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AN ARTIST RESEARCH ON FORM, CHAIN REACTION AND DURATION

MONITOR: RE-IMAGINING THE CLOCK TOWER

Bilkent University 2020

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RE-IMAGINING THE CLOCK TOWER

AN ARTIST RESEARCH ON FORM, CHAIN REACTION AND DURATION

A Master's Thesis

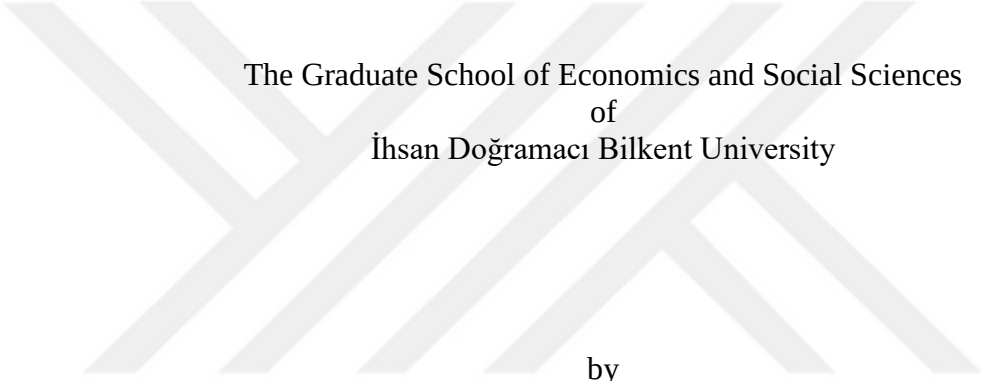
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Ankara
June 2020

To Dıdıguş



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The Graduate School of Economics and Social Sciences
of
İhsan Doğramacı Bilkent University

by

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ABSTRACT

MONITOR:

RE-IMAGINING THE CLOCK TOWER

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M.F.A., in Media and Design

Supervisor: Assist. Prof. Andreas Treske

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Monitor is a re-imagination of a *clock tower*, which re-conceptualizes the passing of time in a way that all moving elements inside the city outdoors become the units of the timekeeping activity. Abandoning the conventional approaches that frame *time* as a homogeneous entity, I make use of Bergson's description of *dura*, and rethink the so-called homogeneity rather as a heterogeneous structure composed of distinct durations that are constantly intersecting with each other, and, produce infinite amount of arbitrary arrangements. This thesis offers a concept of an urban media sculpture that mirrors the movement of the people in outdoor settings, by collecting the real-time data from public monitoring systems. In doing so, the theory and the practice became intricate which makes the main focus of this thesis principally to celebrate the *process* of artistic research.

Keywords: Clock, Duration, Form, Motion, Visual research

ÖZET

MONİTÖR:

SAAT KULESİNİ TEKRAR DÜŞLEMELİK
BİÇİM, ZİNCİR REAKSİYONU VE ZAMAN ÜZERİNE
BİR SANATÇI ARAŞTIRMASI

Çelebi, Sena

Yüksek Lisans, Medya ve Tasarım

Tez Danışmanı: Dr. Öğr. Üyesi Andreas Treske

Haziran 2020

Monitör, zamanın akışının yeniden kavramsallaştırıldığı bir saat kulesi figürünün tekrar düşlemidir. Bu düşlem içerisinde, şehrin belirlenmiş bir alanı içinde hareket halinde olan tüm öğeler zamanı kaydetme aktivitesinde yer alan birimlere dönüşürler. Bunu yaparken, zamanı homojen bir mevcudiyet olarak tesis eden geleneksel yaklaşımlar terk edilmiştir. Yerine, Henri Bergson'un süre/müddet olarak çevrilebilecek heterojen zaman teorisi olan 'duration' (la durée) tanımından faydalanılmıştır. Bu görsel araştırma, bir şehrin açık bir alanında bulunan insanların hareketlerini gerçek zamanlı veriler aracılığıyla dijital bir ekran üzerinden yansıtan bir kentsel medya heykeli fikri sunar. Fikrin gelişim süreci içerisinde teorik ve pratik araştırmalar öyle iç içe geçmiştir ki, bu tez çalışmasının temel odağı sanatsal araştırmanın süreci haline gelmiştir.

Anahtar kelimeler: Biçim, Devinim, Görsel araştırma, Saat, Süre

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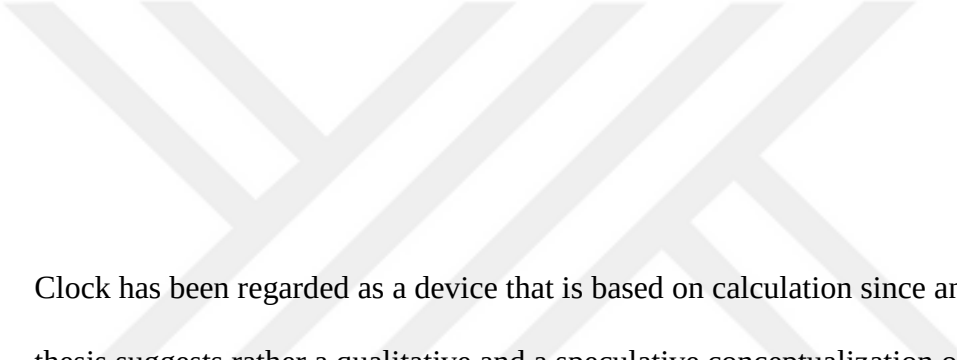
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CHAPTER I

INTRODUCTION



Clock has been regarded as a device that is based on calculation since antiquity. This thesis suggests rather a qualitative and a speculative conceptualization of time and the clock tower figure. Where theory and practice meet, I was inspired by Henri Bergson's theoretical approach towards time, and the manifesto of New Tendencies movement which looked at art as a visual research and a constantly in-progress experimentation. That's how I treated my thesis project not as a final product, but as a visual investigation on the way. That is to say, the focal point of this work is more about where my research was derived from and what doors it can open, more than what it is. When I started this journey, I did not know it would end up in where it did now, so in fact, it wouldn't be wrong to suggest that what defines this thesis is purely the process.

In Chapter 2, I introduce a brief history of timekeeping and the evolution of clocks, then suggest that time is not only a measurable unit but also an experience based knowledge. Following this introduction, I present Bergson's concept of qualitative multiplicity and

heterogeneous time, which he defines as duration (*la durée*). The last subchapter of my literature review, “Art as Visual Research” covers more of a practical and aesthetic approach I wanted to follow in producing my work. In this chapter I bring up a 60s international art movement called ‘New Tendencies’ that manifested art as visual research, and glorified the experimenting process. In doing so, they rejected any subjective or lyrical contribution to the artwork, but they rather championed rational and scientific ways of investigating with form, motion and image. So, their approach towards artistic research resonated my way of experimenting in many ways, except I did not abandon the subjectivity in my own art since what I wanted to create is already based on a qualitative speculation. Yet still, their abstract aesthetics and the keywords they always included in their work such as motion, participatory art and form corresponded my studies perfectly.

