spaces. Recently, the game introduced an "edit mode" to recreate a custom protest space from an existing library.
Spatiality	The spaces are not connected to each other and are represented on a single-screen map. At each level, the camera encloses a specific scene/space in which the player can only zoom in or out. Therefore, there is a lack of mobility. The act of movement between the different spaces of the same city is lost. It lacks a map that can create the connection between these separate spaces to understand the spatial story of that protest.
Pedagogy	Unlike other cases, this game tries to contribute to the spatial literacy of the players. However, it does not offer an in-depth spatial educational experience of these events. The game introduces some spatial tactics that the police use during such events, such as how police units form in order to control, separate or surround the crowd. Protesters, under certain conditions, are able to build barricades. However, these tactics depend more on the behaviour of the crowd or the police than on the layout of the space.

4. Analysis of the Three Games From a Spatial Literacy Perspective

The cases we have described show that a game that mainly deals with the question of protest is not necessarily at the service of the exercise of protest. Likewise, games that use protest as a primary storyline do not, by definition, promote protest as a societal tool for civic engagement. Additionally, this study found that positioning is necessary for game creators to deliver the full story to their players. *1979 Revolution: Black Friday* takes the position of the protester, but it leaves the player the choice to be peaceful or violent. *OccupyGezi* supports social movements even though the player's protagonist is the police. *Riot: Civil Unrest* takes a different path; the game claims a neutral stance and lets the player decide whether to take the role of the police or the protesters. Therefore, it seems useful for creators to explain their positioning, point of view, power claims and their intentions.

4.1. Spatial Literacy for Game Creators

Space illiteracy is one of the main issues preventing games from actively serving the protests. It is also the most relevant point in the context of this work. *OccupyGezi* offers no contribution to the player's spatial awareness or spatial engagement because space is neither centralized nor played. On the other hand, the creators of the games *1979 Revolution: Black Friday* and *Riot: Civil Unrest* are aware of the spatial dimension that exists in social movements, but the player is not engaged in this experience. In both cases, the character's control in space is limited. The player does not contribute to the acquisition of knowledge; the player is only a simple spectator of the history over the course of the game.

Game designers often have little awareness of the spatial dimension of protest. Designers construct elaborate scenes, often with vivid depictions of real events, but fail to transform the gaming experience into a four-dimensional interaction with the protest and its activities. The space is then reduced to background images, static shots and reduced accessible play space. This causes tokenization (i.e. the replacement of a critical element by an element with the equivalent function but without the same symbolic value) of the space: it becomes a static symbol which deprives the space of the game of its political characteristics. Furthermore, the cases point to a serious underestimation of the protesters and their spatial abilities. The police are assigned various activities in the form of organized strategies and tactics, while the

protesters are often depicted as reactionary and disorganized, as in the case of *Riot: Civil Unrest*.

Basing our analysis on Michel de Certeau's definition of strategies and tactics that strategies are associated with space, power and institutions while tactics are related to the territory of the powerless individual (Lombardo, 2010), we can argue that protesters also have the ability to apply both spatial strategies and tactics. De Certeau's (1984) definition distinguishes the large-scale manoeuvre of a spatial planning unit from the tactical occupation of space by the protesting masses (Frow, 1991). Protesters create tactics through the lived space in order to claim control of said space. On the other side, the police have more capabilities and tools to develop spatial strategies in the designed space. The summit demonstrations, as well as the latest wave of protests, showed the ability of protesters to generate strategies. However, their impact remains limited.

In contrast, current video games see the power protesters gain and the spaces they occupy as a result of their large numbers. Game designers are stuck in the approach to protest taken by scholars until the mid-twentieth century when studies focused on crowd behaviour. For a long time, scholars have studied the crowd only as an active agent in protest. (Sighele, 1901; Le Bon, 1895; Blumer, 1939 and Canetti, 1960) However, since the beginning of the 1990s, researchers have invested in the concept of *spatiality* proposed by Michel Foucault (1984), and they have begun to recognize the role of space in the formation of contemporary protest. For some developers, video games seem to have the potential to give protesters the tools to develop spatial strategies by supporting them with a top-down view, the viewpoint that protesters lack during physical protests.

4.2 Gamespace, Playspace

In the collective book *Espace et Temps des Jeux Vidéo*, Mathieu Triclot mentions the importance, not only of studying the gamespace but also the space where the game takes place: "Over the gamespace, there must be added the space around the game, the space of the practice, the one in which the acts of play are deployed concretely... In short, to everything that makes up the distinct quality of a place."[4] (Ter Minassian et al., 2012) Triclot's reflection

4 « À l'espace dans le jeu, il faut ajouter l'espace autour du jeu, l'espace de la pratique, celui dans lequel les actes de jeu se déploient concrètement...En bref, à tout ce qui fait la qualité distincte d'un lieu » (Ter Minassian et al., 2012) Translated from french by the author

highlights why a game cannot be played or created in the same way in different places.

Spatial technologies make it possible to extend the field of the game in space. Geographic information tools have caused a paradigm shift in video games by moving the gaming experience from the living room to the street — creating location-based games — where playing originally began. Technologies, such as positioning systems using geolocation data, can offer an in-depth understanding of the spatial tactics of protest (Martin, 2014; Mohamed, Van Nes and Salheen, 2015) in addition to their ability to improve the understanding of space for developers.

As the game must be interactive and relevant vis-à-vis spatial existence, games based on the location of the players must also take into account their safety from hegemonic authorities. The game space is the space of simulation created in order to possibly affect the physical simulated space. However, in order to develop a strategy, as argued by Michel de Certeau, it is necessary to separate the subject of will and power from its environment so that it can function. (De Certeau, 1984) Therefore, a game that causes provocation can be counterproductive.

5. Conclusion

Following the analysis of these three games, we can conclude that despite the potential for developing spatial literacy through video games, such an achievement is not yet realized. Currently, the creators of protest games consider the success or failure of occupying a space as the result of the number of demonstrators or the level of police equipment and neglect the spatial factor. The space is reduced to background images. In order for a game to serve as a spatial literacy of protesters, the creators of the games must gain a deep understanding of the protest space, the game space, and the spatial relationships between both spaces.

Chapter 3

How do we Partake in the Gamespace?

Investigating the potential of video games as an aid to community mapping and participatory architectural design, I discuss the use of the sandbox game Minecraft by the Block by Block Foundation in collaboration with Mojang Studios, Microsoft, and UN-Habitat for three projects—Model Street (Dandora Phase 2, in Nairobi, Kenya), Mind the Step (Jardim Nakamura, in São Paulo, Brazil) and Former Marketplace (in Pristina, Kosovo). The text offers different perspectives or "lenses" from which to view the projects, including as an architect (which I call a spatial lens) and as a community member (which I dub a player lens). Favouring agency over participant choices, the institutional forces at work can prevent true access to space-making by either the foundation or the game, each of which suffers from accessibility problems for both players and the communities. I argue for a need to look more closely into the politics of the Block-by-Block Foundation and Minecraft and seek to make readers explicitly aware of the systemic mechanisms of exclusion.

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Playing, Mapping, and Power: A Critical Analysis of Using Minecraft in Spatial Design

1. Introduction

People around the world use digital media to aid civic participation and promote social justice. Many governmental and community organizations have changed their mission and functions as they adopt new digital tools and practices (Gordon and Mihailidis 2016). Similarly, digital games have been seen as a very potent vehicle adopted by many large-scale institutions such as the United Nations Human Settlement Programme (UN-Habitat). This use of games has led some cities to embrace digital games in their participatory design strategies, an important development in city planning over the last century that seeks to include people in democratic space-making (De Carlo 2005, Hoskyns 2005, Luck 2018). Here, I look at the participatory model proposed by the Block-by-Block foundation that integrates the sandbox video game *Minecraft* as an urban participatory mapping tool in collaboration with Mojang Studios (the developer of *Minecraft*), Microsoft, and UN-Habitat. The foundation works with nongovernmental organizations (NGOs), city councils, and government entities in marginalized communities to help them redesign and recreate their public spaces

Departing from the concept of participatory design that aims to democratize space-making using video games in aiding communities mapping their built environment, this research looks at power structures and spatial products that have resulted from such efforts. In this research, I investigate these initiatives from a critical perspective, and I ask questions about the true effectiveness of participatory design through digital games in these projects. Unlike most of the urban participatory games, Minecraft promotes itself as a space-design and a space-mapping tool. I consider the produced spaces within *Minecraft's* interface as a map—not an institutionalized cartography inscribed within a certain system but as a plan, a proposition (Wood 2010), and a spatial representation of a space that was, is, or will be (or even a space that will never happen).

2. Overview of Video Games in Participatory Planning

2.1. Serious versus Sandbox Games in Participatory Planning

Games have been implicated in the urban-planning and space-making issues of cities since the second half of the twentieth century (Mayer et al. 2009; Tóth and Poplin 2013; Tóth 2015). Digital games specifically have gained attention and been used by local authorities for developing community engagement, including local planning and giving feedback to a city council. The existing research shows a wide diversity of digital games developed especially for participatory planning and offering a different range of control over the played map (Tóth 2015). Games such as *NextCampus* (2012), *B3-Design Your Marketpl*ace (2014) and *Plan Your Brisbane* (2018) ask for players' opinions about a future urban development: the new location of a university campus in the first case (Poplin 2012), the redesign of the marketplace's public space in the second case (Poplin 2014), and the future urban strategies for the city of Brisbane in the third case. Such games are usually called serious games.

Serious games aim to provide a playful and engaging environment that embodies knowledge and pedagogical principles (Khaled and Vasalou 2014). However, these tools are designed to target a specific urban issue in a specific time frame. They are limited in their use in space and time and, consequently, the included map is usually limited in its control. Governments and city councils found in online virtual worlds (i.e., Second Life 2003) and sandbox games such as Minecraft (2011) an adequate tool to engage citizens in urban decision making. For example, authorities in New York (Tulloch 2007, 2008) and Boston (Gordon and Manosevitch 2011) used *Second Life* (2004) to engage citizens in the design process of a proposed public park. Unlike serious games, virtual-worlds and sandbox games are not tailored for a specific urban context but offer a high degree of control over the game space that players can appropriate to map their imaginations. By the game space, here I mean the virtual environment of the game. I see the digital realm, in which the game space is embedded, as an infoscape, a technology that has added a layer to the other scapes of the space of our existence, e.g., landscape, soundscape, smellscape. All of which shape the body of space and influence other bodies to generate spaces.

Although several studies have praised the integration of digital games into the participatory process, especially the integration of children's voices, many scholars have expressed concerns

about such participatory projects. Firstly, planners have often been unprepared to give the public so much power and, secondly, in other cases "the city might have no intention of using that data because a decision has already been made" (Leorke 2018, 187). Apparently, in participatory workshops that engage play with planning, power disparities become manifest—the power of the spatial professional (architect, urban planner), the power of the city council, and the power of stakeholders. Likewise, game spaces are embedded in power hierarchies—powers of the algorithm, of the server, and of the players (Dyer-Witheford and De Peuter 2009). This power imbalance among those who make map their spaces by playing and those who control its infrastructure (game developer or stakeholders) produces a level of spatial hegemony in which the contributor or player could lose power over the map and its spatial representations.

2.2. Minecraft as a Participatory Planning Tool

Minecraft is a sandbox block-building video game that gives its player an infinite virtual world to explore and exploit. Players can generate an unlimited number of existing worlds or fictional worlds by using uniformly sized 3D Blocks. By far, Minecraft has one of the bigger market shares in the video games industry with over one hundred million players worldwide (Hoogervorst et al. 2015) My interest is to understand how game designer Mojang Studios directed public attention to Minecraft as a tool that has the potential to remap and redesign the buildings and urban spaces in marginalized communities. I propose two reasons: Outreach efforts and the integration of external modification files (mods) developed by players.

First, Minecraft creator Mojang advertised its game as a tool that can socially engage young generations in many fields such as education and city planning. In 2011, using Minecraft as a mapping tool even before its official release, Mojang collaborated with Svensk Byggtjänst Swedish building services to engage people living in "the million programme" neighborhoods to imagine a future for their space (Mojang 2011). They called the project "Mina Kvarter" and presented it during the official release event MineCon 2011. The project influenced city municipalities, NGOs, and architects to use Minecraft as a tool to engage citizens in mapping and decision-making processes.

The next year, in 2012, they collaborated with UN-Habitat to integrate Minecraft into public space planning with a focus on marginalized communities. Microsoft continued to support the project after acquiring Mojang in 2014 and later initiated the Block-by-Block

foundation. Since then, many institutions and organizations, independently, have proposed similar initiatives. Among these initiatives are the 2014 collaboration between Copenhagen city counseling and Aalborg University; they initiated a project to involve young students in deprived areas to redesign their neighborhood (Magnussen & Elming 2015), the 2018 public competition carried by the ministry of territorial cohesion in France to ask citizens to imagine their future cities and the ongoing 2018 Liègecraft project started by Liege game lab (LGL) to bring local community to recreate and redesign the city center of Liege, Belgium (Hurel & al 2019).

Second, mods became an important asset in the growth and the longevity of Minecraft. Mods is an abbreviation of the word modifications, and it points to the practice in which players or users modifying and creating games' contents. This practice often aims to self-tailor the player's experience. While some game studios forbid the act of modding for copyrights reasons, Mojang encouraged the community to create modification files and plugins for the game (Tremblay et al., 2014). Several third-party apps converted the GIS data into the Minecraft world such as FME and World Painter. As part of their digitalization strategies, many cities have translated their Geographic Information System (GIS) and Computer-aided design (CAD) data into a Minecraft format. The Danish Geodata Agency in Denmark, the Ordnance Survey in the United Kingdom (UK) and the National Institute of Geographic and Forest Information (IGN) in France offer a ready-to-download city/Minecraft map for its citizens (Frémont et al. 2017). Generated maps are usually played in creative mode, one of five game play modes the game offers (the others being survival, adventure, hardcore and spectator modes). Participatory workshops prefer creative mode because it places no constraints or limits on using materials and resources, and players can move freely or fly in space and build or destroy blocks.

The common premise among these projects is that the Minecraft interface has great potential as a relatively simple platform that makes it possible for a wide range of people and players to map their imaginations of the material world. It also allows the import and export of geographic data from other platforms into the game space. The availability of mods is also one of the selling points of Minecraft for institutional funders, although in my opinion it does not take into consideration the limited access to the skill set that allows for such control over algorithms, especially among disenfranchised communities.

Moreover, there is a need to look more closely into systematic issues inside the politics of Minecraft. Scholars have addressed several issues within its game mechanics. Minecraft promises total control over its territories. New terrain contents are generated upon the player's requests (Kreminski and Wardrip-Fruin 2018) — using a computing method called procedural generation. Additionally, and as explained by Dooghan (2019), the game mechanics "encourage players to see the game world as full of resources to be consumed, without concern for ownership or equity, where technological superiority becomes a justification for action, and individual labor is always fairly rewarded" (Dooghan 2019, 71). In some scenarios, rails and water canals can transport villagers as slaves for trading or to get rid of them. In fact, Minecraft mechanics encouraged procedural slavery (Harrer 2019), the reproduction of colonial logic, and neoliberal logic (Dooghan 2016 and López et al 2019). This logic is embedded in almost every online virtual graphic environment like "the logic of exquisite self-craft and appropriation of space" (Nazmeeva 2019). Although these critiques mostly address Minecraft's survival mode and Block by Block relies on creative mode, nonetheless, the creative mode game space—the first developed mode for the game during the beta testing in 2009—was designed and set to be a fertile land for that colonial and neoliberal setting.

2.3. The Block-by-Block Foundation

This article, with its choice of cases, sheds light on the Block-by-Block initiative. In 2012, UN-Habitat launched the "Global Public Space Programme" aiming to improve the quality of public spaces worldwide. The same year, UN-Habitat partnered with the game developer Mojang to integrate Minecraft in their future projects to address the urban issues of marginalized and disenfranchised communities. After the Microsoft's acquisition of Mojang in 2014, they established the Block-by-Block Foundation in 2015 as a nonprofit organization depending on donations for growth. It is a collaboration between UN-Habitat, Microsoft, and Mojang. In its 2019 annual report, UN-Habitat announced it had run one hundred projects (a third of its 2012 initial plan) in thirty-five countries (Lahoud 2020).

But how does the Block-by-Block Foundation view Minecraft: as a design tool or a tool for communication? In this matter, the Block-by-Block Foundation narrative, represented in UN-Habitat's published reports and the team's publications and presentations, seems

confusing. Sometimes it clearly states that "... for us, obviously, and UN-habitat, Minecraft is not a game, it is a fantastic communication tool that some people play with" (Minecraft 2013, 00:33:29 - 33:37:00), although in other publications it calls Minecraft "a game design tool" (Delaney 2020, 282). In the same article, James Delaney—one of the Block-by-Block team—argues that: "In the right hands, Minecraft transforms from a computer game into a computer-aided design tool" (283). However, UN-Habitat's reports mention that "Minecraft is not a precise architectural design tool" (UN-Habitat 2015) and that "it is not so suitable for architectural projects that require a lot of detail" (Lahoud 2020, 37).

Block by Block advocates Minecraft as a potential tool that engages disempowered citizens to redesign and reimagine their neighborhoods. It claims it applies bottom-up methodologies (UN News, 2020) that offer a democratic process by making its decisions more inclusive. It makes the use of Minecraft mandatory for receiving funds, indicating an institutional belief in Minecraft powers. Which means these organizations and entities would not have these funds without accepting the use of Minecraft, regardless of their level of engagement with the game prior to the proposed project.

3. Methodological Approach

I take a multiple case study approach to find a pattern of theoretical generalization for the use of digital games—and particularly Minecraft—in participatory design and planning. To choose the cases, I have conducted extensive research covering the different Block by Block projects. The first criterion I used to make the choice was the execution of all projects' phases; I eliminated cases that uniquely ran a Minecraft's workshop. The second criterion I used was the availability of information and data, including whether it was possible for me to conduct interviews with architects and planners. I analyze three cases: The Model Street (Dandora Phase 2 in Nairobi, Kenya); Mind the Step (Jardim Nakamura in São Paulo, Brazil); and Former Marketplace (in Pristina, Kosovo). The first two cases are intensive cases (Järvinen 2000), used for developing theory and narrative that cover the Block-by-Block phenomenon. The third case, Former Marketplace, is a comparative case (Järvinen 2000) based on the intensive work of other researchers and organizations. The three projects took place under the umbrella of the Block-by-Block Foundation, and all three engaged citizens in marginalized communities to redesign an existing, abandoned public space using Minecraft as a mapping

tool.

Data collection proved challenging because most of the literature about this program offers a single narrative—the Block-by-Block Foundation narrative. This narrative, in my opinion, lacks transparency. For example, authors, in their academic publications or in UN-Habitat reports, promote Minecraft based on quantitative data that lacks accuracy — "fifty percent of the population was online as of 2017" (Delaney 2020) or "Minecraft is one of the world's most popular computer games with over 100 million players worldwide" (Hoogervorst et al. 2015). Such data, which is repeated in almost every online or academic article that addresses the Block-by-Block project, lacks statistical information on its geographical distribution among marginalized and wealthy communities. This means that, despite the wide reach of the game, no proof exists it has widely reached the marginalized communities Block by Block aims to help.

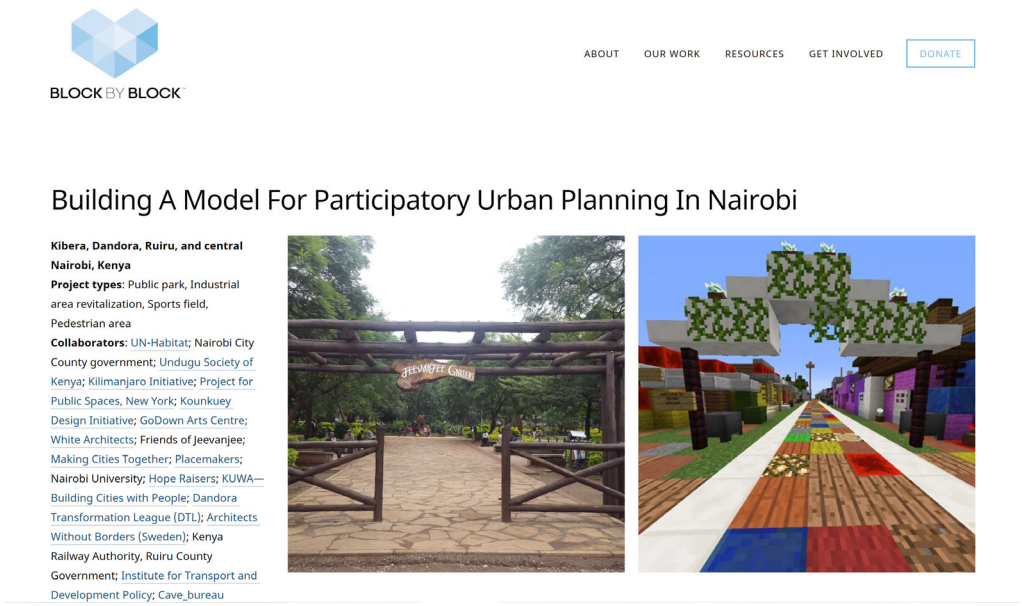


Figure 14: Screenshot of the Nairobi projects' webpage on the Block-by-Block Foundation website (first visit: 01/20/2019, last visit 11/05/2020)

For another example of the lack of transparency, I turn to the Block-by-Block Foundation website. (Figure 14) At first, the photo of the gateway on the left ("after") appears as if it were inspired by the Minecraft model of the gateway created by players in the photo on the right ("before). However, both images belong to two different projects. The way the visuals are represented in this project, even if this act was not intended, distort reality about what exactly

each project has achieved. (The Haiti project's website uses the same technique— "before" and "after" images. But it uses the correct images)

Obviously, each case used different data collection tools. The three cases relied mainly on netnography, an internet ethnography research method that deals with digital artifacts such as drawings, photography, and audiovisual presentations (Kozinets 2015). The three cases benefited from nentographic methods by visiting the different social media groups, which was helpful to track information such as the project's timeline and to follow the progress of the created visuals.

The first case, the Model Street, relied on netnography methods combined with online interviews and archival data. I contacted six executive members—including the NGOs responsible, the architects, and the urban planners—of the project between 2019 and 2020. Only one responded to the invitation and agreed to conduct a recorded interview, but only anonymously. Here, I will refer to this person as "executive member."

The second case, Mind the Step, relied on ethnographic methods, including netnography combined with online recorded interviews. I conducted the interview with Cidade Ativa, the local organization responsible for the Mind the Step project. Additionally, the research benefited from records and archival data of Cidade Ativa, such as the 2018 detailed report on this project: Mind the Step (Jardim Nakamura, São Paulo, Brazil).