Chapter 3 reveals the development process of my work, *Clocks*. I first commenced the research process by asking rather a philosophical question which had a broad range of answers: “How do we make meaning out of visual symbols?” Then I have discovered several conceptions regarding this topic that were studied in 19th and 20th century under the title of semiotics. I tried to keep my focus particularly on visual semiotics and firstly studied the works of scholars such as Ferdinand de Saussure and Charles Sanders Peirce. Later on, I looked at visual signs, specifically textual signs, rather from a poststructuralist perspective. There I explored Jacques Derrida’s idea of infinite signification in meaning-making, and then created a visual metaphor for it: the infinity cube. Playing with this simple sculptural and dynamic form that can change shape in several ways led me to create an installation at first. The work was called *Chainstable*

and was designed to create a participatory experience in which meaning becomes context dependent and this context can be changed by the spectator to generate many different narratives. However, my research with the infinity cube was not finished and I also had discovered another feature of it, that is, acting like a module. Multiple of them together could generate infinite amount of arrangements according to the way one connect to the other and this was creating a chain reaction. They were acting locally, affecting their close surroundings and trigger bigger changes, as in butterfly effect. This perspective led me to establish an analogy between the togetherness of dynamic entities and our relative experience of time. I imagined the rhythm of city outdoors where hundreds of people, who experience time in their own unique understanding, move together by affecting each other's motion. Then I speculated on the idea that if cities can have their own clock. This clock wouldn't be based on something that flows the same for every person, it would be heterogeneous by visually featuring the moving inhabitants of a city one by one. Thus, that's briefly how I conceptualized the idea of a heterogeneous clock. Transforming this into a research question eventually has become the primary source of inspiration for my purely subjective and lyrical triptych art Clocks, and has opened some other new questions to think about, which I discussed as possible further study topics in Chapter 4: Conclusion.

CHAPTER II

LITERATURE REVIEW

2.1. A Brief History of Timekeeping

From the beginning of the history, keeping track of time has always been an activity that is of great importance to humanity. Recognition of the periodic movement of celestial entities such as the Moon, Sun and stars have been the primary reference point that ancient civilizations used for recording the passage of time. In doing so, they designated their own ways to frame time as years, seasons, months and days. We have a limited knowledge about the prehistoric era, however, according to today's archaeological data, the earliest finding of time measurement tools is from 32,000 years ago Stone Age. Those times in Europe, it is thought that human groups created first known lunar calendars by carving shapes and lines on cave walls, bones and stones in order to count the days between the phases of the Moon. Figure 1 demonstrates an engraved artefact

from Stone Age, which Alexander Marshack, a self-educated Palaeolithic archaeologist, interpreted as the first timekeeping act in the archaeological history that is based on lunar cycle (Soderman/NLSI Staff).



Figure 1. Artefact from Lascaux Caves, France. Alexander Marshack © Peabody Museum

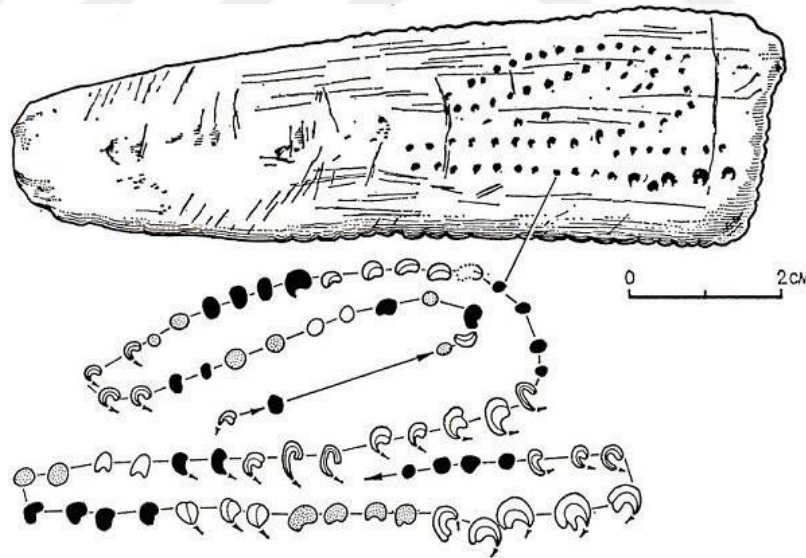


Figure 2. Alexander Marshack's study on the render of engravings. *The Roots of Civilization* by Alexander Marshack, 1991.

The first Egyptian and Babylonian calendars were also established upon lunar cycles, and they started to make calculations of time more than 5,000 years ago (Andrewes,

2006). Egyptians then observed the brightest star in the night sky, Sirius (also known as Dog Star) that ascends next to the Sun every 365 days. The appearance of Sirius also coincides with the yearly deluge of Nile (Grandchamps, 2018). From this discovery on, Egyptians began to arrange their calendar according to the solar cycle instead of lunar cycle, in which a year is formulated as 365-day long. This new calendar was created around 3100 BCE and it is regarded as the first one that marked years in history (Higgins et al., 2010) and “presumably for more-precise administrative and accounting purposes.” (The Editors of Encyclopaedia Britannica, 2017). Egyptians based their solar calendar on the seasonal changes that occur as a result of our planet’s rotation around the sun.

According to the historical records, great civilizations in the Middle East and North Africa began to invent timekeeping devices 5000 years ago as people lacked an organized schedule to regulate their everyday lives (Higgins et al., 2010). To be able to arrange public gatherings, organize events and communal rituals, people needed a more systematic and precise way of daily timekeeping, just like they needed yearly calendars to be able to track weather and climate events and seasonal changes particularly for agricultural purposes (Andrewes, 2006). In doing so, ancient Babylonians and Egyptians depended on the motion of the Sun over the sky (The Editors of Encyclopaedia Britannica, 2019). Then, they invented sundials, also known as *shadow clocks*. Today, sundials are considered as the earliest models of hourly clocks.

A sundial relies on regional solar intervals and is formed of two basic components. The first of these components is called *gnomon*. In its simplest form, a gnomon is a pillar or obelisk that is located vertically on a plane surface. The ancient Egyptians began to

build obelisks by 3500 BCE. It is also the most primitive version of sundials in which time is measured by tracking the position of the shadow that gnomon casts from sunrise to sunset. The second component is the *dial* that is placed horizontally on a surface, taking the gnomon as its center point. The Vatican obelisk can be considered as a famous example to sundials. The obelisk operates as the gnomon and together with the dial around it, they form a sundial (Figure 3).



Figure 3. Vatican Obelisk. View of Rome from the Dome of St. Peter's Basilica, June 2007

Greek, Northern and Eastern civilizations also developed various other examples to sundials, however, people needed to be able to measure time at night as well. Thus, not much later than the invention of sundials, people needed other instruments to track temporal hours. Sundial could not be a generic solution for measuring time because it was useless when the sun is set. Therefore, additional devices were invented in order to be able to record the passage of time also at night time when there is no sunlight. This is how water clocks were invented first again in ancient Egypt.



Figure 4. Left: World's oldest known sundial, from Egypt's Valley of the Kings (c. 1500 BC), used to measure work hours. Right: Hemispherical Greek sundial from Ai Khanoum, Afghanistan, 3rd–2nd century BCE.

As the history records of American National Institute of Standards and Technology (NIST) put, “water clocks are the earliest timekeepers that didn’t depend on the observation of celestial bodies” (Higgins et al., 2010). Also called Clepsydra later by the Greeks, a water clock is a simple device that records temporal time through calculating the amount of liquid that is poured out from one vessel -or basin- to another (Figure 5).

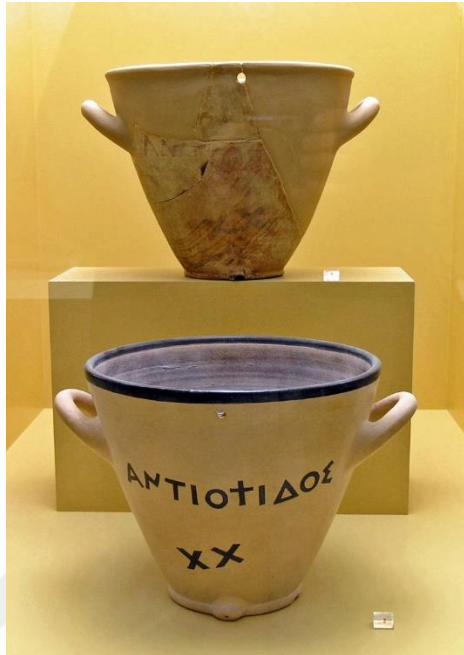


Figure 5. A display of two outflow water clocks from the Ancient Agora Museum in Athens. The top is an original from the late 5th century BC. The bottom is a reconstruction of a clay original.

Roman and Greek watchmakers improved the mechanism of water clocks substantially between the years of 100 BCE and 500 CE. The Physical Measurement Laboratory of U.S. National Institute of Standards and Technology emphasizes that “the added complexity [in water clocks] was aimed at making the flow more constant by regulating the pressure, and at providing fancier displays of the passage of time.” (Higgins et al., 2010) However, no matter how much developed it can be, a clock that is based on the flow of water could never accomplish a great accuracy, because it got really challenging to control the flow. For this very reason, people were eventually forced to invent other methods and the 17th century marked the appearance of pendulum clocks.

As defined in Encyclopedia Britannica, a pendulum is a “body suspended from a fixed point so that it can swing back and forth under the influence of gravity.” (The Editors of

Encyclopaedia Britannica, 2019). Pendulum is a simple machine that were being used in order to regulate clocks' motion and was first invented back in 17th century by a Dutch scientist, Christiaan Huygens. It was a useful device for measuring time because it was "regulated by a mechanism with a 'natural' period of oscillation." (Higgins et al., 2010). Huygens made the first pendulum clock in 1656, however history records tell that Galileo was the first who developed the concept of pendulum in 1582, yet he died in 1642 before he could actually build one. Huygens' first pendulum clock design accomplished a significant success since it decreased the clock error to less than 60 seconds a day. This was the first time such a precision was attained with a minimum amount of error. Huygens later diminished this error beneath 10 seconds a day. (Higgins et al., 2010)

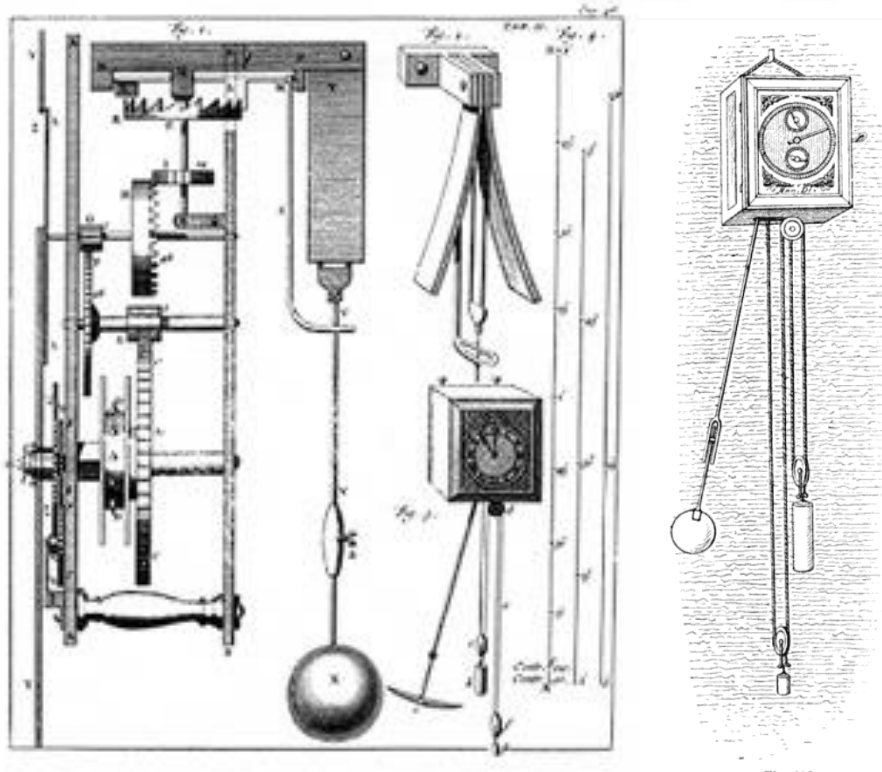


Figure 6. Illustrations of Huygens' pendulum

The studies on inventing an errorless clock after Huygens' notable improvements kept busily going in the following century as well. Almost 70 years later, George Graham succeeded to reduce the pendulum clock error to only 1 second per day. He achieved it “by compensating for changes in the pendulum's length due to temperature variations.” (Higgins et al., 2010) This advancement was the beginning of some revolutionary changes in timekeeping history, that is, the invention of accurate mechanical clocks.

Graham's refinements on pendulum accuracy was developed by John Harrison, a self-educated English carpenter and clockmaker. Harrison first found new ways for diminishing the friction against the pendulum oscillation, and by 1761, he “invented the first practical marine chronometer (Figure 7), which enabled navigators to compute accurately their longitude at sea.” (The Editors of Encyclopaedia Britannica, 2020) This revolutionary invention secured long-distance sea travels to a great extent.

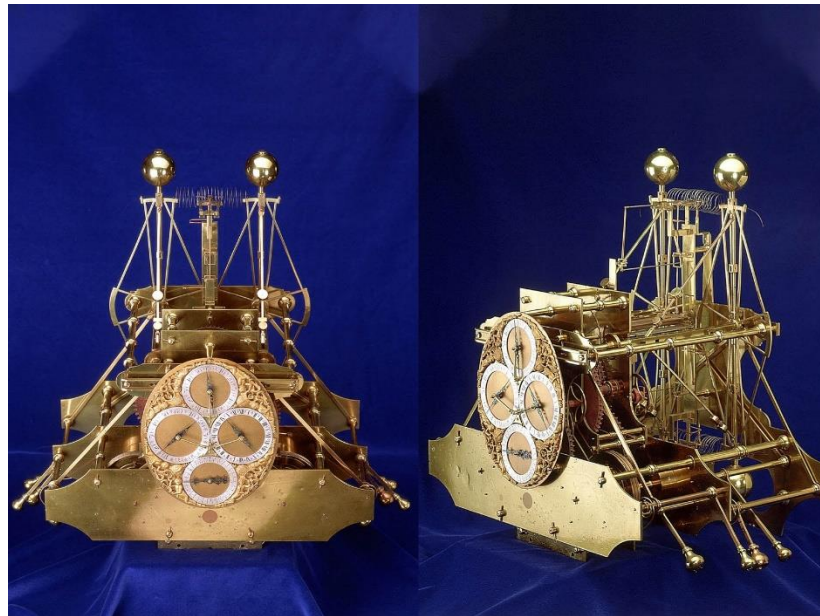


Figure 7. John Harrison, The First Marine Chronometer

By the 19th century, “refinements led in 1889 to Siegmund Riefler's clock with a nearly free pendulum, which attained an accuracy of a hundredth of a second a day and became the standard in many astronomical observatories.” (Higgins et al., 2010) After Riefler’s ‘nearly-free’ pendulum clock, a truly free-pendulum was presented by R.J. Rudd around 10 years later. Many more free-pendulum clocks were introduced thanks to Rudd’s principle, but the most famous one among all was the W.H. Shortt clock.

The next big thing in clock development came out around the 1920s, with the Shortt clock and pendulums being overtaken by quartz crystal clocks. The piezoelectric feature of quartz crystals was discovered to be an appropriate material for building precise clock oscillators, because it eliminated the external factors that distort the oscillator’s regular frequency. Although quartz clocks remarkably simplified the formula of clockmaking with a strong accuracy, it needed to be surpassed by the emergence of atomic clocks. The reason is that no two crystals can be absolutely the same, so their frequencies will also eventually differ even it’s very tiny bit (Higgins et al., 2010).