In the third case, Former Marketplace, I used records and archival data on the duration of each phase of the project and the level of involvement of participants during the different phases. The case relies also on existing empirical research by scholars like Ton Le's (2017) field study work in Pristina during the construction of the project, the social audit carried by the Group for Legal and Political Studies (GLPS), UN-Habitat's project official Facebook group 'Bllok pas Blloku Prishtinë' and the publications of Rexhepi, Filiposka, and Trajkovik (2016, 2018), in which they discuss the potential of online participation as a development tool and cite the Minecraft's workshop that took place in Pristina, Kosovo, to redesign an abandoned marketplace.

Although I recognize the role these Block and Block projects have played in engaging disempowered groups such as youth, women, and people with disabilities, my aim here is to untangle a different narrative. Instead of understanding the outcomes of players as a separate process, I question Minecraft's impact on the eventual planning decisions. Looking at it from

my position as a practicing architect and as a person coming from a developing country—one from the kind of country that is the recipient of all these development schemes—I find myself more relational to the community than to the institution in charge of the project. Therefore, I apply two analytical lenses to assess the potential for Minecraft to help democratize space-making and aid communities in mapping their built environment—my lens as an architect (spatial lens) and my lens as a community member (player lens).

I use the spatial lens to lay a map on a map. One is the map produced within the game space that relies on the desires and the imagination of the player. The other map is the one materialized in the urban space and controlled by the organization in charge to explore and analyze the power relations between the citizen or player and the institution and to measure the impact the game space had on the planning decisions.

I use the player lens to focuses on the depth and breadth of user experience and to gauge the extent to which the game invites the player to use his or her imagination. I also look at the progression of the gaming and mapping experience and track the extent of player involvement through the different phases of the project.

4. Case Studies: Block by Block Guidelines

The Block-by-Block Foundation offers twelve-step guidelines (they refer to it as a methodology) on their website for community participation. UN-Habitat details it in twenty steps in the manual "Using Minecraft for Community Participation" (Westerberg and Rana 2016). Because the focus of this research is to situate Minecraft within the whole participatory process, I reformulated these steps under three major phases that are centered on Minecraft. These three phases form the base for the questionnaire shared with my interviewees. The three are the phase before the workshop, the phase during the workshop, and the phase after the workshop.

The first phase starts with the application submission process. Although it is not part of the block-by-block methodology, it is a mandatory condition for UN-Habitat to select a project. The local authorities and NGOs must submit an application that includes a description of the project with an estimated budget. If the project is accepted—and depending on the year of submission—the UN could provide the successful applicants with a grant up to $100,000

(UN-Habitat, 2019) or $20,000 for small public spaces intervention (UN-Habitat, 2017). The first application requires that the project's duration shall not exceed twelve months, and the second requires a period between three and six months. The first phase includes the preparation of a Minecraft model of the existing site of the project. The foundation prepares the base model, usually created by a Minecraft modeling firm (e.g., FyreUK). It also includes the choice of participants. Participants are preferably local residents who use the site every day as well as partner agencies, local government, and stakeholders. The preferred number is between twenty-five and sixty participants who represent a broad swath of the community, including individuals with disabilities, women, youths, and seniors.

The second phase (workshop) lasts from two to four days. Participants "are given basic training on public spaces issues, theories and design considerations" (Westerberg and Rana 2016, 6). Then participants are invited to walk through the site to document, observe, and share reflections. The group formation should consist of between two and four individuals. After a Minecraft teaching session, a build-techniques tutorial, and a brainstorming session, groups develop ideas about Minecraft and suggest their preferred changes on the model. Once the models are finalized, the groups then present their model to the other participants and invited stakeholders. Participants and stakeholders collaboratively prioritize the proposed improvements, taking into consideration the cost of the proposed design. By the end of the workshop, participants create a final common model on Minecraft for further development.

The third phase consists of the preparation of architectural and detailed drawings by a trained architect. Usually, the city council is included in this phase. The final design should be based on the final Minecraft model. According to UN-Habitat guidelines, the final drawings are then shared and discussed by the workshop participants and all participating organizations. The third phase also aims to actively engage the community in the construction and maintenance of the site.

4.1. Model Street, Dandora Phase 2 in Nairobi, Kenya

This project is part of the "Making Cities Together," a collaboration between UN-Habitat, Project for Public Spaces, and a Dutch city planning agency named Placemakers. The project is a successor to the Jeevanjee garden's project that took place in Nairobi's city center (Dandora is a suburb east of the city). To apply for the funds, local community groups presented their projects in May 2015 during an UN-Habitat symposium. The Dandora Transformation

League (DTL), a community-based organization in Dandora, won the competition, which offered them the opportunity to receive funding for the project (Executive Member, personal interview 2020). The concept of the Dandora project was to develop a successful "model" that could be replicated in other street blocks in Dandora.

The workshop was organized by teams from DTL, UN-Habitat, Placemakers, and Kuwa, a planning and design consultancy based in Kenya. Twenty-six residents participated in the workshop organized in October 2015 (October 3, 10, 17, and 24) comprising a total of 13.5 hours in addition to 1.5 hours of tutorials. They divided participants into five groups and each group worked on a different node entrance to the street block (Hoogervorst et al. 2015). The groups' objective was to design gateways for each node and to revitalize the street block. Besides their design proposals, they created a matrix of the different proposed elements. The output was shared with Cave Bureau (a local architectural firm based in Nairobi).

The on-site work consisted of two parts—the revitalization of the street and the erection of a gateway. The revitalization's work, which included plantations, street work, the design of tree pots and painting, was mainly conducted by the Dandora Transformation League (with some assistance from Kuwa and Cave Bureau), which managed to engage the community in the process by organizing over thirteen street building parties between mid-2016 and mid-2018. (Dandora Transformation League 2018). During that time, the work slowed down to budgetary constraints (Executive Member, personal interview 2020). The gateway design and construction were carried out by Cave Bureau. The design of the gateway, according to the firm, was inspired by one of the participants' group propositions (Figure 15). The kids proposed the gateway as a pergola to provide shade. The architect interpreted it into a floating street crossing zebra. The architect's idea, based on the outcome of the workshop, was to introduce cars' slowing traffic mechanisms for a safer street (Cave Bureau 2017).

As presented on its website, the firm proposed a first 3-D model (Figure 16). The discussion with the other stakeholders resulted in second and final model. Both models were developed using architectural computer-aided design (CAD) software, and they were hung at the DTL office for the community to review. The development of the early sketches and their architectural and detailed drawings stretched from the end of 2015 through September 2016. The drawings were then submitted for review by city planners (Executive Member, personal interview 2020). The construction of the gateway started in the first half of 2017. The project

Figure 15: The proposed gateway produced during the Minecraft workshop. Players had mainly used ‘oak fence’ and ‘stone pressure plate’ as materials to represent their shading concept Source: Placemakers.nl

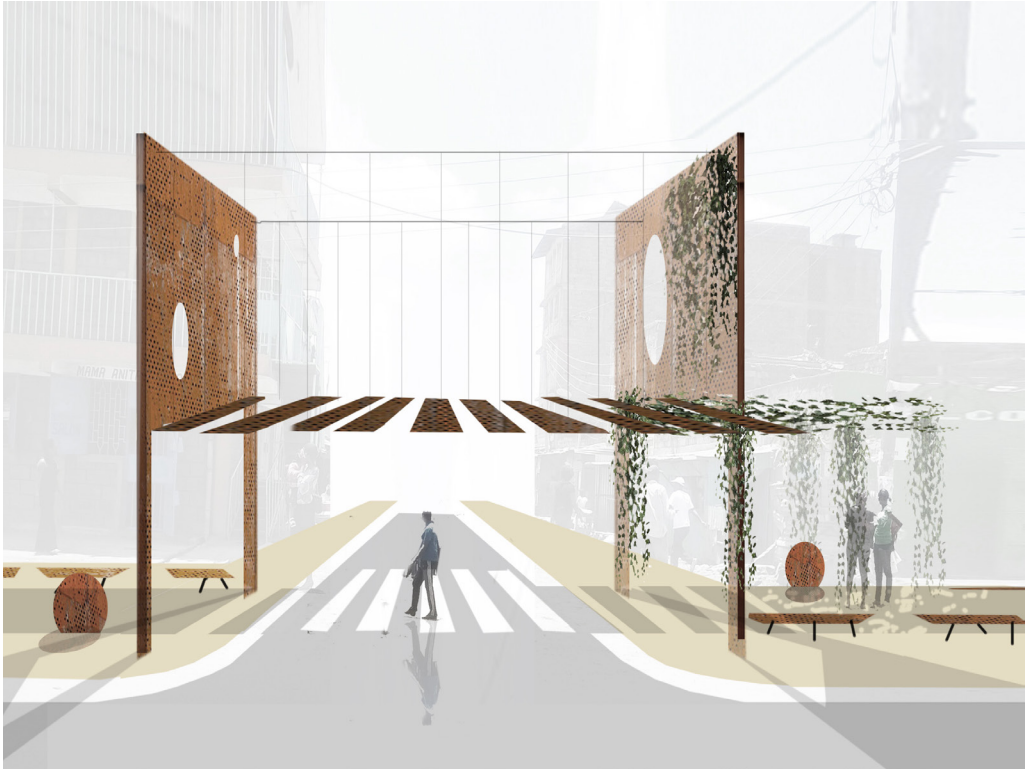


Figure 16: Initial gateway proposal. According to Cave Bureau, the design was slightly modified based on certain discussions regarding the branding of the project. For example, the two side squares were replaced by two triangles that represent the letter ‘D’ for Dandora. Source: Cave Bureau

was finally launched around April 2018, almost two years and six months since the Minecraft workshop.

4.2. Mind the Step, Jardim Nakamura in São Paulo, Brazil

Mind the Step is an initiative composed of several projects and conducted by Cidade Ativa, a nonprofit organization located in São Paulo. The initiative's purpose was to rethink São Paulo staircases as a public space and not just a route for people to pass through. The case that interests this research, the one that integrated Minecraft in its process, lies in Jardim Nakamura, São Paulo. Unlike the first case, UN-habitat was not in direct contact with the local community; The organization awarded this grant to the Healthbridge Foundation of Canada, a partner of UN habitat, and its goal was to run several small public spaces interventions in different countries. Cidade Ativa received the grant through the Healthbridge foundation. A year later, Cidade Ativa tried to apply directly to the UN-Habitat grant but did not receive any funds (Cidade Ativa, personal interview 2020). The initial budget was estimated between ten thousand and fifteen thousand dollars, with added funds from some donations and the local government budget (these latter sources virtually matched the initial budget) (Cidade Ativa, personal interview 2020). An initial meeting took place in March 2018 to explain the project to the local community and to attract the support of stakeholders. On April 17 and April 19, the team collected data about pedestrian traffic on two different staircases and, later, based on the analysis of the number of people affected, chose the Jardim Nakamura site. Cidade Ativa sent photos of the site to the Block-by-Block team to prepare the base model (Cidade Ativa 2018).

The Minecraft workshop, lasting around twelve hours, took place in a school close to the staircase between May 24 and May 26, 2018. The team rented the school's computers for the duration of the workshop, and the Block-by-Block Foundation sent a technician to run the game. Cidade Ativa hoped seniors would participate, but only students did so, seventeen of them in all. The students designed nine different models that they combined by the end of the workshop into a one map. The map included benches, lights, and wall art (Figure 17). During the workshop, the team did not explicitly speak with the players about the budget. Instead, when players proposed an idea, the team informed them whether it was possible but did not prevent them from adding it to the model (Cidade Ativa, personal interview 2020). As expressed during our interview, since this project was Cidade Ativa's first to include

Figure 17: Final proposed model by players. The yellowish tiles were for people with visual impairment. Players added two benches and a black table every wide step with red and blue colours. There also added a tree on the top and they did a little plaza-like. Source: Cidade Ativa, 2018

Minecraft, and the team was not sure of the results, it did not want to rely on Minecraft as the only engagement tool. Therefore, the organization applied the old guidelines it used in its previous projects, hoping also to attract a larger public. It threw an on-site engagement party that took place on May 26, 2018, the last day of the workshop, and it displayed panels on the street's wall through which the neighbours could identify the main urban issues.

On June 19, 2018, three weeks after the workshop, Cidade Ativa presented the architectural draft to the participants of the Minecraft workshop and to those at the engagement party, all of whom approved the design with some modifications. (Some neighbors, for example,

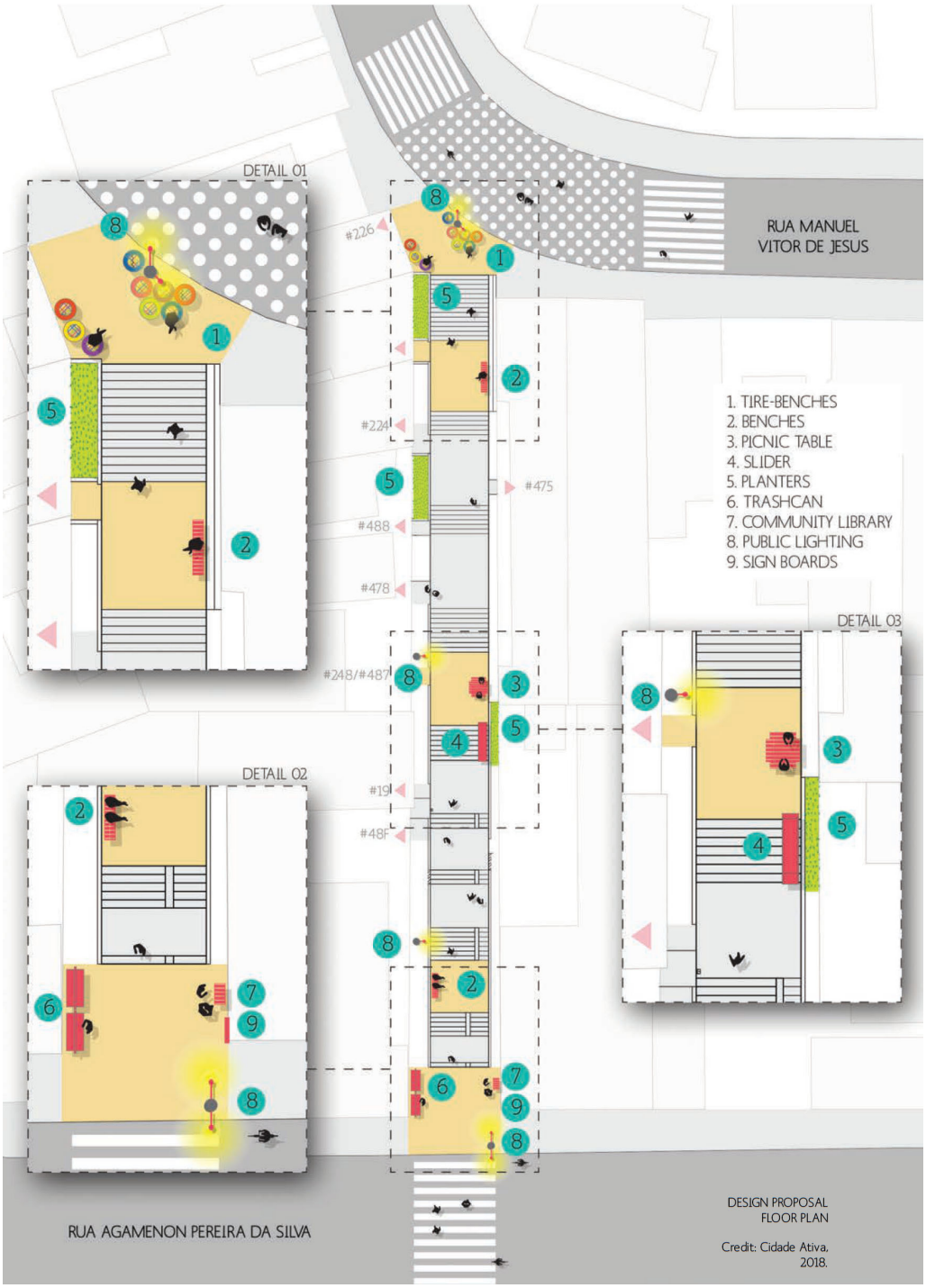


Figure 18: Design proposal developed by Cidade Ativa. Benches and seating were differently organized since some neighbors did not want to have benches in front of their houses. They also added to the design a public library and a slider Source: Cidade Ativa, 2018

did not want to have tables and chairs next to their house) (Figure 18). On June 28, the firm received the approval for participation in infrastructural work (floor, steps, LED lights, and water drainage) from the local government. As in the first case I discussed, the on-site work consisted of two parts: the infrastructural work and the furnishing work. The furnishing work took place in the form of a workshop on the August 3 and August 4, during which architects—in collaboration with the community—designed and built the furniture. The infrastructural work by the local government took place before the on-site workshop and the work took 10 days in total (Cidade Ativa, 2018).

4.3. Former Marketplace in Pristina, Kosovo

The Municipality of Pristina started the Block-by-Block project in the Sunny Hill neighborhood in cooperation with UN Habitat with an initial budget of €166,274.11 (Matias 2018, 12). It aimed to remap the old market located on "Rruga B" street.

The city initiated a public information meeting about the project on September 3, 2015. More than seventy residents participated in the fourteen-hour Minecraft workshop that took place at a college for four days starting on September 11, 2015 (Bllok pas Blloku Prishtinë 2015). The workshop opened with discussions about urban design and public space. Every team, using Minecraft, modeled different solutions. Participants presented seventeen proposals and then voted on which to implement in the final design. Participants' designs included a wide variety of ideas including a footbridge across the street and adding speed bumps for safety, building a small open library, climbing walls, and an amphitheater, and even creating space for parking cars (Rexhepi et al. 2016). After the voting, participants cocreated the final design on a multiplayer Minecraft server (Figure 20). As in the two previous cases I described, the workshoppers provided a matrix presenting the amenities the participants desired and listing the number of votes each item received. Then, designs and the matrix were presented to the architects at the office for Urban Regeneration (Ton Le 2017).

Within two months, the architect of the municipality revisited the designs and—based on the project's budget—used 3-D architectural software to produce the first architectural draft, which was presented to the public on December 10, 2015 (Figure 19). The final design featured a range of facilities, including gardens, comfortable resting places, a playground, and a skate park. However, the young participants from the workshop did not take part in the phase during which the last decision was made (Ton Le 2017). The municipality put the

Figure 19: A 2D reconstruction by the researcher for the final proposal developed by the architects from the municipality. Source: Bllok pas Blloku Prishtinë Facebook group

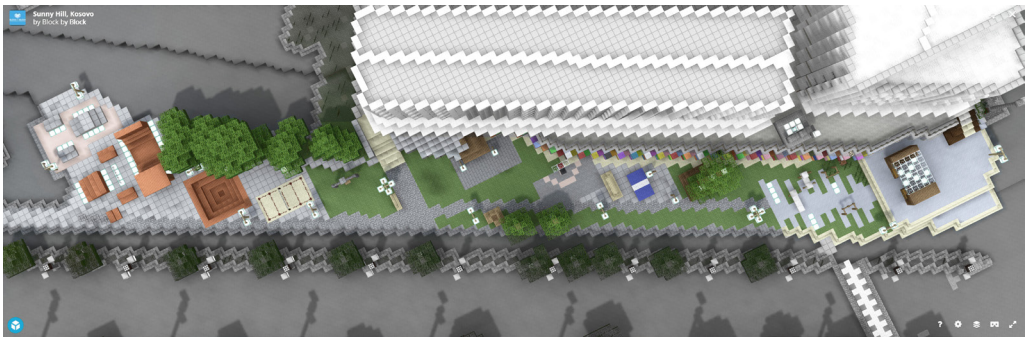


Figure 20: The co-created final Minecraft model for the Marketplace. Source: UN-Habitat Sketchfab account.

project out for bid, which also means that the community did not participate in construction. The winning contractor began the project on 15 April 2017, planning to be finished in ninety working days. Instead, as the mayor announced, the construction was actually completed in May 2018, two years and eight months after the Minecraft workshop.

But a social audit from June to November 2018 by the Group for Legal and Political Studies (GLPS)—an independent, nonpartisan and nonprofit public policy organization based in Pristina—assessed the park situation and painted a different picture. The published report indicates that only 70 percent of the work was completed (Matias 2018). The audit indicated two reasons this project went slowly and remained uncompleted. First, the contractor did not respect the deadlines, so UN-Habitat withdrew fifty thousand dollars of funding from the project. Second, for a long period no project coordinators from the municipality oversaw the progress of the work after the original project coordinator retired. In addition to those problems, as the team learned, "the project proposal originally designed by the citizens of the community [was] not the same as the one the municipality contracted the company for" (Matias 2018, 1). And, too, the team, after conducting interviews with the neighbors, sought

to increase the safety and security of the park's users by building speed bumps in the streets close to the park (a similar proposition to the one made by the participants in the workshop). The team also requested putting green fences around the area (Matias 2018).

5. Critical Analysis of Cases

5.1. Player Lens

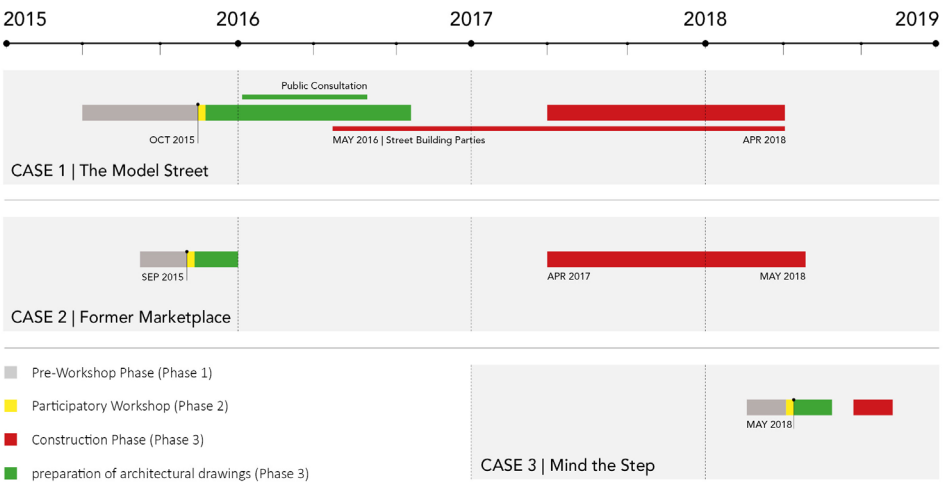


Figure 21: Illustration by the researcher that shows the timeline of the three projects based on this research interpretation of the Block by Block guidelines. It demonstrates how the Minecraft workshop— the high point of players engagement —occupies a little space compared to the other phases

From the perspective of a user and a member of a community, the involvement of players in the process seems very limited. Participants are fully involved only in the second phase: that lasts between two and five days, a very short contact time in the scope of the entire project, which ranges from six months (Mind the Step) to three years (Model Street and Former Marketplace). Third-party organizations (e.g. FyreUK) produce the map in the first phase which means that participants do not map their existing spaces by themselves. The second phase represents the high point of participant involvement. Along with site visits, participants in this phase use Minecraft for their main tool of space production. Players usually abandon the playful maps they develop once the workshop ends. The professional designer, in the next phase, uses a different CAD software to regenerate the drawings. These then become the

basis for any further discussion or feedback till the implementation of the project, when the initial map created by play becomes useless. Consequently, after losing any visual means of design and communication, players find their involvement notably reduced in the remaining phases of the projects. Participant involvement becomes limited to attending perhaps a meeting or two after the architect finishes the detailed drawings or, possibly, it involves some participation in the construction phase, which varies from case to case.