Today, the most accurate timekeeping devices are the atomic clocks. Their accuracy is acknowledged to be a 22% possibility of only 1 second within 3 million years (Birx, 2009). The first successful atomic clock was invented by Louis Essen in 1955 at the National Physical Laboratory in the UK (Essen and Parry, 1955). Soon after the atomic age of timekeeping has started, The International System of Units introduced ‘the second’ and therefore standardized the passage of time (Higgins et al., 2010).

We still rely on this internationally recognized standardization of time as a measurement unit, and it is a fact that we need such a regulation in order to keep up with our lives.

However, when we talk about time, one can also bring up the existence of intuitive moments where time is ‘experienced’, not measured.

2.2. Bergsonian Thought

2.2.1. Introduction

Henri-Louis Bergson (1859–1941) was one of the most famous and significant French philosophers of his time. His educational background was originally in mathematics, and he was one of the brightest students in Lycée Condorcet, who won the first prize for the prestigious *Concours Général* with his solution to a Pascal problem in 1877. However, he later chose to continue his studies with philosophy and entered École Normale Supérieure at the age of 19.

As a philosopher, Bergson has produced four prominent works in which he argues about the subjects such as free will, time, multiplicity, memory, matter, intuition, philosophy of life and the dynamics of society. In (1) *Time and Free Will*, he detaches time from space and determines an innovative approach towards free will. (2) *Matter and Memory* seeks to investigate different kinds of memory by providing a “non-orthodox dualism of matter and mind.” (Pearson, 2018). In (3) *Creative Evolution*, Bergson makes use of Darwin’s mechanism of evolution in order to demonstrate a new theory of life. He also improves his concept of time in a deeper level in this text, suggesting that the perception of time as "duration" can best be experienced by the agency of intuition. His final book

(4) *Two Sources of Morality and Religion*, focuses on society from the aspects of closed (static) and open (dynamic) moralities. Additionally, this text keeps on advancing ideas that derive from Creative Evolution (Lawlor and Moulard Leonard, 2016).

Among Bergson's all of the contributions to philosophical thinking, Gilles Deleuze identifies that the concept of *multiplicity* is the most permanent one. What makes it this enduring, according to Deleuze, is Bergson's novel "attempt to unify in a consistent way two contradictory features: heterogeneity and continuity." (Lawlor and Moulard Leonard, 2016). Today, the concept of multiplicity is admitted as a ground-breaking theory by most of the philosophers. "It is revolutionary because it opens the way to a reconception of community" (Lawlor and Moulard Leonard, 2016). The subject of multiplicity will be expanded further on in the next sub-chapter 'Duration and Heterogeneity in Time'.

2.2.2. Duration and Heterogeneity in Time

Unlike conventional approaches towards understanding the passing of time, Bergson's concept of 'duration', originally named *la durée*, proposes heterogeneity in time. The conventional approaches include the practice of scientific clock that keeps and tells time in a static and measurable way. It is static because in scientific clock, time is a constructed entity. This construction of dividing a day into 24 hours is depicted as homogeneity in Bergson's writings since the flow of time is observed as the same for

everyone who acts according to that clock. That is to say, one minute equals sixty seconds if one acknowledges the universal standardization of time. However, there are also intuitive passages in which time is perceived as a relative flux that is grasped through one's immediate consciousness. This "psychic time" is interpreted as pure duration in Bergson's writings and "is presented as an aspect of a synthesizing consciousness; that is, its reality is something solely psychological." (Pearson, 2018).

Bergson "rejected static values in favor of values of motion, change, and evolution" (The Editors of Encyclopaedia Britannica, 2020). In doing so, the concept of duration shaped the foundation of his philosophy, and was first introduced in his doctoral thesis *Time and Free Will: An Essay on the Immediate Data of Consciousness*. There is not a definite way of explaining what duration is, but Bergson describes it through his idea of multiplicity. According to Bergson, there are two types of multiplicity. The first is the multiplicity of conscious states, and the other is the multiplicity of material object. The former is what Bergson calls as pure duration, which also refers to the heterogeneous time. It is the time we 'experience', unlike the time we measure (Massey, 2015). These two multiplicities were differentiated as being qualitative and quantitative. The latter implies a conception of number, as the name suggests. In quantitative multiplicity, material objects are exteriorized from each other in a spatial setting, which allows enumeration of things. However in qualitative multiplicity, "several conscious states are organized into a whole, permeate one another, [and] gradually gain a richer content" (Bergson, 2014). The multiplicity of conscious states exist in a temporal heterogeneity, and that is what formulates the idea of duration.



Figure 8. Bergson's illustration of qualitative multiplicity. From Heidegger's book *The Metaphysical Foundations of Logic*. p. 206.

In *Creative Evolution*, Bergson approaches Duration in terms of past-future dynamics. He illustrates it through two connected spools in which one unrolls towards the other (Figure 8). In doing so, he aims to define duration as 'the continuous progress of the past which gnaws into the future and which swells as it advances'. And one cannot rewind the progress and return back to the same past, because they will act no longer on the same person, since they find him at a new moment of his history'. (qtd. in Pearson, 2018).

"For Bergson, we must understand the duration as a qualitative multiplicity" suggests philosophy professor Leonard Lawlor and the author of *Bergson-Deleuze Encounters*, Valentine Moulard-Leonard (2020). What makes duration qualitative rather than quantitative is that its quality of being a non-enumerable entity. One cannot count several durations as such thing does not exist. According to Bergson, even using the word "several" is odd while defining duration, because it proposes numbering. (Lawlor and Moulard-Leonard, 2016).

In conclusion to this subchapter, duration resides in one's own intuitive experience of time, that is, a unique knowledge for every individual which can only be grasped through intuition.

2.2.3. Bergsonian Intuition

To describe his identification of intuition, Bergson provides two exemplary images in his essay *An Introduction to Metaphysics*. The first example demonstrates reconstruction of a city that is composed of juxtaposed photographs taken from different angles. Bergson asserts that the reconstruction can never replace the actual dimensional experience of the city. One can only grasp this experience through intuition. The other description of intuition that Bergson provides is the experience of reading a line from Homer. If one cannot speak ancient Greek, the experience of reading a translated version of this line will never be as dimensional as reading it in its original language.

As a perspective, it would not be wrong if one suggests that this has something deeply similar with the theory of map-territory relation. In his 1931 paper *A Non-Aristotelian System and its Necessity for Rigour in Mathematics and Physics*, Polish-American scientist and philosopher Alfred Korzybski discusses that "the map is not the territory" and "the word is not the thing", summarizing his opinion on how an abstraction obtained from an entity cannot be that thing itself (1931). From this point of view, one can think of Bergsonian intuition as a mechanism through which one returns to the unique and

original knowledge of thing itself. Thus, what Bergson emphasizes is that Intuition comes into being when one situates oneself within the Duration (Bergson, 1999). He mentions about this precondition in his essay *The Creative Mind: An Introduction to Metaphysics* (1999) as following:

There is, however, a fundamental meaning: to think intuitively is to think in duration. Intelligence starts ordinarily from the immobile, and reconstructs movement as best it can with immobilities in juxtaposition. Intuition starts from the movement, posits it, or rather perceives it as reality itself, and sees in immobility only the abstract moment, a snapshot taken by our mind, of a mobility.”

To understand the method of Intuition, Bergson suggests two ways of knowing an object: absolute and relative. Absolute is when one experiences intuition, when there is no division between the object and the mind so that the mind can reach out to the original and essential, or, “absolute” knowledge of the object. The other way, that is, relative, derives from the analysis of an object. Analysis happens when the object is analysed, or translated into symbolic fragments. The fragmented translations of the absolute object interrupt one’s intuitive reach, because *map is not the territory*. In other words, if map is the relative (analysis), territory is the absolute (intuition).