Another factor that limits the involvement of participants and their attachment to the project is the gap (Figure 21) between the design phase and the implementation phase. Both the Model Street's case and the Former Marketplace's case show a gap of approximately thirty to thirty-two months between the production of maps in the game space and its reproduction in the material space—a gap that risks disconnecting the produced maps in the physical space from its original creators, that is the players. It is a disconnect that can risk weakening the sense of belonging the participants once enjoyed while working on their Minecraft projects.

The budget becomes a crucial factor in the process. As described by von Heland, Nyberg, and Westerberg (2015), this may cause some players to experience a tension "between embracing creativity and the unknown budget reality of the whole revitalization project." (11) Usually—if the workshop is composed of young participants—organizers do not explicitly share the budget's numbers, as win my second case. In the case of Former Marketplace, participants remained fully engaged and active, their belief that they could make a change in their public space motivating them to immerse themselves in the game space. When the budget was considered later, after the municipality received final recommendations, the result was a prioritization of cost over participant imagination.

In addition, the Block-by-Block initiative adopts a Minecraft technocratic language (Neuwirth 2016), which considers Minecraft as a potential ICT tool applicable to every project and every geographical context, one that fits all the conditions. This is a kind of technological determinism that can be more harmful than helpful to some communities. To play Minecraft in this context, a computer or a laptop is needed first, and then players need to buy Minecraft's license—a luxury many communities this initiative targets can hardly afford. Equipment in my first and second case was brought on site exclusively for the duration of the workshop. This does not discount the role a video game can play in redesigning public spaces, not looking at it from a technological determinism aspect, but looking at it as another

expansion of space—a space where its algorithm is in our hands and not in the hands of an institution. Instead of limiting an imagination, space can help open up an imagination.

Finally, participants were not active in the construction work in the Former Marketplace case. On the other hand, the Model Street and the Mind the Step's cases showed participant involvement in the construction phase. But for participatory design to be democratic, communities should build what they produce during the original workshop; otherwise, it risks turning the work on design with the architect, NGOs, and municipalities into labor instead of community engagement. All of which leads me to the following question: Did the final constructions resemble the maps produced earlier through Minecraft?

5.2. Spatial Lens

From a spatial perspective, comparing the maps produced during the different phases shows that between the first maps produced by participants and the final constructed project by the city council, a gap exists between the things people imagined and those the architects, stakeholders, and authorities built (the Mind the Step project is a small urban intervention and therefore differences were not highly noticeable although some elements, like the slider, were almost impossible to create in Minecraft). Although the Block-by-Block position, as previously explained, confused the use of Minecraft as a participatory design and as a communication tool, I suggest that three reasons explain this gap.

First, the scaling of the Minecraft map is fixed. The firm FyreUK employs a scale of one block equals one meter (Minecraft 2013). This scaling is desirable in using Minecraft to construct a world map of a physical space because it slightly lessens the effort of building a base map. But the limits of this scaling system become obvious when working on the redesign of the public space. At that point, the players are limited in terms of their design capabilities. For example, for players to design a seat, they will probably use a half block equals 0.5 meter. As a result, there will be an abstract representation of the seat (as in the Mind the Step's project). Here, the results cannot be understood as an abstraction of players' ideas. Rather, it restricts players' imagination in design and space making.

Second, as the collected data in my three cases reveals, participants played Minecraft on average for twelve hours, a low number compared with the hours a trained architect needs to prepare a project's initial drawings. In the three cases, the architect needed between two weeks

and two months (in some cases it took more time to consult public's opinions) to prepare the design drawings. Although Block by Block claims that Minecraft is easy to learn, it still takes some time and effort to master its technicalities, enough time to exceed the hours spent in the workshops they organized.

Third, the architect drew plans in a separate process from the community. Knowing that in my chosen cases, most of the workshop organizers have rarely played Minecraft before or during the workshop. In other cases, the architect was not even invited to participate in the Minecraft workshop. The architect depended on screenshots taken from the game accompanied with some text with no active engagement with the players. This decreases community effect on the design process and its final product. By replacing Minecraft with other CAD tools that exceeds players' expertise, players could not actively participate in the decision-making process. The institution (represented in the architect, the NGO and the municipality), and not the community, then becomes the actual owner of the project. Consequently, these hierarchical practices can diminish the space-making interface potential from acting as a space-making interface and render it a more temporary 3-D visualization tool.

6. A Space for Whom?

The cases I have analyzed show traces of agency over participants' choices. This agency sometimes extends to overshadow the ownership of the space itself. As I previously mentioned, the Block-by-Block guidelines recommend offering participants basic training about the public space. In doing so, the experts' risk compromising the community's voice in upgrading their space. They also risk conveying the notion that outside expert brings a power narrative of superiority over the local community (Meissen 2010) and can discount the participants' knowledge of the space to favor the experts' understanding and their definition of what is a public and private space. Remember, NGOs must propose something that fits the budgets of their grants. This already determined vision of the space in a state of production automatically discounts the community design input.

Such initiatives are considered bottom-up (versus top-down) approaches. They claim they apply methodologies that offer a democratic process by making the decisions more inclusive.

However, there is a space of contestation inconvenient for centralized power. The mutable state the game play platform can offer comprises a barrier to the bureaucracy—the systems of agencies that need a rigid and fixed map to proceed. Consequently, centralized powers depoliticize and neutralize the game-space potential in creating a performative map. They fix the map and render the game space more as a visualization tool than a common space. Participatory models, in this case, reinstate the rule of the expert (Mitchell 2002).

I argue that Minecraft's game space does not automatically offer a democratic space for participatory design to perform. As I mentioned, participatory environments are vulnerable to forms of neutralization and depoliticization. Scholars and individuals from the community with shared interests must challenge such bureaucratic practices. Space should be produced through grassroots. Grassroots playful mapping should not aim for the creation of conventional 3-D models or detailed architectural plans. It is at this point that the map stops, becomes fixed, immutable, and rigid. But instead, it should aim to raise a community of playful mapmakers who can use the game space as a common space (Harvey 2012) to carve their interests and produce a map that carries the lines, modifications, and imaginations of its makers rather than the institutional agent.

It is imperative that we explicitly identify the role of a video game in space-making endeavors like the Block-by-Block workshops. It should not be seen as the be all and end all of design, it should be but one stage in a sequence of processes of design that may include one game, multiple games, or many applications. Game space is not often built as a space of design, which means it may be better as a step in a sequence of developments that goes to the stage of design. To design, we need a tool that is better suited for spatial composition, a video game with spatial design in mind, that has an open space able to incubate any spatial imaginary.

The role of spatial professionals in these workshops has become a problem as well, because they become the middleman between UN-Habitat and the community it presumes to serve. The architects possess the exclusionary ability to be the only party that can communicate with the funding body of the project. Applying for a grant and corresponding with international entities is in itself a skill and a privilege not afforded to everybody, as in the case of Cidade Ativa, who tried to apply directly to UN-Habitat as a community but failed. Eventually, the organization become contractors liable to their client (the funding organization) and not the community.

Lately, I have noticed a severance between the architect's final product and the workshop. Which means that architects need to be brought into the video game. The architect needs to be a player and a spatial broker at the same time without undermining the players' imaginary, a sentiment shared by the interviewed practitioners in both cases. The playing architect and the playing community will present a chance to get in touch with the humo ludens and render play as a space of production toward shared imaginations of the built environment without falling in the trap of technological determinism.

Moreover, existing auditing models for participatory initiative such as Block by Block can benefit a great deal from an audit of the game itself, as well as from the game play. Such audits should screen for accessibility to technology and engagement with the interface, without having classicists or ageism hurdle the game. The game itself cannot be enforced. People in a given community interested in civic engagement should have the freedom to choose, to build, or to modify the game space as they deem appropriate for their common goal. Enforcing a particular game or a specific platform means enforcing all the structural and systemic problems that come with the game.

7. Conclusion

Researchers have already acknowledged that participatory design is a flawed process, and they have been resisting it for decades. Looking at these cases in good faith, if there is a design intention, it has to include people with an explicit awareness of the systemic mechanisms of exclusion; the system of governance that controls participation is problematic to begin with. The involvement of video games generally in the participatory processes is not a de facto assurance of increased equity in the historically flawed participation models.

However, video games remain a tool of outreach that can be useful to the democratization of decision making, especially for those decisions aimed at developing the built environment. They often do not push reform of the whole structure of the participatory process because video games bring to the process many structural flaws of their own. In spatial production especially, the games bring additional power hierarchies because the space inside a video game as well as the space of play—the space where participatory workshops take place—are

often pre-constituted, and allow limited control by the participating player. Minecraft is no exception. As a video game, it is embedded with institutional and colonial forces.

In the cases I have studied, we see the institutional forces at work preventing true access to space making by both Block by Block and Minecraft. Each brought a set of accessibility limitations to the player and to the community. The UN-Habitat–funded scheme presented a contingency of a middleman in NGOs and contractors along with a lack of screening for strong relations between these agents and the community they presume to serve. Minecraft brings in an additional space of exclusion with the needed computers and hardware often unavailable in disenfranchised communities and the colonial and restrictive origins of the game space itself.

I am neither pessimistic nor optimistic about the role of video games in promoting democratic participation and space-making, despite my conclusion that neither top-down participatory schemes such as Block by Block nor neoliberal game spaces like the one in Minecraft are the right answer to the problems involved. Nevertheless, I see a chance for the use of video games that are grassroots made and targeted.

Chapter 4

How do we See the Gamespace?

This article proposes to investigate the gamespace through its coding language and beyond the moving visuals. This text posits that while video games project mutable and stimulating imageries, the knowledge and language transmitted by the coded space or the given map, the backdrop of these games, remain fixed and immutable. Moreover, if video games are rooted in institutional and systematic white epistemologies, the transmitted knowledge becomes racist, colonial, and exploitative. I apply a comparative analysis between two cases. The first case examines ludic participation by integrating real-world digital mapping interfaces (e.g., Google maps) in location-based games. Through my analysis, I look at the implications of Niantic, the developer of Pokémon Go, shifting from Google maps to the open-source participatory interface Openstreetmap (OSM). The second case reflects on protesters' narrative embedded in video games developed by AAA game studios versus small independent studios with a focus on the video game Riot: Civil Unrest (2019). Building on Mirzoeff's work that defines Visuality as an apparatus of spatial surveillance and control, I argue that the gamespace is also subject to corporations' neo-colonial narratives. In Video games, the instrument of Visuality lies in its code. Therefore, to confront state and corporation exclusive ownership of Visuality, we need to hold over code to have true resistance and democratic participation and engagement in making the gamespace.

Submitted for review to be included in an edited book titled 'Depictions of Power: Strategy and Management Games' as part of Bloomsbury collection "Approaches to Digital Game Studies." Some excerpts has been published on the online platform of Futuress.

Mapping Code Policing in the Gamespace: A Comparative Study of Pokémon-Go and Riot: Civil Unrest

1. Introduction

The space in video games is inherently political as it echoes the material space. The gamespace has been institutionalized within neoliberal and neocolonial systems (Harrer, 2019 & Dooghan, 2019). Neo-colonial systems are bringing the same unjust mechanisms of surveillance and spatial control from the physical space to the gamespace. They utilize code to exacerbate spatial injustices, extract information from players and dispossess their agencies over the gamespace. Consequently, the democratic reach over the gamespace has been limited by dispositioning players from the means of production of said space. A performance that puts in question the designer's agency over the written code and urges the necessity to question the nature of the rendered gamespace, especially since the history of video game-making is industry and military-oriented (Dyer-Witheford & De Peuter, 2009). A history that gives privilege to technological superiority and capital profit instead of standing against systemic oppression.

Then, the central question is how -from a decolonial point of view- can we lay spatial claims over the gamespace to serve a social justice agenda? This article aims to confront code in video games through its systemic procedures[1] to assess its effect on generating democratic spatiality and its impact on altering politics. I am concerned with two performances of democracy: One is participation, and the other is protest. Both are essential facets of civic engagement and have carved a significant space in game studies over the past decade.

1.1. Ludic Literature on Spatial Participation and Protest

Video games have been an integral part of cities' contemporary participatory practices. One form of these practices is the appropriation of existing video games (e.g., Second Life

1 In game studies, procedural rhetoric was originally proposed by Ian Bogost in his 2007 book ***Persuasive Games: The Expressive Power of Videogames.***

and SimCity) or the development of cities-oriented serious games (e.g., B3-Design Your Marketplace, 2014 and Plan Your Brisbane, 2018) to let communities contribute to the redesign of their neighbourhoods (Tulloch, 2008; Poplin, 2012; Tóth, 2015; Gordon & Manosevitch, 2011). Since its introduction in 2011, *Minecraft* has become one of the most used games in participatory workshops. While institutions like Mojang (the developer of the game) or the UN-Habitat are promoting *Minecraft* as a space that offers a democratic and a bottom-up process, I argue that *Minecraft* as a participatory tool is embedded with institutional and colonial forces that prevent true access to space making. (Bashandy, 2020)

Another forced practice of participation can be found in location-based games (LBGs). Besides the game narrative and mechanics, location-based games essentially depend on two elements: the digital map (e.g., Google Maps) and the player's location. However, and unlike *Minecraft*, participation, in this case, is not a choice. For example, *Ingress* (Niantic, 2012) is a location-based game that let players collect items all over the city. The game resulted from a collaboration between two exploitative corporations: Niantic, the game developer, and Google Maps, the digital map provider. As pointed out by many researchers, players were involuntarily participating in improving Google's digital maps by sharing their location information and captured photos (Zuboff, 2019). As for Niantic, the behavioural data they collected from players has been used to develop one of the most popular games ever: *Pokémon-Go*.

Over the past two decades, protest in video games has been mainly featured in AAA[2] games such as the *SimCity* series (1989-2013) and *Tropico* series (2001-2019). Like Niantic, AAA studios principal motivation to develop games is profit. In these games, protests (or sometimes they are featured as riots or rebellions) are usually pictured as violent irrational activities that need to be oppressed. The democrtization of means of production of video games accompanied by the global dissent against oppressive systems in the past ten years have produced a new typology of videogames that centre the act of protest and posit it as a democratic mechanism against social injustices. (e.g., YellowUmbrella 2014)

While participation necessitates citizen's involvement with the hierarchical systems (government, city council, urban planner, etc..), protest only works against these systems to claim social justice. Playfulness has been an interwoven part of social movements. Tactical

2 Video games produced by a major publisher, with allocated huge budget for both development and marketing.

frivolity, carnivalesque, or dérive are all forms of bodily performance that use ludic tactics to disturb, even if temporarily, the controlled and restrained spaces of protest. As a part of popular culture, video games have become a central feature of the protest movement. From the 2007 strike of Italian IBM workers in the virtual space of Second Life (2003) against the low wages to protesters in Tahrir square in 2011 using video games analogies such as "we faced the monster, beast mode, game over." And from the organization of the game-making event (GeziJAM) during the 2013 Gezi Park protests to developers making games for protesters as in *Riot: Civil Unrest* (IV Productions, 2019) and *Tonight We Riot* (Pixel Pushers Union 512, 2020), we find that video games were invoked, played, made, subverted, and challenged in the context of civil disruption in protest.

1.2. Methodological Approach

I apply a comparative analysis between two cases. The first case examines ludic participation by integrating real-world digital mapping interfaces (e.g., Google maps) in location-based games. Through my analysis, I look at the implications of Niantic, the developer of *Pokémon Go*, shifting from Google maps to the open-source participatory interface OpenStreetMap. (OSM) The second case reflects on protests' narratives embedded in video games through *Riot: Civil Unrest (2019)*, a video game developed by an independent studio through an Indiegogo crowdfunding campaign. According to the game bio, the game creator, Leonard Menchiari, has participated in the NoTAV protests against the high-speed train in Italy. The game offers four main stories from Italy, Spain, Egypt and Greece. In this article, I reflect on the *Arab Spring* story in Cairo in 2011. I look at the game from my position as an architect who has the chance to engage with the actual space and the gamespace of protest. *Pokémon Go* share similar and opposing characteristics with *Riot: Civil Unrest*. In both cases, the camera uses the top-down viewpoint. Additionally, a virtual representation of our physical territories is incubated in their game narrative. While in *Pokémon Go*, players' bodies occupy the physical space, in *Riot: Civil Unrest*, players are virtually projecting their bodies into said space.

In 2008, Celia Pearce proposed "interpretation" as a method to read the gamespace. Pearce starts from the point that video games such as Myst (Ubisoft, 1993) has developed a new language of "spatial storytelling". Therefore, players need to practice "spatial Literacy" to unfold the story of the game. (2008) Reading the space, following Pearce's method, is reading

the *moving image* that is projected by said space which, according to her, is a must practice in order for players to progress in the game space. However, *to progress* in the game means *to consent* to the spatial story transmitted by the game. Consequently, the player becomes a mere recipient of the moving image and the system of ideologies embedded in it. Moreover, if this gamespace projects a contested space – as in protests, a space that carries disparate stories – then which spatial story does the developer project through the moving images, protesters' story of resistance or the story of policing crowds?

As this article is concerned in exposing systems of injustices embedded within the game narrative by its developers. I propose *procedurality* as a method to read the gamespace. *Procedurality* is the ability of digital systems to execute a series of rules (Murray 1998, p.71) that is bound to its algorithm. By *procedurality*, I mean reading the narrative embedded within the series of processes employed by its developers to shape games' rules and mechanics that precedes players interaction with the game itself. In a second step, I highlight how players performance is disturbing, even if temporarily, theses procedural systems. This text posits that while video games project mutable and stimulating imageries, the knowledge and language transmitted by the coded space or the given map, the backdrop of these games, remain fixed and immutable. Moreover, if video games are rooted in institutional and systematic white and Eurocentric epistemologies, the transmitted knowledge becomes racist, colonial and exploitative.

2. Case Study: Location-Based Games

Location-based games (LBGs) are games that use real-world information and geographic information (GI) technologies. It depends mainly on the player's location within the physical space. Although hundreds of LBGs have been produced over the past ten years, the model of play developed by Niantic in *Ingress* or *Pokémon-Go* remains the dominant prototype implemented in most developed games. Parallel to LBGs, it exists another category that Sybille Lammes and Clancy Wilmott define as 'quasi-games' (2018). This category is composed of location-based apps that make use of maps and have playful elements. Location-based games or quasi-games define the object of the play itself. Instead, this article proposes a different approach to understand this phenomenon by defining the interface from a user perspective based on the playful production or consumption of the map: How does the player interact

with the map? Does the player consume the map while playing or produce a new one? While consuming the map means that players are mere receivers of the developer's experience, producing a new map means that players are creating a new meaning and consequently appropriating the map and the game to their own experience.

2.1. Pokémon-Go & OpenStreetMap

OpenStreetMap (OSM) is a free crowdsourcing mapping platform that depends on users' input to create and update an editable geographical map of the world. OSM is commonly used to support humanitarian efforts (Herfort & al 2021), especially in those marginalized areas that maps of Google does not cover. However, the evolvement of OSM maps, accompanied by the increased subscription cost to use Google Maps' data, has attracted private corporations (e.g., Amazon, Facebook, Apple) to use OSM instead. (Anderson & al, 2019) Following the same path, Niantic switched its map provider from Google Maps to OpenStreetMap. The shift was early spotted in 2017 by *Pokémon-Go's* active community on Reddit groups (e.g., TheSilphRoad subreddit). *Pokémon Go* is a location-based game in which players catch Pokémon characters in random locations. These locations are called "spawn points." When players' communities on Reddit realized that the location of spawn points in *Pokémon Go* is related to the function of the space, they participated in editing the map on OSM.

To edit a map, OSM gives players access to *Bing* satellite imagery provided freely[3] by Microsoft for the OSM community. Over the satellite layer, Players use vector shapes to draw streets, buildings, parking, or border lines. They also can add trees and benches or assign buildings' heights or road speeds. After, players need to link these drawings with the corresponding tag (e.g., street, building, amenity, or leisure type). As many players live in neighborhoods with incomplete digital maps, their motivation was to map the areas where they live, hoping to attract more and variant spawn points and, consequently, different Pokémon characters to their neighborhoods. Nevertheless, other players sorted out the algorithm behind the distribution of spawn points and in-game items (e.g., PokéStops and gems) and modified the OSM base map with *untrue* (false) inputs. For example, many users redefined their home backyard on OSM as 'parks' or 'lakes' to attract rare items around them.

The OSM response shows how disturbing players' participation was for the system.

3 That is how Microsoft promote their service. The truth is Microsoft benefits also from users input to the map as in the case of their games (Microsoft flight Simulator)

While from one side, their graphs showed a notable, even if temporary, increase in users' contributions to the map. On the other side, they were concerned about their maps' integrity since players are projecting *false* data to their *truthful* map. With no reaction from Niantic, and in 2018, they published an April fool faking that they were in contact with Niantic and decided to ban users/players who do not respect the 'truthfulness' of the map. Powerless, OSM depended on its volunteer community of cartographers to fix the map. They relied on the fact that Niantic does not update the game regularly and consequently, players may lose interest in modifying the OSM base map. Researchers from cartographical communities have developed many techniques to spot players mapping patterns and behaviour in OSM to reassociate the areas with the correct tag. (Truong & al, 2020).

The association between *play* and OpenStreetMap is not something new. Since its release in 2004, and later, with the promulgation of the concept of *gamification*, digital mapmakers and cartographers took advantage of this concept by implementing game elements in digital mapmaking interfaces in their ongoing trial to attract people to invest in OpenStreetMap. Interfaces such as *mapRoulette* (2013) and *StreetComplete* (2017) motivate users to complete the missing data in OSM by implementing game-like design elements such as points, leaderboards, challenges, and badges. Although such gamified interfaces may attract more contributors, their impact remains limited. Contrary to the case of *mapRoulette* and *StreetComplete*, in the case of *Pokémon Go*, players' motivation to contribute to the map of OSM is a location-based game and not a gamified interface, which has motivated a vast external community to contribute to mapmaking.