2.3. “Art as Visual Research”

New Tendencies (1961-1973) is an international art movement that was emerged in Zagreb, former Yugoslavia and today's Croatia. The movement manifests the idea of “art as visual research” also with a motive for demystifying art and making it accessible to everybody by thinking beyond the art market. The 12-year existence of the movement hosted five exhibitions in total which were established under the title of New Tendencies. The first exhibition, *Nove Tendencije* (New Tendencies) had opened in 1961 and hosted 29 artists all across the Europe according to the archival data of *Zentrum für Kunst und Medien Karlsruhe* (ZKM Medienmuseum, 2008):

Marc Adrian [AT], Alberto Biasi [IT], Enrico Castellani [IT], Ennio Chiggio [IT], Andreas Christen [CH], Toni Costa [IT], Piero Dorazio [IT], Karl Gerstner [CH], Gerard von Graevenitz [DE], Rudolf Kämmer [DE], Julije Knifer [HR (YU)], Edoardo Landi [IT], Julio Le Parc [AR/FR], Heinz Mack [DE], Piero Manzoni [IT], Manfredo Massironi [IT], Almir Mavignier [BR/DE], François Morellet [FR], Gotthart Müller [DE], Herbert Oehm [DE], Ivan Picelj [HR (YU)], Otto Piene [DE], Uli Pohl [DE], Dieter Rot [DE], Joël Stein [FR], Paul Talman [CH], Günther Uecker [DE], Marcel Wyss [CH], Walter Zehringer [DE].



Figure 9. Poster design for the exhibition Nove Tendencije, by Ivan Picelj.

The number of participant artists and variety of topics sharply increased in the next 4 exhibitions. Main themes of these exhibitions were Concrete and Constructive Art, Computer and Visual Research, Kinetic Art and Conceptual Art. Computer Visual Research was added into the schedule in the years of 1968-1969, in order to go parallel with the arrival of computer in the arts and the technological advancements of the period.



Figure 10. Other 4 New Tendencies exhibition posters designed by Ivan Picelj.

This movement has become one of the prominent resources of inspiration for my work, since I was aiming to conduct a visual research on form, time and motion through abstract imagery. New Tendency (NT) artists had a unique style that was based on this kind of a systematic experimentation. The emergence of computers in the art practice also had a strong influence in the way NT artists conceived art. The algorithmic structure of computer generated art resonated their intentions right on. Another significant aspect of NT is that they gave utmost priority to the active participation of the viewer. The role of the spectator had “much more significance than movement or optical effects as such.” (Medosch, 2012). In his doctoral thesis (2016) *Automation, Cybernation and the Art of New Tendencies (1961-1973)*, Armin Medosch (1962-2017), an Austrian artist, theorist and curator, discusses the participatory approach of NT artists by suggesting:

In analogy to the communication models established by semiotics and information theory, the viewer becomes part of a relationship artist-object-viewer which implies that the artwork does not receive its legitimation from its intrinsic properties -such as the laws of composition in the art of Mondrian or the spatial objects of Constructivists - but only through the relation it creates with the viewer. This resonates with contemporary aesthetic theories such as Umberto Eco’s ideas on *The Open Work*, published in Italian in 1962 (1989).

The visual style and content of NT movement pretty much resemble the movements Op Art, Kinetic Art, Conceptual Art and Constructivist Art, and it actually became a synthesis of these particular fields. “What was new was the specific way through which NT tried to achieve this: through the formula ‘art as visual research.’ Abstract art had tried to resolve the dichotomy between form and content by collapsing it: form became content.” (Medosch, 2012).

A majority of NT participants were opto-kinetic artists who together formed Groupe de Recherche d'Art Visuel (GRAV) (Research Group for Visual Art) in 1960. This Paris based group of collaborative artists investigated a broad range of optical and kinetic art by experimenting on various kinds of mechanical installations accompanied by artificial light sources. One of the most known artist of both GRAV and NT is Julio Le Parc, an Argentina-born artist whose focus is modern opto-kinetic art (Figure 11).



Figure 11. Julio Le Parc. 2017. Photo: Yamil Le Parc

Le Parc's famous kinetic installation (Figure 12), *Sphère Rouge* (Red Sphere) is an experience that he created out of a research on form, space and light, as he puts it (Nathan, 2016).

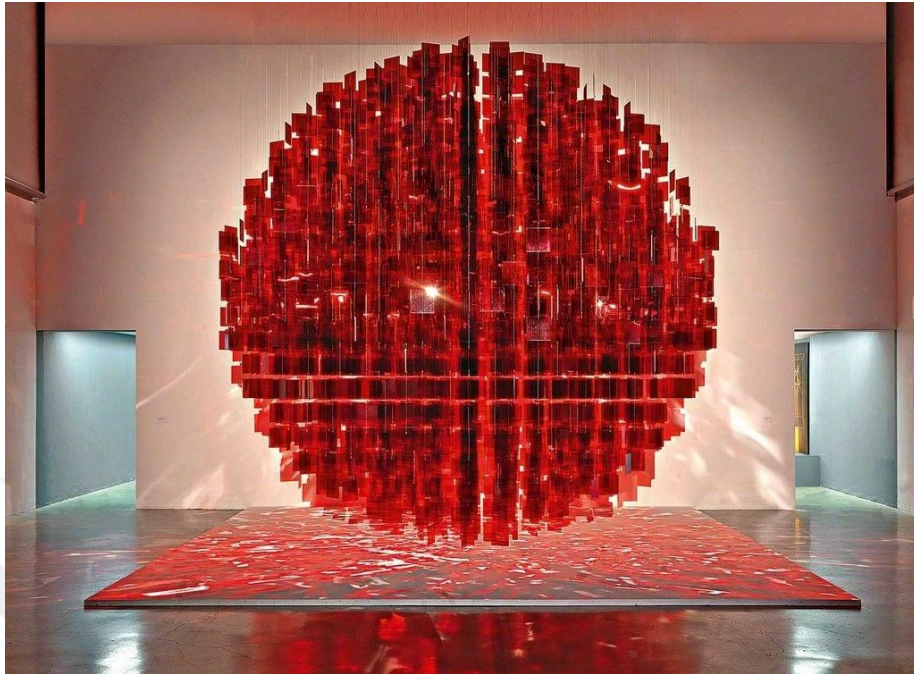


Figure 12. Julio Le Parc © 2016 Artists Rights Society (ARS), New York / ADAGP, Paris. Photo: André Morin

In a telephone interview, New York-born curator Estrellita Brodsky who is the author of the retrospective *Julio Le Parc: Form into Action* mentions about Le Parc's position towards the art practice: "He wanted to make work that encouraged people to pay attention to their immediate environment, and then in turn to pay attention to the larger social and political world around them." (qtd. in Nathan, 2016). Both GRAV and NT members shared the same concern with Le Parc regarding the sociopolitical potentials of art.



*Illustration 6: NT1, 1961, Exhibition view: b 256 and k 36 by Paul Talman (1961) (floor and wall); and Julio Le Parc, *Probabilité du noir égal au blanc n° 4* (Probability of Black Being Equal to White No. 4) (1961) (wall, right side); photo MSU Zagreb*

Figure 13. A view from NT1, taken from Armin Medosch's PhD thesis Automation, Cybernation and the Art of New Tendencies (1961-1973).

NT artists conducted their visual research in very similar ways. They all played with simple geometric forms and this resemblance was the very reason why the movement easily became international. They were artists from different geographies and knew very little about the works of each other before gathering for the exhibition (Medosch, 2012). For instance, Paul Talman was a Swiss sculptor and painter from Zurich, who had a strong interest in figure-ground relationship and motion. He was also one of the participant artists in the exhibition New Tendencies 1. His works b 256 and k 36 (Figure 14) “allowed the viewer to create a multiplicity of relationships between order and chaos. One of Talman’s objects was situated horizontally on a pedestal on the floor in

the center of the space inviting visitors to actively engage with it.” (Medosch, 2012).

Thus, participatory action of the viewer (creating changing patterns through shifting the background - foreground relationship of the plastic spheres that were painted half black and half white) was again a desired outcome of Talman’s work as well.

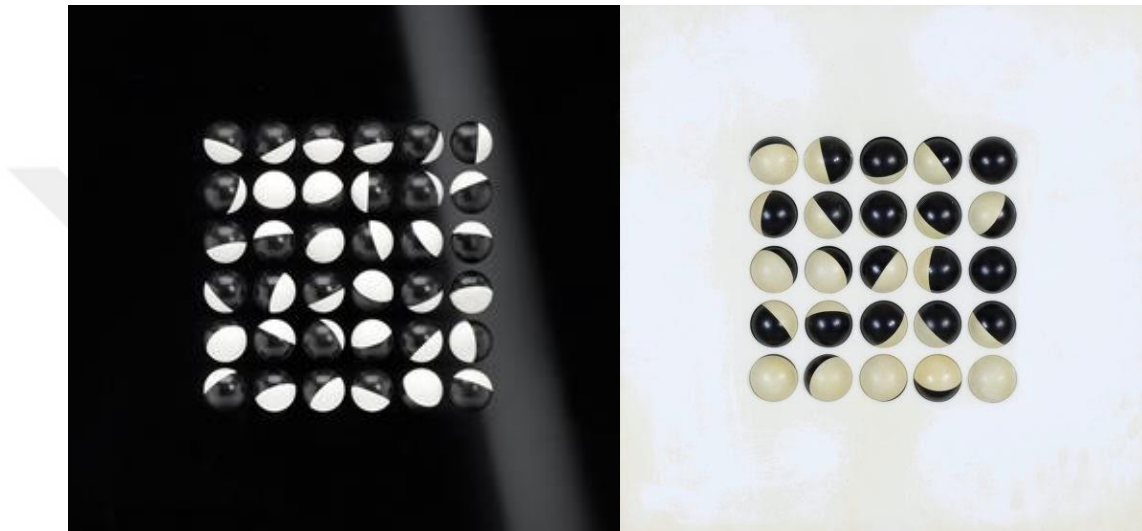


Figure 14. Paul Talman, k36-schwarz-weiss (left) and b256 (right).

Another famous example from NT art is titled *Random Distribution of 40,000 Squares using the Odd and Even Numbers of a Telephone Directory*, created by François Morellet in 1960 (Figure 15). The title of this pixelated oil painting already sums up the system Morellet had established while creating the piece. His purpose was basically “to cause a reaction between two colors of equal intensity.” (Morellet, 2009). Morellet reveals the simple structure of his system in *Random Distribution* as following: “I drew horizontal and vertical lines to make 40,000 squares. Then my wife or my sons would read out the numbers from the phone book (except the first repetitive digits), and I

would mark each square for an even number while leaving the odd ones blank. The crossed squares were painted blue and the blank ones red.” (Morellet, 2009).

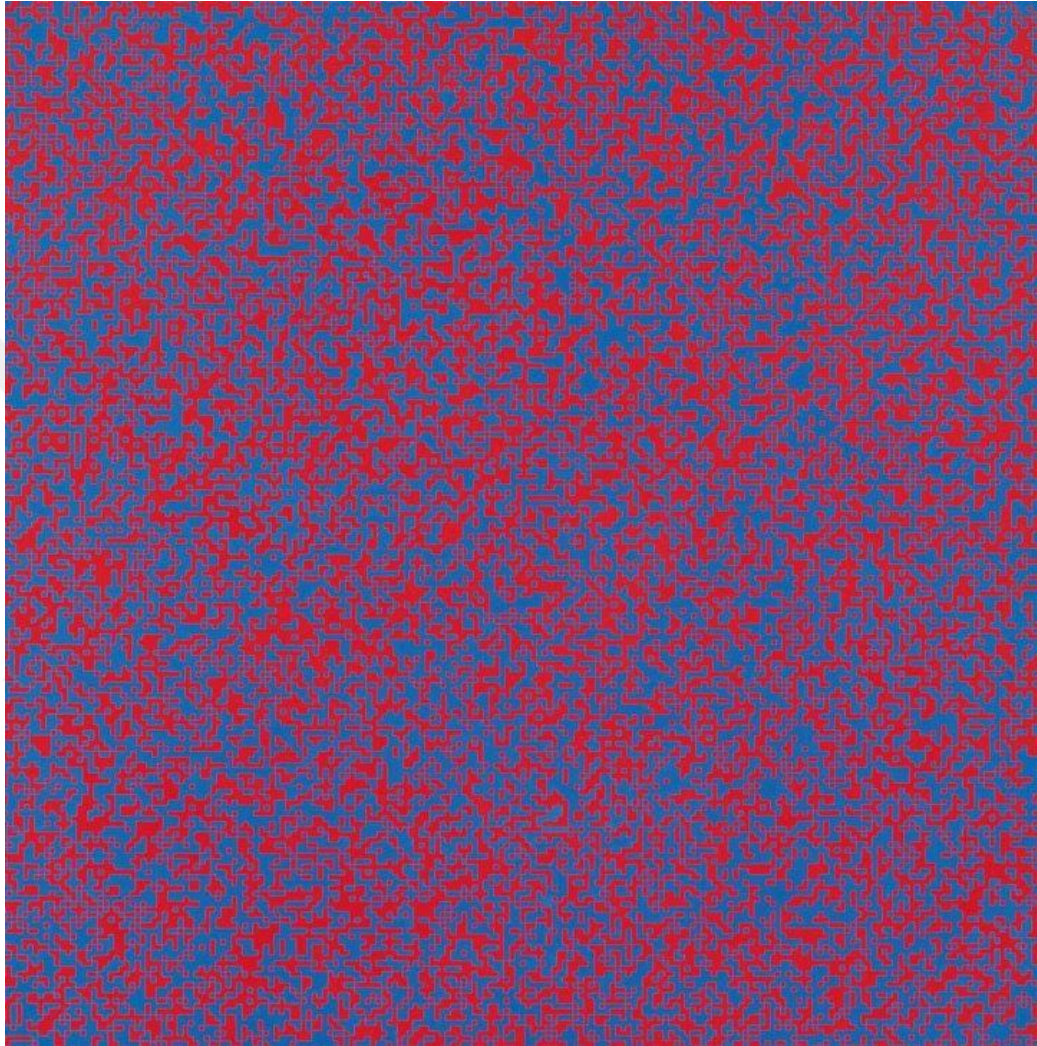


Figure 15. François Morellet, Random Distribution of 40,000 Squares using the Odd and Even Numbers of a Telephone Directory 1960, Oil on canvas, 103 x 103 cm, Courtesy Museum of Modern Art, New York © François Morellet

Morellet focused on wiping any subjective or lyrical expression away from his art. Like his colleagues in the group, he experimented with the light, motion and form. Later he also built a 3D version of Random Distribution in 1963 Paris Biennale (Figure 16). In

doing so, he determines an aggression deriving from an optical disturbance caused by the “flickering balance of two colours.” (Morellet, 2009).