Modifying the gamespace is a frequent act among players. Control and agency of players over video gamespaces have been contested for a long time, notably by using *Mods*. *Mods* is an abbreviation of the word "modifications." It points to the practice in which players or users modify and create new content for games. This practice often aims to self-tailor the player's spatial experience. Mods can be seen as a way to play with reality: imagining multiple and alternate realities and sometimes subverting realities. While modifying the gamespace on computers and consoles only affect the physics of the virtual world, in the case of Niantic and OSM, the players are not only changing the fictional map of the game, but they are also modifying the digital map of OSM. Such performance created a great discord between the cartographers' community, the players' community, and Niantic. From a player's point of view, I call such performance a way of "Modding The playable map." However,

published research from cartographers' communities aligns with Niantic's definition of such performance as *cheating* and identified it as a "vandalization of the digital map" (Truong & al, 2018; Juhász & al, 2019; Juhász & al, 2020).

Over the past decade, scholars have pointed to LBGs' spatial and urban problems, including surveillance concerns (Jin, 2017), the safety of the players in the public space (Colley & al, 2017), and inequality of item distributions (Juhász & Hochmail, 2017). The game interface, narrative, and social implications have been thoroughly questioned in these writings. However, little attention has been brought to the map itself, which in the case of LBGs, is a manifestation and a symptom of the code. Neither the player nor the game designer owns the digital map-controlled and monopolized by private corporations. Not owning the map means that the game designer and the player neither own the gamespace nor its code, implicating the need to dissect the map to interpret such performance.

2.2. Dissecting the Map

> One example will illustrate what I mean. La Pérouse travels through the Pacific for Louis XVI with the explicit mission of bringing back a better map. One day, landing on what he calls Sakhalin he meets with Chinese and tries to learn from them whether Sakhalin is an island or a peninsula. To his great surprise, the Chinese understand geography quite well. An older man stands up and draws a **map** of his island on the sand with the scale and the details needed by La Pérouse. Another, who is younger, sees that the rising tide will soon erase the map and picks up one of La Pérouse's notebooks to draw the map again with a pencil... What are the differences between the **savage** geography and the **civilized** one? (Latour, 1986, p.5)

La Pérouse's voyage was a colonial attempt to map and describe many areas of the world still unknown to European geographers. Latour evokes a story about an old Chinese indigenous man and a French geographer in which the indigenous draws a map in the sand while the geographer draws the map on paper. When the tide comes, the map on the sand disappears while the one on the paper is preserved. If the map disappears, how can geographers transport to the emperor of France a true map that was only seen by the eye? Here, Latour differentiates between "the savage geography" and the "civilized geography" to propose that maps are/become what he defines as "immutable mobile" which means "... to invent objects which have the properties of being mobile but also immutable, presentable, readable and combinable

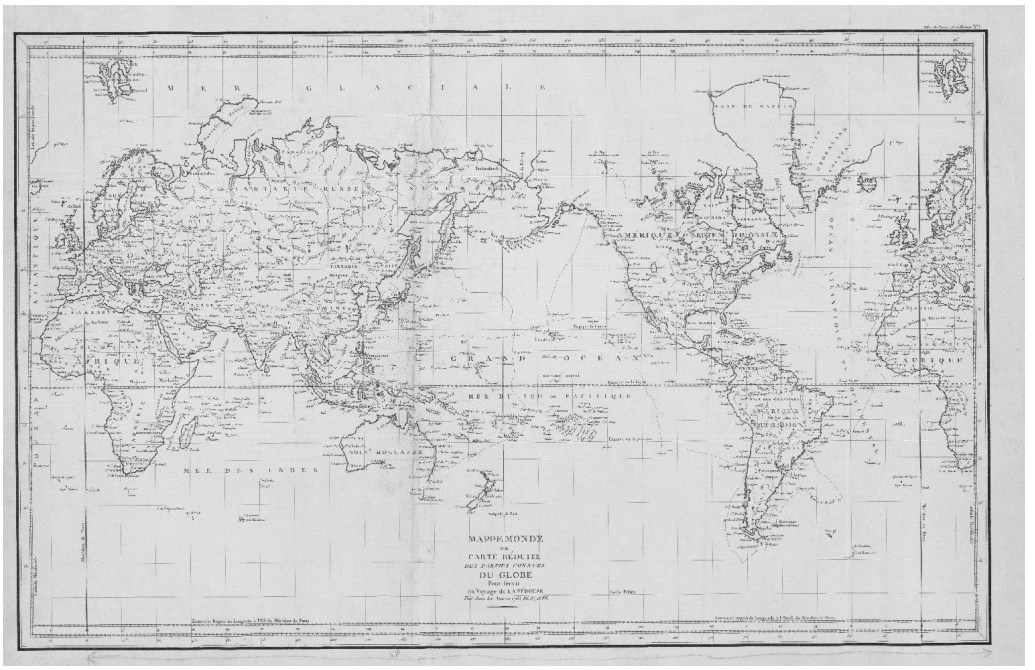


Figure 22: The map from la pérouse voyage. Source gallica.bnf.fr / BnF

with one another." (Latour 1986, p.00)

Latour's text reinforces the bias toward a Eurocentric history of progress (Leca, 2017, p.141). As Sheila Jasanoff explains: "Latour's language preserves the hierarchy of centre and periphery. The relationships he describes appear natural, part of the order of things, and well in line with France's famed mission civilisatrice." (Jasanoff 2015, p.18) "Savage" is a common term in the colonial discourse to inferiorize the behaviour of colonized bodies. Latour's distinction between "savage" and "civilised" imposes a certain privilege for the colonial maps documented and transported on papers rather than the knowledge projected on the sand. However, the map drawn on the sand is documented in the collective memory in which these maps and images are deposited and reformed to produce a virtual map, which according to Agha, is "far from savagery." (Agha, 2019)

These colonial characteristics of the map – being immutable and mobile – has also served the interests of the nation-state. With the birth of nation-states, maps managed to impose a collective image of what a state and its borders look like. Maps are images with clear recognizable shapes that can be seen, touched, played with, or put on a wall. Consequently,

board games projecting maps have played a significant role in transmitting such imaginary. For example, Rambles Through Our Country is an 1881 board game that lets players become familiar with American geography and the treasures of the United States. The game was created with the promulgation of maps during the 18th and 19th centuries. At that time, the United States was a collection of British, French, and Spanish colonies. And as the United States grew, the game continuously changed its shape and promulgated the latest version's image. Therefore, the map as a powerful visual communication tool was implemented by nation-states to let citizens recognize its borders.

The notion of "immutable mobile" asserts the position of maps not only as tools of fixed knowledge but also as instruments of power, domination, and control. Maps had to be fixed and immutable. The legitimacy of maps is then evaluated by how truthful the knowledge they transmit. Maps became an instrument to control bodies within nation-states or colonized territories.

2.3. Fixing the Map, Fix the Knowledge of Play

The shift to digital mapping in the twenty-first century, especially with the rise of Volunteered geographic information tools (VGI) and Participatory Geographical Information Systems (PGIS), promised the democratization of mapmaking and that maps can be more "mutable." While such progress gave access to a larger community to make maps, the shift to the digital, however, was accompanied by a rise in corporations' interest in maps that monopolized digital mapmaking.

Contrary to maps, video games are "mutable" cultural and social artifacts that can incubate different realities and imaginations and accept various interpretations. Video games are far from being described as fixed or *truthful* experiences. Building on Latour's proposition of "immutable mobile," Sybille Lammes (2009) argues that bringing maps into digital play has rendered the *immutable* map *mutable*. Analyzing empire-themed video games such as *Age of Empire*, (Figure 23) she claims that the way the image of the map changes due to continuous player travel renders the map mutable instead of fixed. In location-based games, Lammes and Wilmott suggest that "the image of the map itself has lost some of its immutability" (2018, p.655). Lammes proposes that:

Figure 23: Screenchot from the video game Age of Empire III

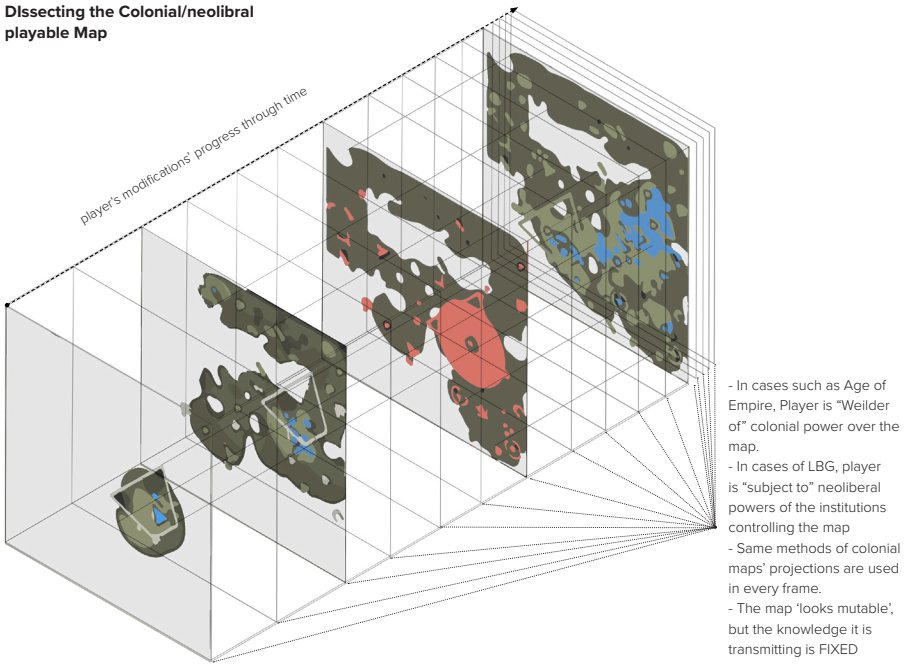


Figure 24: Illustrated by the author, the change in the map-image does not mean the transmitted knowledge is mutable. knowledge remains fixed.

> Games such as Age of Empires (1997-2005), Rise of Nations (2003), and Civilization (1991-2005) invite the player to go on an imaginary expedition, where travelling through landscapes creates a story. During this process, maps and landscapes are mutable instead of fixed, changing appearances according to where the player travels and what is being altered in environments". (Lammes, 2009, p.223)

Nevertheless, I argue that bringing the fixed map into video games is fixing the gamespace instead. Thus, the gamespace transmits the same knowledge embedded in the map. Since the maps used in the *Age of Empire* or *Pokémon Go* are either colonial or neo-colonial, the gamespace mirrors the exact unjust mapping structures and mechanisms of control. Whether playing *Age of Empire* or *Pokémon Go*, the player is continually wielder of or subject to hegemonic power, respectively. In *Age of Empire*, the map is the gamespace itself, and the player is the European colonial who has perpetual control over the map. In *Pokémon Go*, the player is continually subject to neo-colonial algorithms that control the player's movement in the public space. Subsequently, the continuous change in the imagery of the map due to the player's movement project counterfeit imageries of a "mutable map" while dissimulating the colonial and exploitable knowledge which remained fixed and immutable (Figure 24).

Looking at *Pokémon Go* from this perspective, firstly, bringing the digital map into gameplay rendered geographical injustices seen. Such injustice is justified by the unjust and biased geographic distribution of spawn points in disadvantaged neighbourhoods. (Colley & al, 2017) The distribution of the in-game items in the Niantic model of LBGs relies on an algorithm mostly tied to the data provided by Google Maps or, later, OpenStreetMap. *Pokémon Go* and the mapping interface become opposite sides of the same biased neo-colonial system, asserting power and control over the playable map.

And secondly, by controlling the map, it becomes possible for Niantic to *fix* how and where the game is played by adding a layer of control over the player's spatial story. This layer contains data about sponsored corporations (e.g., McDonald's) that pay Niantic to create spawn points at their locations that can divert players' movement in the public space. The same control layer banned players who hacked the game from getting *Pokéstops* without moving while allowing it during the pandemic. This decision reflects Niantic's fear of losing its community and consequently losing profit, especially when knowing that Mojang shut down the 2019 LBG *Minecraft Earth* in 2021 due to the pandemic's impact on players'

existence in the public space.

2.4. Whose Map? Claiming by Protest

Research in game studies has heavily expanded throughout the past two decades; however, the interest in understanding the integration of digital maps in video games, specifically location-based games, has recently become left to cartographers' positivist analysis. While using players' geographical data was supposed to contribute to the evolution of location-based games, as predicted by Eric Gordon and Adriana de Souza e Silva in their 2011 book *Net Locality*, what happened is the opposite. Abeba Birhane (2021, p.4) argues that "current data practices, for the most part, follow the rational model of thinking where data are assumed to represent the world out there in a neutral way".

Such a neutral model reduces LBGs into a combination of code and mechanics and strips them from their political, social, and ludic influences. Location-based games, and consequently, the player becomes a servant to the digital map and is stuck in the institutions' realm that monopolizes the process of mapmaking. For the OSM community, LBGs and *Pokémon Go* are seen as a potential gamification interface that can help expand their community and increase the "truthfulness" of the map. And for this to happen, players' interaction with the map must be *disciplined* - in Foucauldian terms.

But, If the map track record is entangled with imperialist histories or neo-colonial domination, a map or a videogame can surely also be deployed to serve the interests of the disempowered and marginalized. In 2019, protesters used custom usernames for Pokémon GO's *Pokéstops* around the Polytechnic University campus, the epicenter of the Hong Kong protest, to signal location status. (Wirman & Jones, 2020) They claimed to be players congregating to play Pokémon GO to circumvent police denying permission for assembly. (Davis, 2020) While this example does not involve active mapmaking work, it shows the agency a map combined with a game can have. Protesters hijacked the *Pokémon go* interface -even if temporarily- to disrupt the controlled, sanitized and spatially restrained events, rendering these places more complex by adding a new layer of located virtuality to the geographic identity of places to serve an actual social agenda.

Figure 25: Poster of protest gathering places that pretend to be for collecting Poké-stops (Vincent BBC 2019)

3. Case Study: Games for Protesters

Figure 26: Screenshot from Assassin's Creed Unity depicting the 1789 Women's March on Versailles. The march was led by women from the marketplace and was one of the earliest events of the French Revolution.

3.1. An Apolitical Space

My interest in studying the phenomena of protest in video games started in 2014 when Ubisoft released the video games *Assassin's Creed: Unity* which took place in aggrieved Paris during the 1789 French Revolution. The story follows Arno, a young man who embarks on a perilous journey to uncover the true powers behind the French Revolution. The game moved me to the core — as only three years had passed since the 2011 Arab Spring — I identified with its revolutionary spirit and the built environment. The urban fabric of Paris is congruent to the planning of downtown Cairo, where my friends and I used to demonstrate.

I wanted to immerse myself in the upheaval led by the oppressed commoners. I wanted to be one of these protesters fighting against the feudal rule, monarchy's abuse of power, and poor economy, the causes strikingly similar to my struggle back in Egypt. However, game's design made the protesting crowd apolitical and passive. Instead of politically active, protesters are passive companions to the main protagonist Arno; helping him hide from Louis XVI's guards within the complex scenery of the game, yet lacking any agency. Even when the game depicted the 1789 Women's March on Versailles, the game striped the crowd of women and

allies from their knives, sticks and weapons and assigned Arno, the male protagonist, the task of protecting the march. The game silenced the crowd by keeping the march of women a backdrop to the protagonist's heroic actions asserting masculinity as a saviour mechanism.

Even though the game reconstructs historical events of protests and widespread discontent, the portrayed crowd doesn't speak up to the power; instead, they are non-player characters (NPCs) following the developers' algorithm. The massive crowd of protesters in the game doesn't aim to foreground the voice of French peasantry's discontent with the monarchy. Instead, it serves some technical purposes to challenge modern computing hardware performances. While the dazzling visuals of the constructed spaces and architecture are breathtaking, the industrial narrative underpinning the bodies of protesters in the game is problematic.

Assassin's Creed: Unity is advertised to have one of the largest animated crowds in the game series' history. Developers promote the capacity of the game space to accommodate 30,000 characters or its ability to hold 12,000 characters in a single frame. Absorbed by a commercial and a technological narrative, players get distracted by comparing the fidelity of crowds' animations to real-world crowds' interactions instead of posing questions about the angry crowd, their social-class division, motives behind the protest or how they ended up occupying the streets of Paris.

3.2. Riot, Civil Unrest and The Premise of Revolution

Riot: Civil Unrest and many other videogames that have emerged in response to global and local protest movements. I saw in the game the potential of gamespaces to resist the systemic and epistemic erasure of traces of the revolution. In the presence of the National Democratic Party (NDP) building, the ruling party till the 2011's uprising, in *Riot: Civil Unrest*. The NDP's building, located in Tahrir square and against which Egyptians have revolted, was set on fire during the events. The presence of the burnt-out building in the game is preserving an image of a building that became a sign of resistance and witnessed the fall of an oppressive era. Especially when knowing that five years later, the building was demolished to uproot the *centrality* of the square and erase its memory, witnessing the birth of a new oppressive era. (Figure 27)

Riot: Civil Unrest was published in early access in 2017. The long-awaited game simulates four

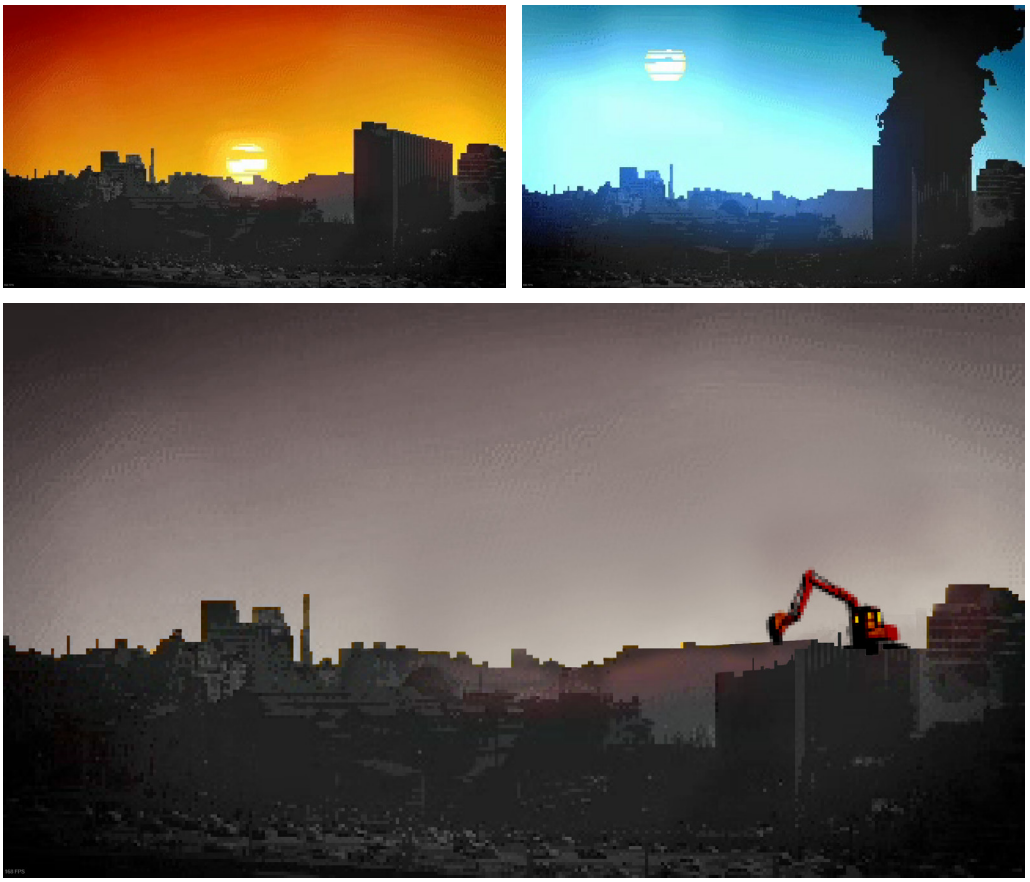


Figure 27: The first two pictures on top are screenshots from the video game Riot: Civil Unrest. The third one is a modified image by the author that recreate the moment the state started to demolish the NDP.

stories from 2011: the No-TAV movement, which took place in Italy, the Keratea protest in Greece, the Indignados movement in Spain, and finally, the Egyptian Revolution. I found the game while researching the space's role during protest, and that focus affected my approach to playing it. I wanted my goal in the game to be always defending the space gained and pushing away the police from that vital territory. After all, is this not what protest is all about, imposing power over contested spaces? As Christian Scholl mentions in his book *Two Sides of Barricades*, "space emerges as a site of struggle not only during but already before (and also after) a protest event." (2012) Reading the excerpts the game quotes from Gandhi or Che Guevara, or the cinematic scenery that precedes the start of the story, I did not have any doubt that this game wanted to offer a different story from those typically present in AAA games (e.g., SimCity) where power, morality and the state are so often aligned.

Nevertheless, in playing the game, my imagination struggled to understand what meta-story *Riot: Civil Unrest* was trying to build! Why does the crowd look so messy and lost in the space versus an organised police force? Why is the only possibility that this game offers a win-lose scenario, and if I lose, why can I not progress in the game? Why must I play as the police to progress in the game? Why do I have to be the oppressor? As Donna Haraway (2020) teaches -in *Storytelling for Earthly Survival*- no matter our trials to find neutral ground, we always stand somewhere from the story. So, where does *Riot: Civil Unrest* stand? Is it a way to maintain "neutrality" and remain "unbiased"?

What is the point of the police winning in *Riot: Civil Unrest*? Is this not what we face in our lives almost every single day! After winning all the five "Arab Spring" stories in *Riot: Civil Unrest*, I decided to be the police in my trials to challenge the game narrative. I managed to pass the first story. The second one, "Friday of Anger Part 1", depicts the events of the 28th of January 2011 that took place on "Qasr El Nile" bridge. Being the police, the game expects me to use some tactical formations to push protesters out of the left side of the screen. At this point, I decided to stop playing the game and let the protesters cross the other side of the bridge to reach the square. (Figure 28) Because the collective spatial imprint I have of this specific day can only handle one unique imagination; the complete defeat and the escape of the police and the full control of protesters over Tahrir square, we cannot lose here!

Figure 28: "Friday of Anger Part 1", depicts the events of the 28th of January 2011 that took place on "Qasr El Nile" bridge. I decided to stop playing the game and let the protesters cross the other side of the bridge to reach the square.

3.3. AAA Narrative: Playing the Oppressor

Nevertheless, *Riot: Civil Unrest* is not the only game that lets players be the police. Being the oppressor is the norm in most AAA titles that feature protests, making *Riot: Civil Unrest*'s position part of the natural order of things. "You have to disperse those parades" "Send police officers to secure the rally and make sure everything goes smoothly!" scream the commands from two video games in which the player acts as a police officer on a mission to contain public protests. But why are there riots in Soho? And why are citizens frightened during the Hamburg demonstration? As a player, you are not supposed to ask these questions, and even if you did, you wouldn't get an answer; your role is to obey and follow precoded commands.