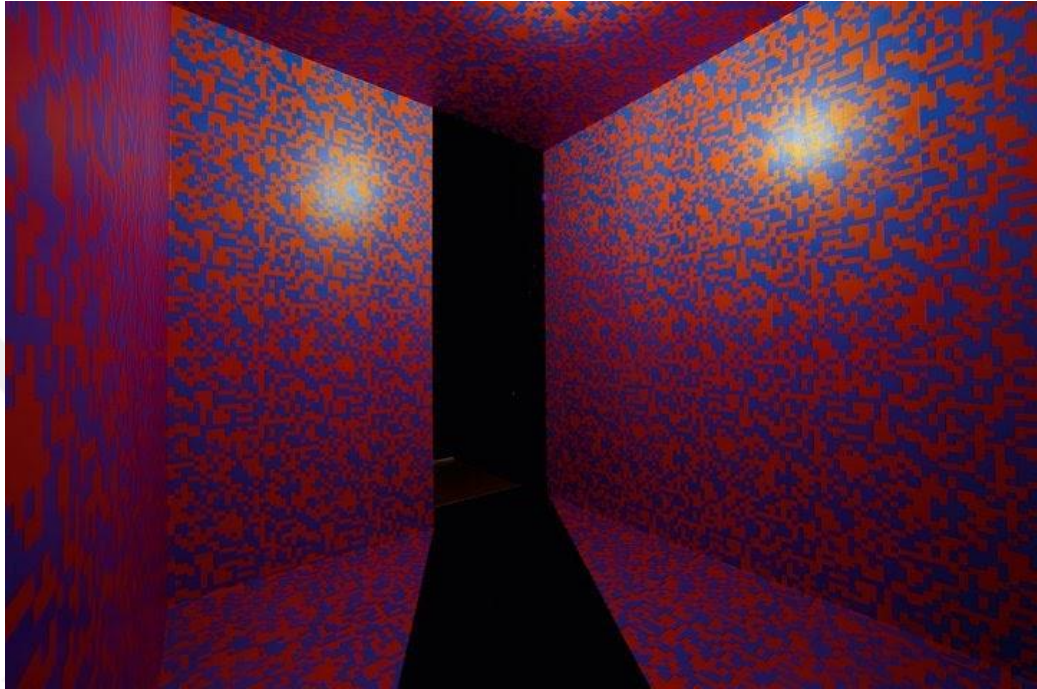


Figure 16. François Morellet, Random Distribution of 40,000 Squares using the Odd and Even Numbers of a Telephone Directory 1963, Paris Biennale

Another notion that was mutual with NT artists is that they championed the process, not the final work. In fact, for them there was no any finished artwork, they rather focused on the experimenting phase. Armin Medosch also particularly addresses this approach of NT in his PhD thesis: “The works to be shown eventually in an exhibition were preliminary results of an experimentation process, not finished artworks.” (2012), and he further discusses this condition from a different set of view in his last book *New Tendencies: Art at the Threshold of the Information Revolution (1961 - 1978)*: “New Tendencies artists saw their works not as artwork but as modes or prototypes. The lessons learned in making them could be transferred to an engagement with industry.

This was confirmed by correspondence between American author Douglas MacAgy and Matko Meštrović.” (2016). Below are some photographs of artworks and exhibitions from New Tendencies.

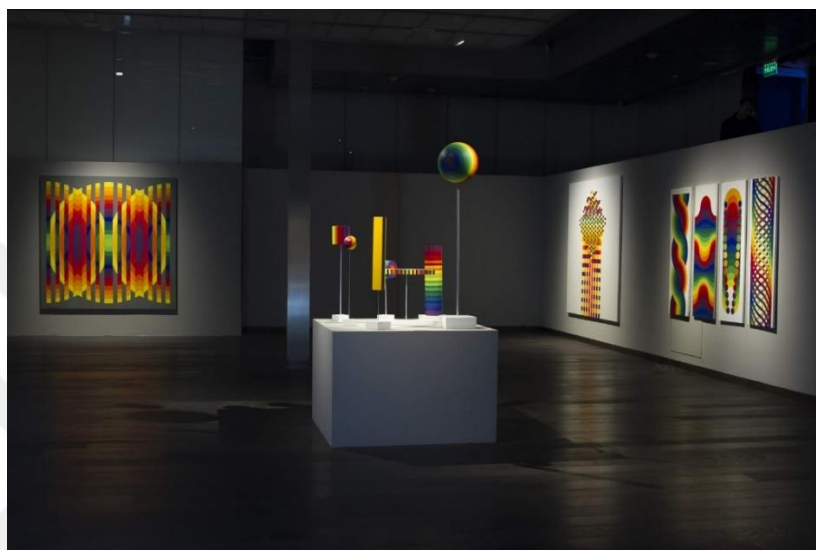


Figure 17. Julio Le Parc. Exhibition view.

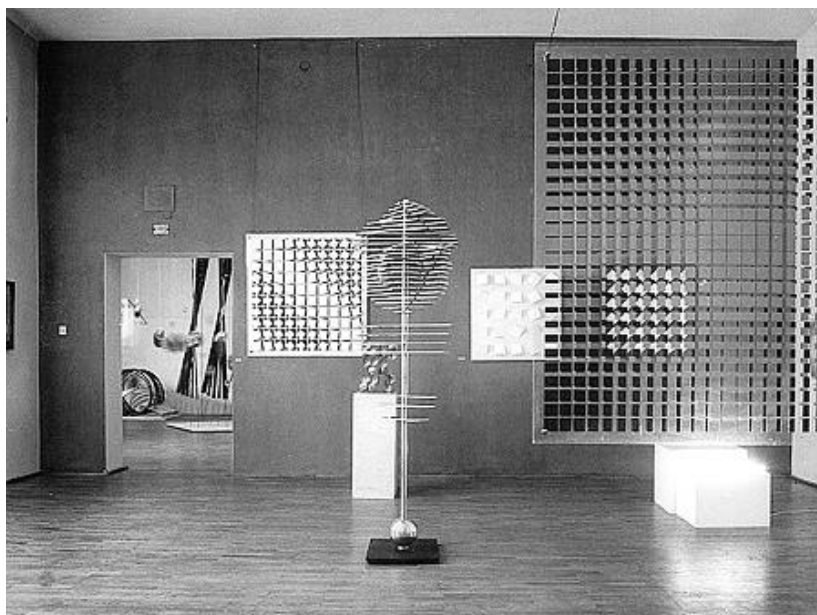


Figure 18. Tendencije 4. Nove tendencije 4, Muzej za umjetnost i obrt [Museum for arts and crafts], Zagreb, May 5- June 30, 1969, installation view



Figure 19. Works from the exhibition t5, Computers and visual research (Bonačić, Marquette, Huitic), BIT international, ZKM, Karlsruhe, 2008



Figure 20. Ivan Picelj. 1965

CHAPTER 3.

THE PROJECT: CLOCKS

3.1. Development Process

3.1.1. Introduction

During building this project, my artistic explorations are formed around conducting a visual research celebrating the process in the first place. This is mainly because (1) I was too much inspired by the way New Tendency movement put art into practice under the title of “art as visual research”. Another reason is (2) I was also so much into understanding how we exercise the act of meaning-making through visual signs. The latter had been the starting point of my journey. As a consequence, what I have created at the end of the whole process is actually a hybrid of how I approached these two main interests of mine. At the end, all theoretical and practical discovery I acquired regarding

the topics transformed itself into an imagery of a clock and a contemporary conceptualization of how we keep and tell time.

3.1.2. Entering The World of Sign Systems

The theoretical concepts which we put into use in order to study and to have a better understanding of visual communication, derive –to a great extent- from semiotics, the study of signs and sign systems (Crow, 2003). There are multiple ways one can communicate to the other, and language is the instrument to achieve such interactions. I have started my meaning-making research by looking at the relationship between typography and language, typography as the body” of the meaning that we create via text. In doing so, my first focus was on the field of *visual semiotics*.

Semiotics is a profound investigation of meaning that is produced through signs and models of symbolism. Its subdomain, visual semiotics analyses how signs communicate messages in visual ways. To give an example, the meaning behind behavioral patterns of a person can be a topic of semiotics in which social and cultural connotations are studied. In addition to this, the message that a huge billboard aims to transform is the subject of visual semiotics, as the sign that is carrying the meaning is composed of visual design elements. Semiotics is known to be founded by two pioneer scholars from

19th century: (1) Ferdinand de Saussure (1857-1913) and (2) Charles Sanders Peirce (1839-1914). They pursued their studies separate from each other. Both scholars contributed to the world of semiotics to a great extent, however, they had particular focuses in doing so. Saussure was considered to be the founder of modern linguistics, while Peirce was creating the field of pragmatism around the same period (Nöth, 1995).