In Sleeping Dogs, you play a male Chinese-American police officer trying to take down criminal groups within the streets of Hong Kong. The protagonist takes advantage of his martial arts skills and police equipment by using extreme violence to accomplish the game's various missions even if the opponents are unarmed. Players can direct violence toward civilians at any moment, as shown in a 2019 deleted YouTube video. (Figure 29) During the burst of the 2019 Hong Kong Protests against the government, a pro-Chinese YouTuber published a machinima — a cinematic animation created with a video game engine — based on Sleeping Dogs. Walking in the virtual streets of Hong Kong, the video reveals an imaginary dialogue

Figure 29: Sleeping Dogs: Screenshots from the youtube machinima video. The video has been removed from youtube recently.

over the original game story. If the civilians resemble those who supported protesters in Hong Kong – like what the Youtuber called ringleaders, a nurse who plotted intentional injuries to Hong Kong police officers or local businessmen who supported protesters – the YouTuber cruelly attacks them. The way game mechanics are coded facilitates a singular imaginary and a particular fantasy of violence, order, and control in which Hong Kong protesters are tortured in the city's physical spaces as well as the cyberscape of video games.

Emergency is a series of simulation video games mimicking real-world activities. Players control the fire and police departments and respond to emergencies, rescuing citizens during natural disasters or arresting law violators. A repeated task scenario through the different series of the game is dispersing crowds and arresting criminals during a public demonstration protest. Nonetheless, the story has changed was slightly modified over the years, from spontaneous protests scattered over the city in Emergency 4, an unauthorized demonstration against the ministry of health in Munich in Emergency 5, to a frightened anti-Islam rally in Hamburg in Emergency 20. (Figure 30) I wonder why the plot has changed from a health/human rights narrative to a right-wing ideological narrative.

At first, I presumed that developers are protecting the mechanisms of democracy the same way Noam Chomsky (2012) is defending neo-fascists right of free speech. But after a few

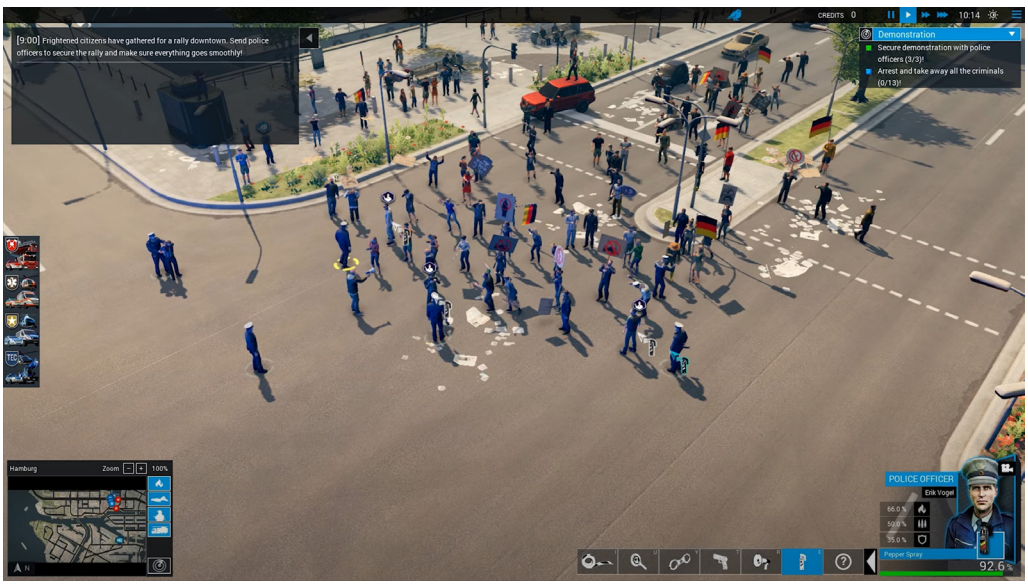


Figure 30: Screenshot from the video game Emergency 2017 during an anti-Islam Hamburg Demonstration scenario. The commands are showed on top left of the screen. The player cannot progress to different scenarios before achieving all the tasks on the top-right of the image

Figure 31: Screenshot from SimCity 4. The game was released in 2003, 10 years after SimCity 2000. In the scene, riots set fire to buildings, bringing the memory of LA riots.

hours of play, it becomes evident that the game does the opposite. The player goes on with the instructions without having the time to make an opinion. What seems to be conveyed here by developers is that the political inclination of protesters does not signify. Regardless of crowds' political standing, unrest must be policed, especially since the game never details the politics behind each protest. To be included in their game space, Emergency and Sleeping Dogs force us to suspend our moral faculties and blindly follow their biases work against our beliefs. The player's only choice is to see protesters as enemies, obey the code, and learn to be a "good" police officer.

When game developers do not use the code to label protesters as a clear enemy, games like *SimCity* antagonize protests and protesters in a different way. *SimCity* is a simulation game. It's aimed at modeling the behavior of an actual city on the computer. Released in 1993, *SimCity 2000* is one of the earliest games in the market that introduced public dissent and defined it as riots. Riots in the game are a threat – caused by increased crime or lack of education – that must be solved as quickly as possible. As a city mayor, the player must violently suppress dissents before thinking about social or economic solutions. According to

US technologist Julian Bleecker, (2004) introducing riots in *SimCity 2000* was a last-minute decision in response to the Los Angeles uprising in 1992. Then the acquittal of LAPD officers involved in the brutal arrest and beating of African-American Rodney King led to the most violent upheaval in the United States since the late 1960s.

Racism was the primary catalyst of the LA riots; however, it is impossible to see racial unrest in *SimCity* series. Riots only happen when the population becomes very unhappy, deprived of essential services or if players intentionally press a button on the screen triggering riots. Thus, the game strips riots from their racial roots, rendering protesters chaotic, passive, and irrational versus organized and spatially aware police. Such awareness is seen in how the game's algorithm performs during these events. For example, a simple google search including "SimCity" and "riots" reveals myriad bits of advice on how to stop the riots: from adding more police stations and prisons through using several police dispatches per riot crowd to demolishing bridges to prevent the spread of riot in the city. (Figure 31)

We often witness these urban tactics in our daily life. Oppressive authorities recognize the role of public spaces in fostering a collective consciousness. Therefore, we see strategies of marginalization and exclusion trying – often successfully – to take the space away from the public. Strategies range from policies of privatization of public spaces and blocking streets and squares to physical and lethal use of police force. Taking down bridges is also a commonly used tactic. Hundreds of Egyptian students took to the streets to oppose the British military occupation of Egypt in 1946. As a response, the army opened the moveable "Abbas" bridge linking Giza and Cairo ¬ leading to dozens of protesters drowning. Seventy years later, in 2020, Chicago police raised the city's bridges during the George Floyd protests to prevent protesters from crossing to the other side.

By separating the racial cause of riots from the magnitude of infrastructural damage caused by rioters in *SimCity* and offering policing tactics as a solution, the *SimCity* narrative purposefully vilifies protest. This practice is particularly dangerous, as *SimCity* is not a combat game but rather a strategic one about city-making in which urban awareness and rationale are the ongoing tactics. While the internet is filled with idealized stories about the game's potential in teaching urban planning and strategy making, However, the more I play SimCity, the more I realize that the game teaches us something problematic about social movements, portraying protests as mindless, irrational, and categorising them as an enemy.

3.4. Playing a revolution in a lost space

From the previous games we can lay out three patterns of spatial injustices that dominate the narrative in AAA video games depicting protest: First, developer in AAA studios tend to depoliticise the gamespace by positioning it in an apolitical position from the narrative of the game. Second, AAA games echo the policing narrative of control by allowing or forcing the player to be the oppressor. Third, the representation of the crowd is predominantly problematic; the gamespace visualizes the crowd as criminal, reactionary, and irrational, failing to have a critical understanding of the dynamics of the body in spaces of dissent.

Riot: Civil Unrest is one of few games that depict protests in which the crowd is considered an active agent. During gameplay, the player usually controls four groups of crowds, and each group is equipped with tools (e.g., a camera, a microphone, social media tools, Molotov). These tools change depending on the mission's objective (e.g., protect the tents from being destroyed or peacefully occupying the space as protesters) and the crowd's level of peacefulness and violence. However, similar to *SimCity* or *Tropico*, *Riot: Civil Unrest* produces a narrative that reinforces the concept and image of irrational and unorganized protesters versus organized and spatially aware police.

Riot: Civil Unrest fails to understand the spatial awareness of protesters. Players' equipment is disconnected from the built environment, especially in opposition to police forces armed with spatial tactics and strategies. (Figure 32) Developers' approaches to crowd simulation is stuck in theories developed by sociologists and psychologists until the mid-twentieth century, when studies focused on crowd behaviour and defined it as irrational, neglecting the capacity of bodies of protest to develop spatial strategies and tactics that cannot be separated from the noises and cacophonies they make, which are vastly more complicated than the animation of crowd that *loop* the word 'resist' eternally.

The game expects the player to win to allow them to progress. Suppose you choose to play the police. In that case, you are granted playability through a linear narrative, a problematic feature in video games, but in *Riot: Civil Unrest* as well as *Sleeping Dogs* and *Emergency series*, it represents the progression of the ludic experience. Once you decide to withdraw in an attempt to let protesters win, the code will hinder your playability by depriving you of linear progress; a narrative technique that describes the unfolding of a game in a linear path that players must follow which mirrors the colonialist idea of a linear progression from savagery to

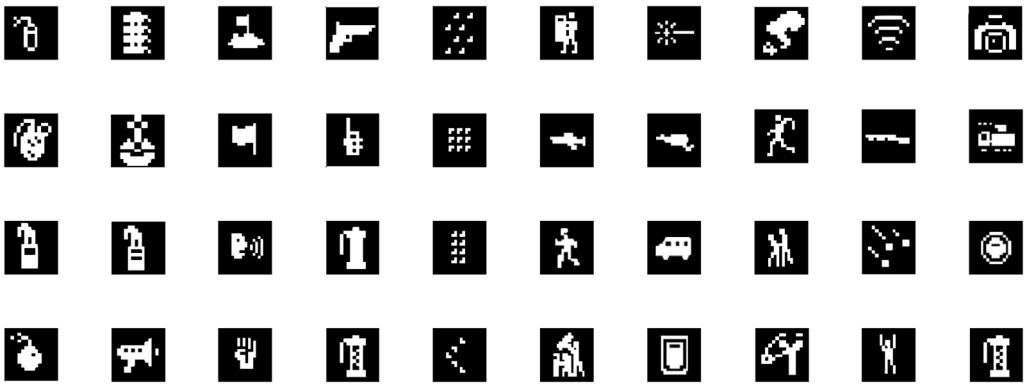


Figure 32: The set of equipment and tactics of protesters (From left) and police (from right). Illustrated by the Researcher

civilization. In Emergency series or Sleeping Dogs, the code, the backbone of games' visuals and narrative, is only designed and tailored to serve the oppressor's narrative of progression. A linear narrative in which players become better cops equipped with superior equipment the more they obey commands.

One can argue that video games are a space for spatial improbabilities. However, for me and anyone who witnessed these events, this is not a space of improbability but a spatial imprint of events in which my ludic approach cannot be neutral. I find myself incapable of disconnecting my practice of playing protest from my experience of being a body, an active agent, in the real protest spaces this game depicts. In an ephemeral act like protest, we cannot deal with it as a space of improbability. I wished that *Riot: Civil Unrest* would have avoided the police versus protesters dichotomy, which in its limited understanding of crowd spatial dynamics and innovation, ultimately glorifies police spatial tactics. The virtual reconstruction of those spaces triggers my memory by recreating the original events. However, I wished the game could engage with the space to link the stories together instead of simply presenting fragmented spaces with fragmented stories.

Figure 33: The following visual is a projection on a map for Cairo of the fragmented gamespaces of protest visualised in Riot: Civil Unrest in my trial to let the player understands the complex geography of the ennivronment. Illustrate by the researcher


QASR EL NILE BRIDGE
THE NATIOANL DEMOCRATIC PARTY (NDP)
TAHRIR SQUARE
SUPREME CONSTITUTIONAL COURT

4. Discussion

4.1. A Complicit Gamespace

What is the difference between protests in the case of *Pokémon-Go* and *Riot: Civil Unrest*? In the first case of *Pokémon-Go*, Hong Kong protests were a complex action against the system. First, it challenged the policing system using one of the most peaceful, disturbing, and distracting tactics: playful tactical frivolity. A whimsical non-confrontational tactic that temporarily suspends policing order. Second, protesters were challenging and deconstructing the cartesian maps, which are dedicated to mapping objects such as streets or military targets in our contemporary history. They subverted the *immutability* of the map; consequently, the knowledge the map was transmitting served the protesters' cause and distracted the police. Only at this critical moment that the map, in its paper or digital form, becomes *mutable*. Third, protesters challenged the *Pokémon-Go* Interface itself. As early argued, Niantic engineered the game to be played in a specific way. Failure to follow the rules, Niantic calls these players *cheaters* and bans them as an act of punishment and discipline. During the Hong Kong protest, protesters temporarily suspended Niantic rules of playing and imposed their proper rules over the game narrative.

In the case of *Riot: Civil Unrest*, instead of creating a narrative that stands against the system, the game became an echo of the system itself. This failure is caused due to a separation between the process of reading (interpreting) protest as a social phenomenon and the process of producing and making it in a videogame. As Leonard Menchiari was present by himself during the protest, the interpreting process became obvious. The game acknowledges that the "civil crisis deepens, and inequality tears the very fabric of society", leading to protest masses and civil disorder. Not a journalist or a police officer himself, the game maker was probably standing on the side of protesters, resisting the construction of the high-speed train in Italy. However, making the game depends on a programming language that creates logic and a game engine that visualizes this code. This technical-oriented process is embedded within an industry and military-oriented knowledge that, by looking at the history of protest in video games, is morally corrupted in which *protest* is seen as *riot* and the *crowd* as *mob*[4].

The development of video games since the 90s has been dominated by an industrial narrative

4 Riot is the action of violence and Mob is the people who are causing violence.

in which technological progress and commercial success are what matter. Consequently, the more the number of animated characters a game frame can handle, the more we can measure the game's success from a technical perspective. Code is expensive; it is a massive volume of bytes transported into players' screens, as much as their processors can take. Coders have to choose to give more power, dynamics, or mechanics to a specific object or a person or a story and deprive others of that, which is an intentional choice as they clearly understand the economy of play. An economy that, in our example, intentionally undermines protesters' existence.

We can count thousands of protesters in *Assassin's Creed: Unity* and hundreds in *SimCity*, *Emergency, or Riot: Civil Unrest*. A substantial number of people who are capable of having a voice and an impact. However, protesters were passive, irrational, and unseen in all these games. Whether there may be some aggrieved workers protesting for social justice or a far-right-wing group standing in anti-Islam protests, the truth about these in-game events was never announced or questioned. Numbers did not have an impact on the story of the game. What mattered was the voice of the game maker, who wrote the code and designed the elaborate scenes, and who simultaneously represented the voice of the state, giving it legitimacy and rendering protesters unseen.

Unseeing protesters' spatial tactics preserve the status quo, as narrated by the state. Which correlate with Mar Hicks' argument that technological systems are designed to "preserve existing hierarchies and power structures, rather than being revolutionary" (Hicks 2021; p153). *Riot: Civil Unrest*'s procedural system impose a hierarchical structure that place police organized spatial tactics on higher level and inferiorize protesters spatial assembly. Like *SimCity* and *Emergency* series, *Riot: Civil Unrest* inherits the procedural logic of the police. Since the police are extremely organized hierarchical systems of social control. Not only can police function in a hierarchical way, but also, they need to hierarchize any moving or still object surrounding them to put it under control. Such procedural entanglements qualify the code to map police and military spatial formation (e.g., arrow, line, defence, skirmish) but becomes incompetent to read the spatial innovation of protesters as it is a logic that fundamentally broke out against hierarchy.

4.2. To Claim the Right to Look

In his book *The Right to Look: A Counterhistory of Visuality*, Nicholas Mirzoeff argues that visuality has been central to the legitimization of Western hegemony. (2011) Visuality in modern western history was produced by the implementation of technologies of surveillance and colonialism through the process of visualizing. According to Mirzoeff, for visuality to work as a tool of surveillance and domination, the visualizer has to distance themselves, literally and metaphorically, from the subject being viewed: Visuality's first domains were the slave plantation, monitored by the surveillance of the overseer's eye since the sixteenth century. In the eighteenth century, the artist engineers (*ingenieurs artistes*) recruited by Napoleon visualized the battlefield. They had to position themselves and their eyes as far as possible from the field to produce a vivid image of the battle. With technological progress, this position of visual authority has been displaced from the mind's eye to that of the air balloon, aircraft, and, more recently, drones and satellites. (Mirzoeff, 2011, p.17). Mirzoeff's text asserts that the view from distance, the view from above, the top-down view or the cartesian map are, in their essence, monopolized by state apparatuses mainly for social control and surveillance.

To claim the right to look (*droit de regards*[5]), There is a need to confront visuality. To give a concrete example, Mirzoeff cites Jaque Rancière critique of Louis Althusser' Interpellation Theory. Interpellation theory is the process of responding to ideologies[6], thereby recognizing oneself as a subject. When someone turn around to respond to a police officer hailing them, they, at this moment, become subject to the officer's ideology of law. By internalizing ideology's value, the subject becomes complicit with the law. In opposition, Rancière argues that police intervention at protest is to break up the protest rather than interpellating protesters. (1998) When a police officer shout "Move along! There is nothing to see here!" (Rancière, 1998, p.217) conviction, in this case, does not occur through interpolation, rather, it operates through a visual and spatial mechanism, which is to assert the continuity of circulation (traffic) in that space. This flow of circulation cannot be interrupted or fixed. The police officer forces us to preserve the mode of visuality imposed by law to assert that the space of circulation does not turn into a space of political appearance[7]. (e.g., gathering, occupation,

5 Jacques Derrida coined this phrase in describing Marie- Françoise Plissart's photo- essay

6 Althusser defines ideology as "the imaginary relationship of individuals to their real conditions of existence" (Althusser 1972: 162)

7 Check the work of Hannah Ardent and later Judith Butler on the space of appearence

protest) Then the right to look becomes the right to confront this exclusive ownership of visuality to claim our rights to be seen.

While *Riot: Civil Unrest* was expected to tell a different story on protest, it fails to confront visuality imposed by precedent AAA games depicting protest. The game stems its mode of play from two genres: combat and strategy games.

> Combat games engage players in a series of one-on-one fights. The game built its story on the dichotomy between protesters and police. Protest has always been a complex event that involves many political actors with thousands of spatial stories. Therefore, the role of the state and the police have always been to continuously erase these other stories to have a hegemonic grasp over the narrative. Visualizing a two-sided story is a policing construct. While the game claims neutrality by letting players be either protesters or officers, players must choose a side. The game mechanics act like a concrete barricade constructed by the police that forces actors to pick a side. It is a zero-sum game in which an actor has to win for the other to lose, and in a war-like game, winning is the only guarantee for progress. Losing, on the other side, fixes the status quo and is seen as a failure.
>
> From the strategy category, it inherits the top-down perspective. It is the view of war, strategies, and exploration. Therefore, when protesters are peaceful, the top-down perspective becomes less effective as the equipment (e.g., megaphone or choir) they own in this mode is not designed to engage with the gamespace from that perspective. The top-down view becomes useful when protesters turn violent as players can use a trajectory prediction line to direct projectiles to the police. (e.g., rocks, Molotov, or gunshots) On the other side, top-down view remains a useful tactic for the police in the peaceful and violent scenarios as they can still apply different tactical spatial formations. A top-down perspective in a war-like game predominantly serves in visualizing violence, sovereignty, and dominance. Without a critical engagement with the question of visuality, bringing the view from above in a game that claims to stand on protesters' side risk working against their cause.

Similarly, and like most Location-based games, *Pokémon Go* depends on a top-down map to build its game narrative. The game uses OpenStreetMap as its gamespace provider. OSM is an outcome of digital platforms such as volunteered geographic information tools (VGI)

and public participation geographic information systems (PPGIS). VGI and PPGIS emerged with the introduction of Web 2.0 back in the early 2000. Platforms such as OpenStreetMap (2004), Wikimapia (2006) and Google Map Maker (2008-2017) were supposed to act as democratic, participatory tools by shifting the power imbalance of mapmaking from the institution (e.g., state cartographers working for the state) to the people. Consequently, they were supposed to cease the state's monopoly on the apparatus of visuality.

However, these tools did not catch up with their premise as they are based on the same traditional cartographical methodologies. As Denis Wood (2010) has pointed out in his book 'Rethinking the Power of Maps": "in the hands of PPGIS, GIS was merely replacing cartography, not liberating mapmaking." Such tools are fixed on the material understanding of the world, one that constitutes a singular reality. Consequently, they fail in visualizing spaces outside the common understandings of reality and materiality. Players' contributions to OSM can never be read as participation. Instead, it is free labour that predominantly serves in producing a neo-colonial map in which the right to look remains monopolised by corporations. The veracity of the exploitation of players' communities participating in making OSM maps becomes indisputable.

4.3. Who owns the gamespace?

If the police control our public space and corporations control the gamespace and its map, where else shall we go? and how can we claim our right to look: to be seen in the gamespace? How can we force corporations to withdraw their agency? The ontological question then is, who owns the gamespace? In both cases, there is a continuous interference between the physical space and the gamespace. Thus, I position myself on the players' side to argue that the moment the game is published to be played in the public space, the game itself becomes a public space. It is no longer a private space because it touches material spaces and geographies. Then the gamespace becomes a shared space established by its code, but our performance also constitutes it. Therefore, I identify players' interventions in Hong Kong as a tactic of *modding* and hijacking (détourner) the gamespace. Modding, in this case, is not a subject of moral bankruptcy or moral shortcomings. It is a natural claim over a space that its imaginary has been monopolized by hegemonic ideologies (either map-provider or game-developer)

The *Pokémon-Go* community on Reddit or the *Pokémon-Go* activist players in the street of Hong Kong have disturbed the apparatus of visuality embedded in the location-based games.

Building on Mirzoeff's earlier argument that the visualizer must distance themselves from the controlled subject, protesters in Hong Kong pulled the map back from the satellite closer to them, even closer from the mind's eye of the police officer. Players did not vandalize the map, and neither did they cheat. The moral question then becomes directed to OSM, who let neo-colonial corporations take over the map. Players' *untruthful* participation over the map has disrupted the neo-colonial and exploitative model of the digital map and Niantic. Only at these two critical moments, players claimed their right to be seen in the space.

To be seen in games depicting protests, game design has to incubate protesters' micro-urban tactics and stories. To let us understand how small groups of bodies get together in a common space and how they grow up in numbers and increase in infinite proliferation? How did bodies of protest rearrange the space to function as their occupied realm during the occupation of Tahrir square? These spaces of protest had strategically positioned sleeping zones, daycares, on-site hospitals, art spaces, different circles for speech, and lavatories. How did a massive body of protest have the ability to make way for ambulance cars in the 2014 Hong Kong protest or the Egyptian revolution? In the protest against the Spanish government by the Catalan people in 2017, how had bodies designed a space for speech using semi-circular shapes, employing intuitive acoustic design? Or how had protesters stood and sat arm in arm, forming circles around a few bodies to protect them from police brutality?

5. Conclusion

As argued in Mirzoeff's writing, the right to look is the right to confront state and corporation exclusive ownership of visuality to claim our rights to be seen. In Video games, the apparatus of visuality lies in its code. In this article, I looked at two different cases of performances of democracy: participation and protest. The first case showed how the control over the apparatus of visuality and consequently the code enables corporations' complete control over the game narrative. Hence, maps and games are both chained in systemic issues of injustices. Games based on maps like *Pokémon Go* are about making the map and not making the space. Making the map is making information and producing property for power. While in the first case, protest becomes a tool to disrupt the apparatus of visuality, in the second case, however, *Riot: Civil Unrest* become complicit with a narrative of oppression and control. Since *Riot: Civil Unrest*'s procedural rhetoric inherits the exact unjust representation of spaces of protest

and protesters that exist in titles such as *SimCity* or *Assassin's Creed: Unity.* Understanding the politics of the gamespace through the writing of urban theorists and geographers is not enough anymore as they understood spatiality through our physical bodies. In Video games, a spatiality that is not understood at the point of code and algorithm will not be open to our resistance. Therefore, it is important to have a hold over code to have true resistance and democratic participation and engagement in making the gamespace.

Chapter 5

How do we Activate the Gamespace?

This research-creation project is about protesters' capacity to disrupt policing tactics of oppression and spatial control in social movements. In *Return to Sender*, you play as a protester who returns tear gas using a tennis racket to protect the aggrieved crowd. It aims to subvert the complicit narrative that echoes the police at the game engine level (Unity, in this case) and the level of the gamespace. The game is built on a modified Unity tennis setup. In *Return to Sender*, police are intentionally invisiblized. And they are invisibilized by their own urban tactics of control, which is the construction of barricades, a spatial tactic that aims to control the performance of our bodies in space.

The game was developed during my research stay at the Technoculture, Art and Games Research Centre, Concordia University, Canada.

Return to Sender: A Research-Creation Project

1. Disrupting the Narrative: An Introduction

> "Sometimes we need to disrupt usage to bring attention to a cause." Sara Ahmed, What's the Use? On the Uses of Use, 2019

A "racket" is an object that consists of netting stretched in an almost oval open frame with a handle attached that is used for striking a ball, usually in a tennis court game. In that sense, "to play" is the expression by which we can define why a racket is being used. In a tennis game, one can't hold the ball in their hands (other than serving), or they will drop points. In a tennis video game, the code itself won't allow us to hold the ball in the first place. However, during a protest, we can't hold the tear gas canister for a long time and create momentum to throw it back, or our hands may get burned. Despite the 1993 conviction by the OPCW that prohibited the use of tear gas chemicals, police have regularly used tear gas to disperse crowds occupying the public space.

Wearing scarves, gas masks, or washing our faces with Pepsi cola have become essential tactics of protection from chemicals' side effects. As the temperature of the gas canister can reach over 400 °C in a couple of seconds, protesters in Palestine, France, Lebanon, Hong Kong, Chile, and Venezuela used tennis rackets to return tear gas canisters to the police.

Building on Sara Ahmed's call for disruption, protesters, at this particular moment, were disrupting the use of the tennis racket by subverting its "playful" materiality into a political object of resistance. Such tactics disrupt the "elite class" ideology embedded in the sport of tennis that defines how and where a tennis racquet can be used and who is allowed to attend and watch a tennis game. It also disrupts the function of the contested public space itself as well as the policing order which does not anticipate such resistance. Tennis as a political tool of disruption was also present during the French revolution. In 1789, members of the French Third Estate weren't allowed by guards to attend the assembly on the country's fiscal

Figure 34: The start menu showing the 4 different playable cities. Screenshot taken by the author

and agricultural crisis. Instead, they assembled in the indoor Royal Tennis Court of Versailles (Jeu de paume) and dictated what is known today as the "Tennis Court Oath." As argued by Sara Ahmed, "to make use of a space without owning a space is to throw open the question of what space is for." (2019) Similar to the racket's materiality, the usage of the tennis court was being redefined, and forever, by the members as a political space. The space itself, which was once used to play tennis, became an active participant in the opposition of Louis XVI.

Return to Sender is a game about disruption. It is about protesters' capacity to disrupt policing order in social movements as well as the ownership and function of the public space. It brings one of the protesters' innovative spatial tactics: using a tennis racket to throw tear gas away. In *Return to Sender*, you play as a protester who returns gas canisters using a tennis racket to protect the aggrieved crowd. The game aims to subvert the complicit narrative that echoes the police at the game engine level (Unity 3D, in my case) and the level of the gamespace. The game engine, represented in its prefabricated components and tutorials, assumes developers will code the element with dominant authority to agonize the other, which, in such a confronting scenario, is the police. To challenge such logic, the game is built on top of a modified Unity tennis setup that shifts such power to the protester. The disruption extends to the level of the gamespace itself. In *Return to Sender*, police are intentionally invisiblized.

Figure 35: Player sending back the tear gas. Screenshot taken by the author

And they are invisibilized by their own urban tactics of control which is the use of barricades. Thus, treating the police as part of the game environment itself and not as an active agent.

It is a game where the player does not lose to the police. As players struggle to breathe or look around while playing, the hands of care will stretch to support the player with the needed equipment (e.g., Masks, goggles, or Pepsi to wash their face), simulating the collective ethos during such moments. *Return to Sender* explores the gamespace from protesters' points of view and in resolute contrast to the capitalist politics of scoring that we inherit from mainstream game culture. Quantifiability works for the epistemology of the ruling system as they have the apparatus to support and contain it. Therefore, in *Return to Sender*, players do not get rewarded or gain points for their performance. Contrarily, they aim to protect themselves from gas and to care about other protesters lives. In this game, I attempt to go beyond the dichotomy of police versus protesters to bring a narrative about us, protesters seeking social justice, in which our stories and struggles are the only ones that are seen, lived and played.

2. The Act of Making and Meaning: Methodological Approach

Return to Sender is a research-creation project that aims to confront and challenge the code that shapes protesters' behaviour in video games depicting protests. Such biased code brings to the gamespace the same oppressed policing tactics of controlling our bodies in the public space, rendering the gamespace as well as the public space a tool of oppression. In her book "Dear Science and Other Stories," Katherine Mckittrick (2020) asks why, for us, BIPOC, code is taken away; an echo to her question, I intend to take on code in this project. And I want to take on code as a disruption and from within the undercommons (Harney & Moten, 2013) — the ungovernable place where we, marginalized and disenfranchised people, make meaning with each other in resistance to unjust policies.

This project posits video games as a space for learning, a space in which we are allowed to lose, make mistakes, try, fail, and try and fail again. A safe environment that can act as a spatial exercise tool through which we, the protesters, can practice and acquire urban tactics that stand against the state's oppression. To do so, I embark on a game design process compounded with an academic inquiry as a form of praxis. I apply a research-creation praxis. A practice-based methodological approach that focuses on the act of making and its process as means of generating new knowledge. Research creation entails an iterative nature in which research and creation inform each other in a cyclical process (Sadati & Mitchell 2021). Reflecting on his doctoral research, Eric Le Coguiec (2006) tells us that research-creation's process brings a theoretical and artistic production and engages the research-maker in a reflexive practice. This reflexive practice, accompanied by positionality, was an urgent framework that shaped my research-creation process.

> Positionality considers the influence of researcher's self (race, gender, social, political or economic status) on the data collected (Rose, 1997). Donna Haraway's contribution has been important in theorizing the notion of *positionality*. She argues that no matter how vigorously we try to find a neutral ground, one is always on a side of the story since all knowledge is situated knowledge. (Haraway, 1988) As my research deals with the question of police spatial violence during social movement, I situate myself on the marginal side of the story; stories of oppressed and dispossessed communities who lost access to the public space while seeking social justice. My political interest stems from the feminist 'standpoint' theory arguing that mainstream science does not offer neutral

knowledge and stands against the assumption that political interest harm scientific production. (Harding, 2004) Instead, a standpoint from the margins within a research-creation framework can induce the production of a new theoretical and practical knowledge that resists the dominant narrative – ingrained in game studies, gamespaces, and game engines – that inferiorize protesters' spaces of struggle against the state and police spatial order.

Reflexivity, in the scope of this project, "requires acknowledging one's own intellectual autobiography so that one can then critique and unpack how this may have influenced the construction of knowledge." (Pini 2004) For me, this meant acknowledging and dissecting the influence of western thought in my architectural training. As my prototype is in the form of a digital game, this has also necessitated revisiting my relationship as an architect with the computer, the technological apparatus through which I wrote my code, designed my three-dimensional models, and diffused my digital game.

Making a video game on protest as an architect is a challenge. First, because video games are predominantly situated in a problem-solving realm within schools of architecture which means that video games become more meaningful as an object of study when they claim to serve pedagogical (e.g., Cities: Skyline or SimCity series), sustainable (e.g., Block'hood) or participatory (e.g., Minecraft) agendas.

Second, architecture and urban planning share a disreputable position from hegemonic state power in which the human being is dislodged from its social, cultural and political environment into a silent cutout figure in an architectural drawing or a scaled plan. Modern architects such as Giuseppe Terragni (1904-1943) worked under the Italian fascist regime. Contemporary architects such as Bjarke Ingels (1974-today) collaborated with right-wing governments, and Zaha Hadid (1950-2016) disclaimed any responsibility for the death of migrant workers during the construction of her designed stadium in Qatar. Urban planning conceals a 'dark side' engineered in collaboration with the state "in order to control, contain, oppress and marginalize elements which could destabilize a prevailing capitalist, national and male-dominated orders." (Yiftachel 1998)

Looking at the architectural curriculum I had to follow during my bachelor's and master's programs; it is expected that I will stand, either explicitly or implicitly, on the side of the state and against protesters.

3. Negotiating with Code and Power: A Reflexive Analysis

As I attempt to develop spatial stories that upfront the voice of protesters and in which police are intentionally invisiblized in the gamespace, I apply reflexivity by dismantling the relationship between technology, architecture, and video games. An essential process that has continuously refined my thinking and making process. In the following section, I unfold my spatial thinking process while developing my research-creation project through four segments: the choice of the game narrative, the influence of the game engine, the position of the camera, and the performance of the crowd in the gamespace.

3.1. Against the Two Sides Story

In *Return to Sender*, I decided to invisiblize the bodies of the police as I realized through playing games depicting protest that the moment developers allow the police to exist in the gamespace, they, as a matter of course, dominate the game narrative (e.g., Riot Operator 2023). Even if the game claims to stand on protesters' side, developers usually fail to resist not giving players control on the other side: the side of the police. (e.g., Riot: Civil Unrest 2019 & OccupyGezi 2013)

By tracing the history of video games, it becomes obvious why the space of video games still privileges to glorify hegemonic power over protesters resistance. The history of video game-making is military-oriented (De Peuter and Dyer-Witheford 2009 & Crogan 2011). In fact, one of the earliest video games in history was about playing tennis. Titled 'Tennis for Two,' the game was developed in 1958 by modifying military technologies explicitly developed to make the first the first U.S. atomic bomb as part of the 1942-1945 Manhattan Project (Nicoll & Keogh 2019).

While the game narrative itself was about playing a two-side tennis game, the policing environment in which the game was developed complied with historian of technology Mar Hicks' argument that "technological systems are susceptibility designed to "preserve existing hierarchies and power structures, rather than being revolutionary" (Hicks 2021; p153). Consequently, gamespaces remain a fertile environment to code and inherit the hierarchical systems of the police, especially since the literature about police formations and movements in the space is way more attenable than protesters' spatial resistance (Posadas & Teknomo 2016 and Park & al 2018).

Figure 36: Plan of the barricades erected in Paris during the insurrection of June 1848. Source gallica.bnf.fr

Architecture and spatial design have been utilized against protesters by authoritarian regimes or the forces of the status quo for purposes of control and security. In the effort to maintain order and domination over public spaces, regimes have enacted by physical interventions such as the construction of concrete walls (e.g., Beirut 2019, Egypt 2011) to restrain protesters from performing their core human rights: the right to claim public space during social movements. Therefore, in *Return to Sender*, I employ architecture and spatial design to invisibilize the police using barricades.

Historically, barricades were a tactic of resistance during the French Revolution. (Figure 36) Protesters built barricades using urban elements and home furniture to create safe territories within narrow Parisian streets. According to Douglas, in June 1848, there were as many as 6000 barricades (2011). The Haussmannisation of Paris, a project by Napoleon III, totally changed the city's urban fabric by expanding its streets' width to make it difficult for protesters to build barricades. Although protesters are still able to barricade, blocking the street has become the tactic of the police, a temporary representation of their bodies to control our bodies and our movement in the public space.

A barricade erected by the police creates 'otherness': the side of the police and the other side. Between this dichotomy, a body must make a choice. Visualizing a two-sided story is a policing construct that aims to silence and suppress the stories of the 'others' and mutate them into a singular narrative that can be oppressed and controlled. In *return to Sender*, I am imposing my coding agency to visibilize the *other* (Said 1978) in a trial to disrupt the policing dichotomy narrative by coding multiple stories of struggle, resistance, and care. In *Return to Sender*, protesters do not 'shoot'; they are simply returning gas canisters, a natural reaction against a prohibited tactic of control.

The game's story features four cities where the police or the state have used tear gas to disperse crowds. Each city draws a different manifestation of the barricade and its materiality: 1. Beirut, during the 2020 post-explosion protest, where the state erected concrete barricades blocking access to Lebanon's Parliament building. 2. Paris during the 1st of May manifestation in 2020, where police used mobile Barricades to prevent protesters from accessing the Place de l'Opéra. 3. Hong Kong 2019 protest where police had installed barriers filled with water to protect police stations. 4. The Gaza borders 2018 protest occurred in front of the Israeli apartheid wall against Palestinians' displacement. The current game version featured Cairo in 2011 when the army constructed a series of concrete walls to prevent protesters from converging on the Ministry of Interior.

3.2. Game Engines and Space Policing

When I started this project in 2016, I did not know how to code a video game. The development of the game narrative, as well as my coding learning progress, have evolved side by side. I chose 'Unity' as my game engine tool to visualize and code my video games. Although for architects, 'Unreal Engine' is more common than 'Unity' since Epic Games - the developer of the software - is advertising it as a prominent and cheaper 3D real-time rendering tool for architects, my choice for 'Unity' was due to the fact that many of the protests' games developed either by independent studios (e.g., 1979 Revolution: Black Friday 2016) or during game-making workshops (e.g., OccupyGezi 2013) have used 'Unity' as their main game engine. Unity is considered an interoperable software that enables the exchange of information between different plugins, programming languages (e.g., C#), and middleware software (e.g., Autodesk Maya or Blender). In my case, I used the 3D computer graphics software, Blender, to design and create my environments. The code was written with the

code editor Visual Studio Code using Unity's modified version of C#. This information was fed into the Unity game engine along with audio voices of protesters and avatar animations to create my prototype.

I depended on online books and video tutorials to learn how to develop a game using Unity. But the more I learn about C# and Unity, the more I realize that Unity is better tailored to code a spatial story of violence rather than a space of resistance. As Benjamin Nicoll and Brendan Keogh argued, a game engine can overlap with developers' cultural, political, or gender positioning (2019). For example, grassroots game engines such as Twine and Bitsy are often linked with "fringe and gender-diverse video game-making communities." (2019, p.27) While Unity is considered a general-purpose engine that has democratized the process of making games, the situations I encountered during my learning process indicate that the engine still, as Nicoll & Keogh describe, encourages developers to design gamespaces in specific ways.

During a conversation with Prof. Rilla Khaled in which she reflected on how difficult it is to smash back a gas canister in my prototype as in real-life events, I realized how difficult the process of coding the player return logic is compared to coding the police projectile shooting logic. At first, I used the precoded *collider* component in Unity to detect the collision of the ball with the player's body. Later, I recognized that Unity's library consists of an advanced physics function called *Raycast*. Raycast is a function that projects a line from a specific point at a particular angle in the gamespace to see (or hit) what is in a specific direction. The ways by which a game developer can implement this function in the game space are unlimited. However, a simple google or YouTube search about *Raycast*'s tutorials will unravel hundreds of tutorials, including the official tutorial released by Unity, which uses the example of a character shooting a projectile with a gun as a beginner tutorial. (Figure 37) Alison Harvey argues that these tutorials expose "the presumptions about what constitutes a fundamental game design process." (2014, p.97) In the case of a protest scenario, Unity physics presumes that developers aim to code a police officer shooting protesters.

By understanding the logic of the Unity game engine, it becomes obvious why the developer of the game *OccupyGezi* (Akay, 2013), whether intentionally or not, chose to let the player be the police. *OccupyGezi* is a video game that depicts the 2013 Turkish Gezi Park Protest. The player controls a police officer, but it is an officer who can either fire tear gas canisters toward

protesters to slow them down or let them go without shooting. When I played OccupyGezi for the first time, I presumed that the story the game delivers is about showing and glorifying the power of protesters and what Saskia Sassan calls the *powerlessness* that makes visible the limits of superior military power. However, when I used Unity's built-in libraries and watched its official tutorials, I became aware of the impact a game engine may have on developers' decisions especially when knowing that the game was developed only in 48h during the GeziJAM workshop. Unity made it easy to make and learn how to code projectile shooting without deep coding knowledge. With its preinstalled libraries and functions, the platform's default tools become configured and tailored to code the logic of the police in a short time.

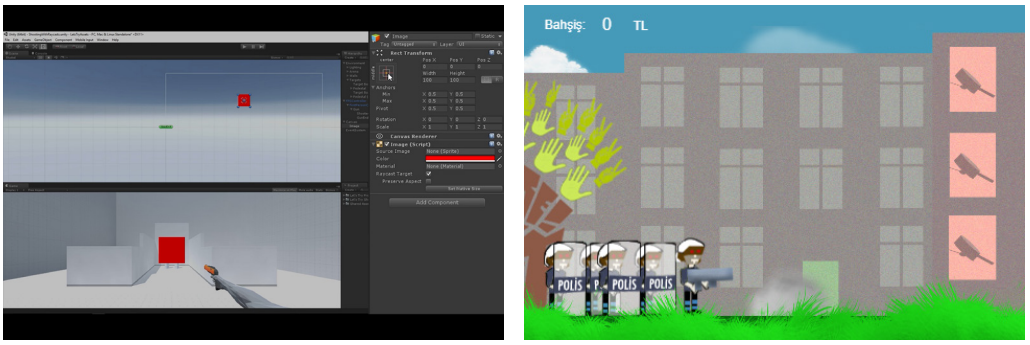


Figure 37: on the left, screenshot of the Youtube tutorial video on raycast by Unity. On the right, the video game OccupyGezi 2013

Initially, I tried to build the game over a tennis setup in which the code adheres to the rules of playing tennis and creates a player against an A.I. in which both share the same performance and coding logic. In a tennis setup, such a given take does not involve antagonism or animosity. The player and the A.I. stand on the same political project, which is getting the ball between each other, and both have the same goals: to meet the rules of the game of tennis which dictates a certain gamespace that is predominantly and latently shared. In *Return to Sender*, the two sides do not stand on the same moral grounds, do not occupy the same political space, and do not have the same goal, which changes the dynamics of a gamespace and, consequently, the code assigned for each side.

For example, the gamespace maintains equity in a tennis game by allowing only one ball (one object) to go back and forth between players. However, in *Return to Sender*, there are no agreed-upon rules, and therefore there is no limit to the objects (tear gas canisters) hailing players from the police. For this game to remain accessible and playable on low-end platforms

and not exclusively a game for those who own advanced computers, I must eliminate (destroy) some of these objects to avoid the game from crashing. Therefore, as a game designer, I have to make a choice to maintain playability by suspending reality for a while and eliminating these objects while I know, my player knows, and those who have experienced tear gas know that these cans do not go away; they stay there, they emit death until somebody throws them away.

3.3 Seeing Space: The View from Above

Trained as an architect, I resisted my continuous urge to develop *Return to Sender* using the top-down camera since both game and architectural design have the capacity to utilize the view from above as a tool of hegemonic power. Architectural curriculum privileges the 'view from above' as its quintessential way of seeing. Similar to coding languages or policing systems, architects are trained to think through a strict hierarchical process[1]. Such a process is manifested in the 'architectural plan,' the abstract materialization of the 'view from above.'

In architectural drawing, hierarchy is visualized through the variation in line weight, which means a variation in the level of power acquired by that line. The distinction between mobile (e.g., tables and doors) and stationary objects (e.g., beams and stairs) or indoor and outdoor spaces (e.g., vegetation) are all examples of drawing hierarchy systems that every architect must follow for a 'clear' reading of the drawing. The wall, in architectural plans, has the boldest and thickest line, which also means that this line conceals the dominant power of the drawing. Walls create new spaces, separate them, contain bodies, control, and segregate these bodies. The power relation between the abstraction of the wall through its line and its material manifestation reveals the authoritarian power an architect can impose through the top-down view.

In video games, the use of top-down cameras is predominantly associated with *god games*. God games include empire-themed, simulation, strategy, and management games. Such games predominantly encourage a narrative of control, sovereignty, and extraction. For example, SimCity, a management game in which players model the behaviour of a real city, encourages players to build a hierarchical, technocratic, and north American city in which

1 Only in rare occasions, architects tried to resist such hierarchy as in architect Enric Miralles' drawing for 'Calle Mercaders Apartment'. For more analysis, check Carl Douglas article: https://diffusive.wordpress.com/2009/12/02/operative-drawing-i-miralles/ or Leopold Lambert text: https://thefunambulist.net/editorials/maps-the-architectural-plan-as-a-map-drawings-by-enric-miralles

race is sanitized (Perdercini, 2017). In Sid Meier's Civilization series (Sid Meier, 1991-2019), in which playing the map is tied to its narrative experience, it is inevitable not to associate territorial exploration with colonialist explorations. The player becomes a colonizer who surveys and unveils the black spaces on the game's screen and map to control unknown territories. (Mukherjee, 2017).

The complicit relationship of architecture and game design with the view from above can be understood through Nicholas Mirzoeff's critique of the production of 'visuality.' In his 2011 book *The Right to Look: A Counterhistory of Visuality*, Mirzoeff refers to the relation between visuality and war during the eighteenth century to argue that visuality is a weaponized medium for the "transmission and dissemination of authority." (2011, p.xv) As war became too complex, there was a need to have a grasp over topography. Napoleon introduced a new category of artist engineers (ingenieurs artistes) to strengthen the geographer engineers (ingenieurs géographes) who develop maps. These technicians were commanding generals whose role was to visualize the battlefield from their perspective. They were visualizing 'history' for Napoleon to sustain autocratic authority.

For 'visuality' to work as a tool of surveillance and domination, the visualizer has to distance themselves, literally and metaphorically, from the subject being viewed. The artist engineers had to position themselves as far as possible from the field to produce a vivid view of the battle. With technological progress, this position of visual authority has been displaced from the mind's eye of the commanding generals to that of the air balloon, aircraft and, more recently, drones and satellites (Mirzoeff 2011, p.17). Consequently, in top-down video games that include protests, the act of 'distancing' the imaginary camera from the territory will predominantly serve in visualizing violence, sovereignty, and dominance, as in the case of the *Emergency series*. The game lets players control real-world emergency scenarios. However, its narrative during protests encourages players to be good police officers who obey commands without questioning the reason for controlling and arrest protesters. Therefore, crowds of protesters become the ones deemed controllable in the gamespace by the players.

Return to Sender aims to challenge the apparatus of visuality that comes for granted when trying to visualize a massive number of crowds. Thus, I avoided the top-down perspective. The prototype has also avoided placing the camera on the side sectional view of the events, a common view used in combat games and in games featuring protest. A side viewpoint

Figure 38: A screenshot from Unity while testing the game. on the left, the scene window showing a top-down view. It is normal to use this view as in working in 3ds max or maya to navigate in the space.

can reduce protests' experience to a two-side narrative in which one part must lose for the other to win, as in *OccupyGezi* and *YellowUmbrella*. (Awesapp, 2014) Instead, I combine a first-person (known in the game as the hands of care) with a third-person camera to bring the contested space as close as possible to the player's mind eye. In *Return to Sender*, the protester's eyes intersect with the perspective's vanishing point, and the barricade becomes the line of horizon that conceal the bodies of the police in a despondent trial to invisblize them and disband their hegemonic dominance over the game narrative.

3.4. Docile Crowds, Disobedient Bodies

To speak about the spatiality of social movements and protests entails the necessity to understand the performance of crowds inhabiting the public space. My first game concept back in 2018 thought to simulate crowds of protesters during social movements. It was until 2021 when I started to learn how to write code with Unity and combine 3D models from Blender software, that I realized how complicated it is to code a spatially aware crowd for amateurs and expert developers alike. Simulating hundreds and thousands of bodies is an expensive process; a massive volume of polygons is transported into players' screens, as much as their consoles' processors and memories can take. In game-making vocabulary, polygons are the areas that define the shape of a game object. To make a balance between game playability on low-end consoles and its visual fidelity to real-world events, developers

must choose to give more power, dynamics, or mechanics to a specific object, a person, or a story—and, consequently, to deprive others of that. This is an intentional choice, as they clearly understand the economy of play—an economy that, in many games, favours the representation of organized police versus uncontrolled animated crowds that act as a background to the game events.

In games depicting protest, animated crowds are usually 'non-player characters.' N.P.C.s are pre-animated bodies within the gamespace that follow developers' preordinated algorithm and are out of players' control. The massive crowd of protesters in these games (e.g., Assassin's Creed: Unity or Emergency Series) rarely aims to foreground the voice of discontent protesters. Instead, it serves some technical purposes to challenge modern computing hardware performances. Since the 1990s, an industrial narrative centring on technological progress and commercial success has dominated the development of video games. Consequently, the more animated characters a game frame can handle, the more we can measure the game's success from a technical perspective. For example, Assassin's Creed Unity is advertised to have one of the largest animated crowds in the game series' history. Developers promote the capacity of the game space to accommodate 30,000 characters and its ability to hold 12,000 characters in a single frame.

The complicity of the gamespace and the game engine when dealing with a crowd of protest is indeed an echo of the integration of computing simulation techniques (e.g., Agent-Based Modelling, Contagion models and algorithms like the Reynolds Flocking and Leader-Following Behaviours) with social sciences. The science of crowd simulation stemmed its roots from a problematic social psychology understanding that criminalized protesters' behaviours and constituted the handbook for policing crowds. Therefore, crowd simulation becomes successful in predicting police ability to control protesters while failing in visualizing protesters' creative disruption of police tactics. (e.g., video game Emergency 4, 2016 or Riot Operator, 2023 and in literature, Posadas & Teknomo, 2016 and Park & al, 2018, to name a few)

Postmodern philosophy has been occupied with studying the body in relation to power. Michel Foucault (1978; 2012) framed the body as a target of social control and discipline. Lefebvre's (1974; 1992) writings insisted that the social production of space is conditional to the occupation of the urban space by the body. Feminist philosopher Judith Butler's

Figure 39: A screenshot from the game showing the hands of care which support the protester whenever their health drops due to the impact of tear gas.

(2006) theories suggested that the body is a subject that creates meaning and performs a social action. The semantic shift between the use of "crowd" or "mob" to "bodies" in postmodern philosophy indicates a paradigm shift in our understanding of the dynamic of social movements and the complex roles a single body can play in protest. An understanding that remains invisibilized in the gamespace.

In *Return to Sender*, I tried to steer away from the industrial narrative that dominates the representation of protesters. Instead of trying to replicate the top-down imagery of an irrational crowd, the prototype shifts the focus to the innovative micro-urban tactics applied by protesters. In his uplifting conversation with U.S. historian Robin Kelley, Fred Moten, a Black cultural theorist, and poet from the U.S.A., highlights the necessity to renew our habits of assembly (Cooper & Walcott, 2018). We need to learn how to do a better job getting together in theory and practice. He points out that the Civil Rights Movement was not a mass movement, reminding us that scale can be a counterproductive formulation in renewing our habits of assembly. Moten calls us to work on "a small scale with a kind of patience, with ethical regard for one another" and "with a hopefully infinite proliferation." Against industrial fantasies of scale, *Return to Sender* is part of a bigger project that starts

from the point of the body to understand how small groups of protesters get together in a common space and how they grow in numbers and may increase in infinite proliferation.

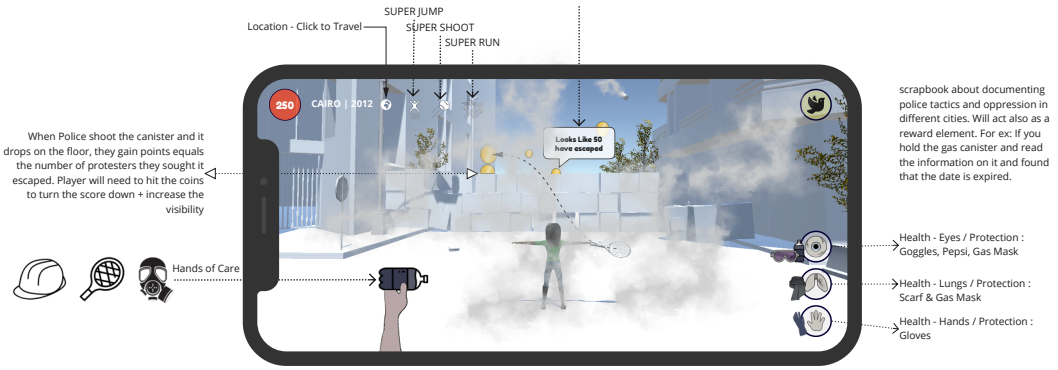
4. Game making as Activism: A Conclusion

This research-creation prototype is an experimental environment that comes from a political intention instead of techno-politics and technological determinism agenda. I consider the prototype developed under this project as a political statement in itself, even if it is not played or sold. It is my personal protest and unapologetic claim over agency to this existing literature and its tangible effect on how video games on protest are designed, produced, and coded. To claim agency over the code, we need to think about video games beyond the politics of institutionalized participation, inclusion, and diversity into a different realm of claim. A realm in which policing algorithms are sterilized and a realm that has the capacity to include us, protesters, as we are with our struggles, failures, and imaginaries.

Reflexivity was an essential tool in my research-creation process. Distancing myself from my previous architectural education as well as common game design practices was crucial in my trial to produce a game that avoids complicit narratives of oppression and control. I chose a story highlighting protesters' innovation in spatial tactics while trying to invisibilize police to avoid a two-sided story. As my choices of game engines were limited to Unity, it was crucial to be aware of Unity's preinstalled libraries and tutorials that, like the architectural doctrine I was exposed to, incline toward representing hegemonic power. Although a top-down game may still be in service of protesters, I avoided using such perspective to prevent the player from claiming this type of hegemonic control that comes for granted with this 'view from above.'

Finally, instead of coding mobs subject to control, I combine a first (hands of care) with a third perspective (the returner) camera to let players project themselves within the virtual body of the protester in the gamespace. By doing so, *Return to Sender* tries to shift the focus from the irrationality of the crowd, a problematic narrative in games depicting protest, to the innovative dynamics of the body within spaces of dissent.

Figure 40: Playing Sequence. This is the first visual draft for the game. some of the mechanics in this prototype have been modified in the final version (like the scoring system). Other mechanis are still under development



Cut-out from real events will be rendered in unity using 'billboard' technique

Notes on the Field

An Epilogue

> "Humankind can no longer afford to be bulled into complacency by narratives of techno-utopianism or techno-neutraility, or be self-assured and oversimplified evasion" (Thomas S. Mullaney, Your Computer is On Fire, 2021)

In January 1960, artist Constant Nieuwenhuys exhibited his design models of his city *New Babylon* for the first time. Constant believed that automation and mechanization would take over human labour. Thus, humans' leisure time would immensely increase. (Van Lente, 2013) *New Babylon* envisaged a society of total automation in which there were only playful drifting through an infinite and endlessly manipulable interior space that was manifested in the form of a dynamic labyrinth. From an architectural and urban perspective, we tend to frame Constant's project within the situationist movement. From a ludic perspective, the *New Babylon* became the state of the art that demonstrate historical ties between architecture and play in our contemporary history, especially since Constant named the inhabitants of his city "Humo Ludens" (man at play) - influenced by Johan Huizinga's 1938 book that carries the same title.

But the *New Babylon* is plunged into narratives of techno-utopianism and techno-neutrality. Occupied by the complex sketches, images, and models of the *New Babylon*, we tend to overlook Constant's understanding of electronics and computers as a form of liberation, the main incentive for constructing his city. Although Constant argued for a decentralized network city in which the citizen life can become "nomadic" instead of "fixed," he placed the computer, a tool that essentially existed to centralize data, at the heart of his city to monitor citizens' desires and spatial creativity. (Wigely, 1998, p.63) Thinking of electronics and computers as liberating tools was common among his generation of architects, such as Cedric Price or Buckminster Fuller. However, and as explained by AI research, Joseph Weizenbaum, computers have, from the beginning, provided institutions with a conservative force against change and decentralization. (Weizenbaum, 1985) Nazi Germany, as well as the US industry and government, relied on such centralized information technologies (Hicks, 2021) as a tool of social control. A utilization that aligns the history of computerized technology with militarism and political power, which is far away from being in service of *New Babylon*' inhabitants.

While Constant project started from the point of rejecting Le Corbusier's theory of functionalist architecture, his position on technology remained as complicit as Le Corbusier's

position on aerial photography. For Le Corbusier, the view from above "was crucial to the ability of the planner to understand his field of operation." (Vidler, 2010) However, the "view from above" cannot be separated from the modern western hegemonic history of implementing technologies of colonialism through visualizing (Mirzoeff, 2011). In fact, Le Corbusier's obsession with airplanes was influenced by Paul-Henry Chombart De Lauwe, a French urban sociologist who developed his spatial theory from his trips to French colonial areas. (Haffner, 2013) Chombart contributed to the shift of using aerial surveillance and, more specifically, "the view from above" from a tool limited to militarism to an apparatus of social control; first, it was developed to control colonial populations and later to control and survey the French state.

1. Architecture of Authoritarian Desire

I have always wondered how architects in our contemporary history get to strip their role as makers of their ethical responsibility. How do they become complicit in manipulating our realities and creating systems of injustices and remain not subject to moral questions? The truth is, depending on the use to which political power put him and in different historical epochs, the architect has been "more a head-bricklayer or more a god." (De Carlo, 2005) A reality that explains how Finnish architect Alvar Aalto and German architects Ernst Neufert and Mies Van De Rohe remain central subjects in our architectural education systems while they, in one way or another, compromised with the Nazis. Rejected in two architectural competitions under the Nazi regime before fleeing to the United States, Mies Van De Rohe used Nazi symbols such as the swastika in his sketches. (Welch, 1993) Similarly, Alvar Aalto and Ernst Neufert participated in the standardization project that furthered the Nazis' destructive aims. (Vossoughian, 2020)

Giancarlo De Carlo, an Italian and anti-fascist architect, argues that the wave of protests that exploded worldwide during the sixties has mobilized the demands for a radical renewal of organizational structures and teaching methods in the faculty of architecture. (2005) Until the first half of the last century, the ability to draw, design, or map the lived space was dominated by *elites* and spatial professionals: architects, city planners, and cartographers. (Querrien 2005, p111) The emergence of social and civil rights movements against centralized authorities was accompanied by demands for democratic participation in the political sphere.

The movement advocated for a less *arrogant* role for the architect and the planner. (Habraken, 1986 and Awan & al, 2013) A role that was supposed to challenge technological determinism, recognizing that *view from above* is a "space of state control." (Lefebvre, 2009) A role that stands against modernist architects such as Le Corbusier who believed in a centralized society guided from above in which the "design of cities was too important to be left to the citizens." (Fishman, 1982, p.190)

But is there a change that has happened since then? In the late nineties, Rem Koolhaas, a Dutch architect, re-implemented Le Corbusier and Chombart's same methods of aerial surveillance in his Harvard architectural course in Lagos, Nigeria. Koolhaas's work is not an investigation but a reproduction of colonial visuality. As a white and western architect, he was interested in extracting systems of order using the "view from above" within - what he calls - the urban chaos, seen from the eye perspective, that he sees in the West African Megapolis. If Le Corbusier's areal discoveries induced destruction to redesign cities, Koolhaas's aerial visions projected a dystopian aesthetic of circulation and traffic which Tim Hecker calls "a form of passive futurological speculation." (Hecker 2010, p259)

In both cases, architects intentionally abstracted the composed image by distancing themselves from the human body—an expected outcome of using technologies close to cartesian maps' projection methods. Since "the view from above" as maps tend to "desocialize" the territory it represents by "reducing the social and cultural complexity of territory to a coldly calculated system of signs and measurements" (Dunlop & Tatiana 2015), fostering the notion of a "socially empty space" (Harley 1989) which renders the mapped territory vulnerable for colonization. The work of Le Corbusier, Constant, or Koolhas entails an authoritarian desire, derived from the dominant nature of western visual technologies, to become the master of the world, to change it and construct a different reality.

2. The Production of the (digital) Body

The so-called digital turn in architecture (Carpo, 2013; Carpo, 2017) that started late in the sixties and spread since the nineties using computer-aided architectural design "CAAD" software has conceived what is known as architectural visualization or Computer-Generated Images (CGIs). The closer architects get to authoritarian powers, the more they invest in

advanced architectural visualization techniques to impose an exquisite but corruptive reality that aims to dominate a spatial narrative of the state. If Koolhaas has reproduced a colonial visuality, Bjarke Ingles and many other contemporary architects, such as Norman Foster, on the other side, have collaborated with right-wing, repressive and anti-indigenous governments, same as Alvar Aalto or Mies Van De Rohe compromised with the Nazis.

Bodies within CGIs are mostly added using a technique called *cutout people*. A group of still or animated images of people performing a specific activity (e.g., walking, playing, drinking) serving the architect to showcase how human beings shall inhabit their imaginary spaces. The process of adding cutout people usually takes place at the last phase of the production of the CGIs after designing the architectural planes, the 3D model and the landscape. However, the culture of using cutout people in CGIs is accused of normalizing whiteness by ostracizing people of colour and minorities of its visuals. (Ravenscroft, 2018)

In 2020, Danish architect Bjarke Ingles visualized his imaginary floating city by rendering four different racialised reskins of the same project to highlight the universality of his climate plans. (CogX, 2020, min 28:18) Ingles's visuals touch on how architects, with authoritarian power inscribed to a neoliberal multiculturalism agenda, visualize diversity through their projects. Such a visualization process goes beyond the walls and stones to entail strategies of inclusion and exclusion engineered by the architect. These systems of *otherness* determine who gets to be included, how they are allowed to perform and, more importantly, who gets to be invisibilized.

Another significant example is the *Place de l'Yser* developed in 2017 in Liège, Belgium. The rendered visuals show a failure in the imaginary of both the architect and the city. (Ville de Liège, 2017) A random visit to the place on a sunny day will reveal a diversity of ethnic identities that frequent the place since it is located within neighbourhoods that immigrant and black people mainly inhabit. However, the architect invisibilized them, rendering a white European fantasy of a space in which immigrants and black bodies do not exist.

The position of architectural doctrine with technology remains predominantly flowed. From the amalgamation of the aerial perspective apparatus during the early 20th century to the 1960s concepts of automated society and electronic paradigm to the 1990 irruption of computer-based information, mainstream architects managed to preserve their techno-utopianism ideology and position themselves in a neutral position from computed technologies and away

from the accusation of moral corruptions.

Then, with computing technologies, the architecture profession became not only a representative of the elite class in power but also an apparatus that conserves and solidifies this power. Architectural visualization can be seen as an extension of the authoritarian history of visuality. If visuality, according to Mirzoeff, is the visualization of history to have a grasp over the narrative of the past (2011), in that case, architectural CGIs become the authoritarian visualization of the upcoming to control the narrative of our future.

3. Hegemonic Politics in Gamespace

Over the past decade, architecture practice and urban theories have claimed a significant stake in videogames making and theorization. According to academic and game designer Robert Yang, the architectural industry influenced the development of game-making tools, known as game engines, from solely depending on code to using 2D top-down grid views similar to the drafting software Autodesk AutoCAD (1982) to using 3D modelling tools as in Autodesk 3D Studio. (1990) The intersection between the digital tools of developing gamespaces or producing architecture meant the shift of architecture computer generated images (CGIs) from the *fixed image* to the *moving image*, expanding the architect's tools to maintain power through visualization. On the other side, using urban theories in game studies and architectural elements in making video games granted gamespaces with a dominant legitimacy that keeps either game developers or scholars away from moral questioning. A legitimacy that entails the same aerial methodologies that separate the space from the body. Then the gamespace, as the physical space, becomes subject to stereotypical and neocolonial thinking and making.

A video game that politically claims to stand against policing and military violence does not necessarily mean that its *gamespace* delivers the same message. On the contrary, its gamespace may become complicit in asserting a policing imaginary. In 2003, *September 12th* was developed by NewsGaming.com, led by Gonzalo Frasca, following the September 11th attacks. The game became state-of-the-art for political game design, which inspired other games such as *OccupyGezi*. (Akay, 2013) *September 12th* was one of the early and provoking games that challenged the normative game narrative that grants players destructive military power they can use without consequences. In the game, which Frasca describes as "not a

Figure 41: A screenshot from September 12th

game," the player represents the military force launching missiles to attack terrorists. Like *OccupyGezi*, the player has to choose between shooting or not; if they shoot terrorists, they will damage buildings or kill civilians. More corpse means more civilians will turn into new terrorists. *OccupyGezi* and *September 12th* counter military and policing narratives. They do so by letting the players be the oppressor. They deliver their political critique by exposing players' moral standing, leaving them the choice to fire or not... But who did not?

Although *September 12th* did not name where its events are taking place or identify the nationality of the non-player characters (NPCs), scholars introduce the gamespace as a "Middle Eastern City" (Flanagan, 2009) or an "Arab town." (Schrank, 2014) While *September 12th* has successfully put the politics of the American military in the position of critique, it failed to include the complicity of the projected space and the image it renders. We tend to forget that spatiality is a player and that challenging politics through gameplay has to start with challenging the politics of the production of the gamespace. In *September 12th*, using the "view from above" can only render a single imagination. It echoes the stereotype

of a "deserted" and uncivilized middle eastern city; the yellow colour pattern dominates the terrain, the market, and the buildings in the playable scene. This spatial stereotype is solidified by how NPCs are dressed in said space.

Additionally, many scholarly game analyses start from the point players fire the missile; "The player might be inclined to aim and fire a missile at one of them..." (Schrank, 2014) or "If the player chooses to fire her missiles... Shooting again and again... If the player keeps firing." (Flanagan, 2009) But what if the player did not press the button? When I chose not to fire, I was left with an animated crowd in a gamespace that was seeded with the stereotypes and perceptions of American politics of what a middle eastern place would look like. A stereotypical spatiality that does not take into consideration the relational aspect in these places that remains nameless and faceless, in addition to ignoring the place as a point of playable politics.

4. A Casual Theory of Space

In their critique of empire video games, Sabine Harrer employs the term *casual* as a "pervasive ideological category, which resists decolonization by rendering the problem of empire invisible." (2018) Harrer points out that academia represented in formalist game studies, along with game designers and players, was *casually* involved in constructing imperial values in video games. In this text, I build on Harrer's proposition to argue that the depoliticization of the gamespace in *September 12th* coincided with the rise of scholarly literature between the late 1990s and early 2000s that, on different occasions, have applied the same methodologies of depoliticization to the question of space in game studies. Such literature has invisibilized the pluriversality (Escobar 2018) nature of the gamespace and granted the game industry legitimacy to code a *casual* representation of space.

4.1. Abstracting The Gamespace

The "triad" models developed by game scholars such as Espen Aarseth (2001), Stockburger (2006), and Michael Nitsche (2008) have depoliticized Lefebvre's anti-capitalist project to propose an abstract definition of the gamespace. Although Aarseth was aware of how dangerous it may be to "map Lefebvre's theory of space onto computer games" (Aarseth,

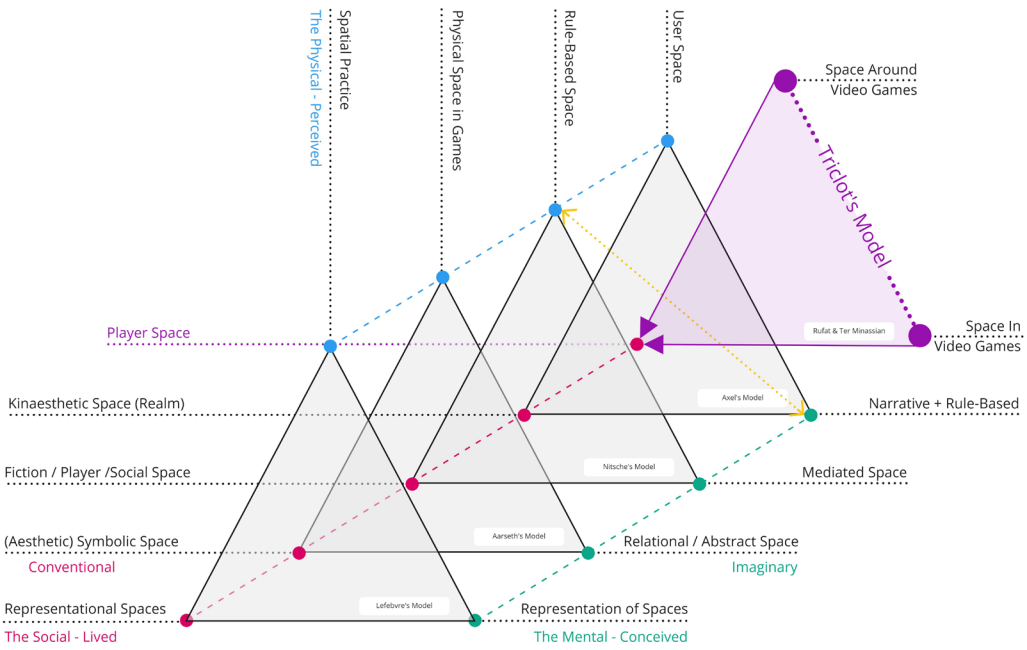


Figure 42: An abstract representation by the researcher of how schoalrs abstracted Lefebvre triad models.

2001), he did[1]. Whereas Axel Stockburger and Nitsche's definitions associated different plans and models with a different dimension in Lefebvre's triad, both associated the player's physical space with Lefebvre's "lived space." In contrast to Aarseth, who considered the lived space as a "symbolic imagery with a primarily aesthetic purpose," Stockburger's thirdspace is the realm constituted by the players' kinesthetic actions. Nitsche considers the thirdspace as the combination of the fictional space, the player space, and the social space. On the other side, Garry Crawford argued that game scholars have "cherry-picked" concepts from Lefebvre's theory while ignoring his social critiques (2015; p572), and Benjamin Fraser wrote that "there is a danger in reifying video games as themselves one aspect of his triad model of space." (2011, p100)

While Crawford and Fraser's critiques touch on scholars' misreading of Lefebvre's urban theories, here, I want to stand against the applied methodology, which is *abstraction*. Formalist 'gamespace' studies have been stuck in western definitions of abstraction. For architect Fernando Luiz Lara, abstraction is "the most pervasive form of privilege." (2021)

1 In their 2001 article Allegories of Space, Aarseth refers to Lefebvre's triad in a very subtle way. However, Stephan Gunzel has clearly linked Aarseth's triad layers of gamespace with Lefebvre's triad in their 2019 edited book with Espen Aarseth titled Ludotopia.

Abstraction has been a tool of white European coloniality and inequality since the 16th century. By thinking of "space as a surface," (Massey, 2005, p.4) colonialism has separated its geography from its spatial temporalities – represented in its people, goods or lands. By doing so, colonialism has reduced non-whites to an object subject to plotting and thereby for control. Luiz Lara tells us that architecture design is plunged into practices of abstraction, as in the practice of slicing objects into drawing plans, sections, and elevations.

Abstract design is about "discarding information in order to be able to manipulate what we consider the essence" (Lara, 2021). And in our case, scholars have torn Lefebvre's project from its political context, which is understanding the crisis tendencies of modern capitalism through the production of space and taxonomizing his work into its triangulation method. A method that he had originally employed as a strategy against binary thinking about space and place to avoid the temporal logic associated with both Hegelian and Marxist dialectics. (Unwin, 2004) By reducing the gamespace into abstract layers, gamespace theory has become stuck in a western and colonial paradigm of surveillance and exclusive universality that rendered the political gamespace out of reach.

4.2. Taxonomizing The Gamespace

Early scholars have widely created taxonomies and categories to make sense of the gamespace. Mark J. Wolf (1997) proposes 11 classifications of gamespace's evolution: from text-based spaces to three-dimensional and mapped space, passing by the scrolling on an axis and the split-screen. *A multi-dimensional typology of games* proposed 16 dimensions grouped into six categories in which three dimensions (perspective, topography, and Environment) are directly connected to the question of space. (Aarseth & al, 2003) This classification was refined and expanded to include 17 dimensions grouped into eight categories in *Game classification and game design: Construction through critical analysis* (Elverdam & Aarseth, 2007) in which a 'physical space' category was included to make space for Location-based games. The article *Evolution of Spatial Configurations in Videogames* proposed a different classification that starts from the point of gameplay's cardinality, which is "the number of axes (x, y, z) that the player can use to move." (Fernández-Vara & al, 2005) Gameplay cardinality is categorized into two types: discrete or limited movements and continuous or major movements. The article proposes eight spatial configurations grouped into six sub-categories assembled under two categories.

Björn-Olav Dozo (2019) argues that "industry imposes a teleological vision of the history of consoles, which follow one another in order to achieve the best possible, that is to say, those of the current generation."[2] Looking at the proposed taxonomies and categories reveals the industry's profound and subtle implications on the definition of the gamespace. Wolf's taxonomy follows a linear progress narrative in which text-based spaces become the least advanced category and three-dimensional space the most advanced representation of gamespace. Although the work led by Espen Aarseth and Clara Fernández-Vara tried to deviate from Wolf's *linear progress*, still, their gamespace's categories were subject to the technological progress in the game industry. As abstraction, *progress* is a western colonial construct that considers technological progress the spur to societal development from savagery towards advanced civilization in a constant forward movement (Hemphill & Blakely, 2015), which invisibilized non-white, non-European and consequently non-civilized cultures and render their territories subject to colonialism.

To give an example, the article *A multi-dimensional typology of games* brings the example of the empire video game *Age of Empire* (Ensemble Studios, 1997) to demonstrate that the topography of its gamespace is geometrical (continuous freedom of movement) and that its camera's perspective is omni-present (being able to examine the entire gamespace). However, *Age of Empire*, as *Sid Mir Civilization*, is rooted in a colonial representation of space. Though, the article classification omits the colonial roots of both the geometrical topography and the omni-present perspective when applied to its gamespace; that applying the *omni-present* (view from above) in which the player becomes a colonizer who freely unveils the black spaces in the game's *geometrical* topography to control unknown territories is a reproduction of colonial and casual fantasies.

Katherine Mckittrick reminds us that categorization is "an economized emulation of positivist classificatory thinking that is produced in the shadows of biological determinism and colonialism." (2020, p.38) By analyzing its scientific and colonial roots, taxonomy tends to erase some knowledge for a more dominant knowledge to rule and control. These types of theoretical classifications normalize the representation of violence and oppression in the gamespace. By applying a taxonomy of technological progress to the definition of the

2 Translated from French by the author. Original Text "l'industrie impose une vision téléogique de l'histoire des machines, qui se succèdent afin d'aboutir à la meilleure possible, c'est-à-dire celles de la génération actuelle."

gamespace, scholars affirm the dominant position of AAA studios on our perception of gamespace by invisiblizing its other aspects; that gamespace as physical space can be socially produced and that gamespace can be either wielder of or subject to dominant, neocolonial and oppressive power.

4.3. A Forgotten Political Project

Media Scholar and philosopher Stephan Günzel proposes that computer game studies "took a turn towards space." (2008; 2019; 2020) He correlates the game studies spatial turn to the one that took place in humanities and cultural studies through the work of Michel Foucault, Henry Lefebvre and Edward Soja. While the spatial turn in game studies was tagged along with the turn in social science and humanities, it failed to pick up its political project on the way in. The spatial turn in philosophies, social sciences or humanities was vital because it offered a lens to new and different knowledge that has been invisibilized; in these fields, it was the knowledge on hegemonic power and injustices. For example, Foucault exposed the state's spatial surveillance and governance, Lefebvre's Marxist project critiqued urban capitalism, and Soja's project was situated in a post-colonial sphere. However, when game studies borrowed these spatial lenses, they remained disconnected from their political project.

The abandance of the political project was influenced by two factors that emerged with the birth of game studies' discipline: *Narratology* versus *ludology* debate and the concept of *magic circle*. Game studies wanted to build its proper pillars and foundation in separation from other disciplines, which resulted in the *Narratology* versus *ludology* debate. As a result, the first two decades in game studies, according to Amanda Phillips, were dominated by formalist perspectives that "shied away" from cultural critique of video games. (Phillips, 2020, p.19) Not just did it abandon discourses on critical race and gender, but it rendered inconspicuous critical scholarships on race and gender that was produced in the "aftermath" of this debate. (Shaw, 2018)

The invisiblization of these questions, especially when it comes to the question of space, was endorsed by the adoption of the "magic circle" as a global rule that define the nature of the gamespace. The term gained strong grounds since it was borrowed from Johan Huizinga's study of Homo Ludens (1938) who is considered one of the founders of the modern study of play. Although the concept has been stretched since its introduction in 2003 by Katie Salen and Eric Zimmerman, at its core, the magic circle meant to separate real-life events from in-

game events. By doing so, it was possible, and if needed, to separate the physical space with its complex layers of injustices from the gamespace.

Katie Salen and Eric Zimmerman acknowledge that since "game design is an emerging discipline, we often borrow from other areas of knowledge." (2003) As designers, game scholars from different disciplines have borrowed concepts from architectural practices and geography to fill the gaps in the newly born discipline. The question then is, what was the ethics and motivation that shaped this borrowing culture? With the absence of a clear political project and derived by the game industry's rapid technological progress or the demands of the neoliberal academy, (Philips 2020, p19) several scholars have adopted the Eurocentric and colonial methods of abstraction and taxonomization to build a literature on the nature game space.

The competitive demands of the neoliberal academy are manifested in how the "narratology vs ludology" debate, which existed for almost a decade, was born out of the question of space in video games. The insertion of "space" and "architecture" in Henry Jenkins's article *Game Design as Narrative Architecture* was, according to him, to offer a "middle-ground position between the ludologists and the narratologists" (2004) - a constructed dichotomy that did not almost exist before Jenkins publishing the article. The focus, then, was shifted to position the field of game studies within the neoliberal academy rather than centralizing spatiality in game studies. Other publications were more concerned with filling the big gaps dug by the game industry's rapid and linear technological progress. For example, the previously mentioned categories proposed by Espen Aarseth and their peers in the 2003 and 2005 publications managed to produce, according to them, "50000 different functionality different games" (2009, p.2) to fill up these gaps and though their 2009 article *Mapping the game landscape: Locating genres using functional classification* admit that they still have *big gaps* to fulfil.

5. Breaching the System

Although we appear to be witnessing a renaissance of queer, feminist, and critical race scholarship in game studies (Phillips, 2020), the question of the nature of the gamespace appears to be still entangled in euro-centric and neo-colonial definitions of space. Since its publication in 2014, with a 2nd edition in 2019, the book *An architectural approach to level*

design has become one of the essential references for non-architect game developers to create spaces in video games. However, the book brings the same apolitical architectural curriculum. It strips architecture from its imperial, colonial and racial roots, (Baydar, 1998; Cheng & al, 2020) which conveys neutral imagery of modernist architects such as Le Corbusier (1887-1965) and Mies Van De Rohe (1886-1969), who collaborated with fascist and nazis' regimes or Philip Johnson (1906-2005) who also worked with the nazis and who racially segregated black architects from exhibiting at the MoMA Museum.

Theorizing players' reconstruction of their cities in *Minecraft* as an act of "détournement" is another example of how the academy is still stuck in a neoliberal understanding of gamespace. In the 2020 article *Expérimenter la production de l'espace urbain par la médiation de Minecraft,* the authors start by situating *Minecraft* within the triad of Marxist philosopher Henri Lefebvre to argue later that the participation of players in reproducing the city of Rennes in the game is an act of "detournement." (François & Triclo, 2020) But is this true? In fact, the recreation of actual cities in Minecraft's gamespace was a constitutional part of the Mojang advertising agenda when they announced the non-beta version of the game for the first time at the 2011 Minecon event. Looking at the act of "détournement" from a situationist perspective, players were, in fact, consumers of Mojang's advertising strategy. Framing players' contribution as "détournement" by scholars solidifies Mojang[3] and currently Microsoft's position in pushing for a neocolonial and neoliberal agenda. (Brazelton, 2020 & Dooghan, 2019)

This text suggests that the recursive pattern in which gamespace studies and the game industry are shaping and reshaping the nature of the gamespace is comparable to the *Autopoiesis*[4] nature

3 I came to the conclusion that there is an indirect correlation between Minecraft's charming ability to secure research funds and our constant inability as scholars to see its systemic issues in participatory schemes. We forget that the first-ever participatory project was engineered by Minecraft, pretending to serve marginalized communities, those who, in many areas, cannot afford a computer or a console in the first place. Maybe this would explain why a teenager in São Paulo would prefer to play a match of football rather than sit behind a computer screen playing Minecraft (Annex), a device that will be -anyway- taken away from them in a couple of days! But most importantly, we forget that we predominantly write about Minecraft from our position as 'privileged scholars' who can actually afford to get the game while adopting a language of diversity and inclusion. We gaze at the final product, the beautiful render, the breathtaking timelapse, and the smiling kids. We remember to commend Minecraft's spatial scheme unconditionally, but we forget (or prefer not) to examine their politics.

4 Autopoiesis is term that was first introduced by biologists Humberto Maturana and Francisco Varela in 1972 and later the term was by Jamaican writer and cultural theorist Sylvia Wynter in her anti-colonial black radical writings. The term adopted has also been part of the vocabulary of social system theory and cybernetics.

of living systems. *Autopoiesis* is the ability of a living system to reproduce itself repeatedly through itself in a closed system. The industry benefited from academia to legitimize its existence and normalize its *casual* (Harrer, 2018) perception of the gamespace and, on the other side, academia benefited from the industry's continuous technological progress in the representation of space to abide by the "competitive demands of the neoliberal academy." (Amanda Philipps 2020, p19) For this to happen, space was depoliticized, abstracted, categorized and taxonomized. These repetition and replication processes keep the system alive but also normalize it, showing the system as imperceptibly quotidian and unalterable. For Katherine Mckittrick and Sylvia Wynter, our work is to notice the recursive looping system and breach it. (Mckittrick, 2020)

But breaking the loop is an elusive purpose with the double standards formal gamespace scholars have established with the industry. Henry Jenkins was one of the early scholars to touch on topics of colonialism and gender in game studies. However, his position from rejecting Nintendo video games for its colonial context while supporting and defending Grand Theft Auto III despite its clear politics of reproducing neoliberal urbanism, racialized spaces as well as systems of spatial segregation shows unjustified disparities[5]. The double standards that formal scholars impose, especially when it comes from "respected public scholar[s]" (Phillips 2020, p56), contribute to the abstraction of the gamespace and the invisibilization of issues of race and gender.

Such understanding explains why the majority of gamespaces depicting protest – from *SimCity* in 1989 to *Riot Operator* in 2023 – are still repeating the same irrational, and usually criminal, representations of crowds versus the representation of spatially-aware police even when the game is developed by amateurs or independent developers and claims that it stands on the side of protesters, as in the case of the 2019 video game *Riot: Civil Unrest.* The picture of irrational crowds of protesters was initially drawn by 20th-century psychologists whose work constituted the handbook for policing crowds. The procedurality of simulating protesters in

5 Henry Jenkins express his worries while "watch[ing] [his] son playing Nintendo" as "[he] watch him play the part of an explorer and a colonist" (Fuller & Jenkins, 1995) and at the same time "defend[ing] the violence in GTA III against media critics in 2002" (Phillips 2020, p55) while still reminding us that he is a "father [who] have raised a son successfully through his teenage years. " (Jenkins, 2002) With these givens, it becomes complicated to read Jenkins's dialogue as a true contribution to anti-colonial theory in game studies and not to associate his writing about Nintendo's colonial aspirations, even if the argument in itself may be correct, as an influence of the 'Japanese bashing' culture that was dominant in the US during the postwar and till the early 90'.

gamespaces was normalized by separating it from its racial, political and cultural roots – as in *SimCity 2000* separating the riots from its racial roots. The recursive logic of simulating crowds adopted by AAA studios which were impulsively repeated by independent studios, rendered crowds' irrationality in the gamespace inconspicuous.

The waves of protests that emerged in the last decade, from the 2011 anti-government Arab Spring uprisings all the way to the 2020 Georges Floyd protests against racial violence, revived our attention to study the gamespace as a political space that cannot be separated from our physical spaces, especially with the significant numbers of video games that have been developed depicting contested public spaces. However, for scholars and designers, there is still a lot of work to do to break the looping system that is feeding gamespace studies and design alike. As the political game *September 12th* proved, a video game that claims to stand against injustices does not necessarily mean that its gamespace delivers the same message. Challenging politics has to start with challenging the politics of the production of the gamespace itself.

Additionnally, there is a need to challenge institutional promises of inclusion which according to Sara Ahmed "makes the signs of exclusion disappear"; rather than exposing the problem, we become the problem. (2012) Amanda Philipps speaks about the "inchoate discomfort" (2020) of women, people of colour and queers' graduate students and early career scholars, especially when seen as the "diverse" body. In game studies, we must resist academic tendencies in normalizing the politics of the gamespace. These tendencies are still manifested in our citation practices or through institutions, and peer-reviewers suggested literature, especially for young and marginalized researchers. This has to start by deviating from formal literature that isolate the gamespace from politics and diverting the scholarly debate that encourage the major players in the discipline "toward a critique of form and structure [of the gamespace] rather than [its] culture and representation." (Philipps, 2020, p.20)

Architects and spatial scholars' current interest in studying gamespaces has produced a type of non-critical literature that romanticizes whatever is linked to architecture and play together. As scholars and designers, we need to review our ethics of borrowing from architecture, not to include literature or figures with a complicit history against racialized and marginalized communities. Architects also need to look at video gamespaces beyond their representational abilities to avert their visual authority in manipulating our realities, a skill that architects are well-trained to do it.

Summary

This thesis aims to reposition the role video games play in society from entertainment or a social phenomenon to involve responsibility in social struggle and social movements and find ways to claim the physical space through the gamespace. The gamespace is a digital overlay of our physical spaces. Consequently, it is space that can be a wielder of or subject to power struggles and capitalists and neocolonial agendas. Two performances of democracy have defined the framework of my thesis: protest and participation. The first contests the ownership of the public space and the other entails a subtle agreement on the shares of this ownership with the state. If the Egyptian revolution has induced my interest in studying protest in gamespaces, my particular interest in studying participation was to learn how players have been able to protest and disturb the participatory process with its root hierarchies.

The overarching question of this thesis is how can we lay spatial claims over the gamespace from a decolonial point of view? By laying claims, I mean laying ownership over the gamespace to serve our interest in seeking spatial justice on both levels: the physical and the digital instead of those of the neoliberal institution or state hegemony. These claims are a spatial claim, a digital claim and a claim over code. For these claims to be substantial, I followed a grounded theory logic that liberated this thesis from a fixed question and a specific hypothesis. I employ reflexive positionality in which I recognize myself as part of the research. This research has comprised three cycles of synthesis that embrace our claims. My methodological approach allowed me to change and readjust my initial research questions to adapt to each cycle. It has also allowed this research to take the form of an article-based thesis that allowed this research to branch off, corresponding to the most relevant methodological tools and theories.

The structure of my three cycles bridges my current Ph.D. dissertation with my previous master's thesis as well as my future post-doctorate inquiries. In the following, I will highlight the outcome of my claims which have expanded over five chapters along with the introduction and my epilogue.

Cycle 1

The first cycle is about spatial claims. I exposed how architecture and spatial design have been utilized against protesters by authoritarian regimes or the forces of the status quo for purposes of control and security. Regimes have enacted by physical interventions such as the construction of concrete walls (e.g., Beirut 2019, Egypt 2011), as well as the imposition of policies (e.g., Ontario Bill 28 in 2022 & Quebec Bill 78 in

2012) to restrain protesters from performing their core human rights: the right to claim public space during social movements. In the aftermath of protest movements, we find practices such as public art removal, changing landscapes, and rerouting roads in the effort to maintain order and domination over public spaces.

The second contribution of this cycle was to showcase protesters' innovation in applying spatial tactics in resisting these strategies of erasure and control. A visual summary of the different strategies and tactics employed during protests is presented in the Introductory chapter.

Cycle 2

The second cycle is about claiming the digital space of video games. This cycle constitutes most of my Ph.D. dissertation and is divided into three microlayers. The first layer (Chapter 1: Architecture of videogame spaces) offers a literature review of the nature of the gamespace. We learn from chapter 1 that theories used to define the gamespace are western, abstract, and privileged. We advocate for a critical reading of Lefebvre's urban project that focuses more on his aim for spatial justice and less on fixating on his trilogies

With this quest in mind, I proceed to the second layer to analyze video game spaces of protest (chapter 2: Videogames and Protest) and participation. (Chapter 3: Playing, Mapping and Power) We know from chapter 2 that the gamespace is not disconnected from the city and that the ways of claiming the virtual space of protest are at the point of computers' servers and collective game jams events. In Chapter 3, we witness the failure when the system lets you be part of a participatory project. Because the system never allows its participants to the point of making and claiming their redesigned spaces.

The third layer of analysis brings protest and participation in comparative analysis (Chapter 4: Mapping Algorithmic Injustices and Code Policing in the Gamespace). In chapter 4, the cases of *Pokémon-Go* and *Riot: Civil Unrest* prove that participation and protest in the gamespace start at the point of the algorithm. We realize that the writing of urban theorists and geographers is not enough anymore, that spatiality in video games is about code and that there is no resistance without a spatial grasp over code.

Cycle 3

The third cycle starts from the second cycle's conclusion that a claim over the digital space requires us to exercise claims over the code. Therefore, I carried myself into a code-learning journey within a research-creation milieu to develop a video game titled *Return to Sender*. (in Chapter 5) This project is my protest against policing tactics of spatial control in social movements and my personal claim over narratives of oppression and irrationality that dominate crowds of protesters in the gamespace. If we consider chapter 5 as the first microlayer for the third cycle, the next step for this research and its second microlayer will be analyzing and recalibrating protest simulation in the gamespace. There is an urgency in dissecting Agent-Based Modelling techniques like the 'contagion models' and algorithms, like the 'Reynolds Flocking' and 'Leader-Following Behaviours' to repurpose crowd simulation and Machine Learning technologies to serve a social and tech-justice agenda.

Finally, in *Notes on the Field*, I revisit the concepts laid out in the first chapter, *Architecture of Videogame Spaces,* to propose a counter-reading of this literature with the aim of recalibrating the representation and study of gamespaces towards a spatial justice agenda. *Notes on the Field* could have only been written at the end of my project after a complete analysis of the three cycles and being aware of the profound and historical implications of the field of game studies as well as architectural research in weaving a complicit image of the gamespace. Video game conceptualization and theorization must move outside of its Eurocentricity. Scholars must find an otherwise conceptualization of the gamespace that draws from the south, indigenous, black, or queer epistemologies worldwide. Video games and their spaces should not remain in a white colonial realm.

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