I firstly got involved in structuralism and Saussurean theory concerning the formation of a sign. Robert Hugh Layton, a British Emeritus Professor of Anthropology, outlines the mission of structuralism and semiotics by giving a short description: “Structuralism and semiotics provide ways of studying human cognition and communication. They examine the way meaning is constructed and used in cultural traditions.” (2005). Unlike post-structuralist theories, structuralism designates a stable approach towards the study of semiotics. This stability, according to Saussure, is necessary if language “is the function as a medium for communication.” (Layton, 2005). That is to say, language is a systematic medium that evolves independent of the individuals. Layton clarifies this notion of independency by examining Jean Piaget’s writings in his book *Structuralism* (qtd. in Layton):

Saussure recognized that a language gradually changes. However, like Durkheim, he saw change as evolution in the system, rather than the result of innovations introduced by individuals. He argued that individual idiosyncrasies can have no meaning, because they are not part of the conventional system. Individuals use the system, but it exists independently of them.

In this independent system of linguistic communication, Saussure asserts that a visual sign is composed of two basic units: the signifier (visual form) and the signified (content) (De Saussure, 1916). Signifier can be exemplified by the shape of a lowercase

letter “i”, which is composed of a single vertical line and a dot above. The signified, on the other hand, is the information that that visual form (i) points out a certain sound which we produce while using verbal and textual communication. Starting from this, I became intrigued to this binary relationship between the signifier and the signified. On this wise, typology of the term sign became diversified into three categories which are named as *icon*, *index* and *symbol*, (1931) as advanced by Charles Sanders Peirce in 1860:

One very important triad is this: it has been found that there are three kinds of signs which are all indispensable in all reasoning; the first is the diagrammatic sign or icon, which exhibits a similarity or analogy to the subject of discourse; the second is the index, which like a pronoun demonstrative or relative, forces the attention to the particular object intended without describing it; the third [or symbol] is the general name or description which signifies its object by means of an association of ideas or habitual connection between the name and the character signified.

Taking Peirce’s definition as my reference point, I would like to illustrate these three signs that denote their objects in three particular ways.



Figure 21. Three different visual signs from Microsoft’s emoji set.

The first of Peirce's triadic model is *icon*, which is a diagrammatic sign whose signifier displays a visual resemblance to its signified, the thing being addressed. The second is *index* which directs the mind to a specific matter without straightforwardly illustrating it. The third is *symbol* that one cannot speak of any direct or indirect resemblance between the signifier and the signified. To derive any meaning out of a symbol, there must be a culturally acknowledged or learned association between the signifier and the signified. (Peirce, 1931). To set an example for each, one can look at Figure 21. The owl image in Microsoft's emoji set is a good example to iconic signs, since it exactly looks like the thing it depicts. The skull emoji can be considered as an indexical sign, because it demonstrates a clue of what's being depicted. It signifies "death" or "a state of danger" rather than the physical skull itself. As a dead body decays in time and turns into a skeleton, the skull image becomes a reminiscent of this physical fact of death. This is how indexical signs work, the signifier relates to the signified in an indirect way, by providing a visual evidence of it. Finally, the rightmost emoji of STOP sign stands for the symbolic sign. It is considered to be a symbol because there is no physical connection between the signifier that is the red octagon shape and the signified that is the culturally (even universally for this one) approved information of a visual warning for drivers to make a full stop in traffic. If one did not learn or does not have the knowledge of what this red octagon points out, s/he cannot extract the correct meaning out of it. Alphabetical characters are also excellent examples to symbolic signs since letters and numbers are constructed signs that do not enclose any inherent visual similarity or analogy within the thing they represent.

However, the distinction among these three kinds of signs is not always that sharp. For instance, an hourglass emoji can both represent the physical object itself, or can point out a particular amount of time that is being passed. Also for written language, reflective words such as animal voices etc. can be thought as iconic rather than symbolic, since it tries to copy a sound from nature.

From the second trichotomy of Peirce, I have specifically looked at the symbolic signs, since typographic elements that compose any kind of text are arbitrarily formed symbols. In other words, the form of a letter does not pose any physical resemblance with the content it points out. As Saussure (1983, 1974) argues, a linguistic sign is a symbol that does not carry a connection between an element and a name. It is rather a structure that links a concept to a sound sequence. The sequence mentioned here is, in fact, not composed of sound since sound is a physical entity. The sound sequence is rather the audience's mental impression of a sound. (as cited in Chandler 1994)

Regarding the case for textual signs, Arthur Asa Berger argues that “The relationship between the signifier and signified—and this is crucial—is arbitrary, unmotivated, unnatural. There is no logical connection between a word and a concept or a signifier and signified, a point that makes finding meaning in texts interesting and problematic.” (2004). That is to say, symbols can stand for any meaning that one attributes. It is all up to people who acknowledges a symbol as a representamen of a particular information and determines to look at it in that definite direction.

Humpty Dumpty, one of the most provocative characters in Lewis Carroll's novel *Through the Looking-Glass*, has a well-addressed reference to the subject of

arbitrariness in language systems, which inspired my way of looking at letters in a funny and a literary way. His dialogue with Alice is actually based on a linguistic discourse. At the point when Alice objects to the meaning of the word glory that is suggested by Humpty Dumpty, the book follows as, “‘When I use a word,’ Humpty Dumpty said, in rather a scornful tone, ‘it means just what I choose it to mean — neither more nor less.’” (Carroll, 1917) Speaking of arbitrary visual signs, I refer to the break-up between signifier and signified. To give an example, each letter of Latin alphabet is a symbol, the graphic forms of these letters do not physically resemble to the sound they refer to. Thus, the formation of a symbol is an arbitrary process. This is also a term called “duality”, which David Crow (2003) illustrates in his book *Visible Signs* as:

In different languages the collection of phonemes which make up the signifier is different. In English speaking countries the object you are now reading from is called the ‘book’ whereas in French it is ‘livre’, in Spanish ‘libro’ and in German it would be ‘buch’. What this shows us is that the relationship between the signifier ‘book’ and the thing signified is a completely arbitrary one. Neither the sounds nor their written form bears any relation to the thing itself. With few exceptions any similarity is accidental. Just as the letter ‘b’ bears no relation to the sound we associate with it then also the word used to describe a book bears no relation to the object it represents. Just as there is nothing book-like in the word ‘book’, the word ‘dog’ does not bite, the word ‘gun’ cannot kill you and the word ‘pipe’ does not resemble the object used to smoke tobacco. This divorce between meaning and form is called ‘duality’.

Thus, (1) *arbitrariness* was one of the three topics I wanted to delve into in the world of sign systems. The others are (2) *context dependency of a sign* as studied in pragmatics and (3) *infinite signification process* as poststructuralist theory puts into the linguistic discourse.

3.1.2.1. Context Dependency

Meaning one makes can be easily affected by the immediate context one resides in and that is how the term pragmatics was coined in the first place. The term dates back to the Latin *pragmaticus*, derived from the Greek *πραγματικός* (*pragmatikos*), which means "fit for action" (Liddell, Scott, Jones, & McKenzie, 1996). The word became a field of linguistic study in the late 19th century by the contributions of Charles S. Peirce and William James. However it did not get much attention by other linguistics scholars until 1970s (Jucker, 2012). Considering pragmatics is the study of how context affects meaning, it automatically relates to the use of signs but in a dependent way.

Pragmatics mainly distinguishes two types of contextuality: physical context and linguistic context. Physical context simply refers to the location of a sign, in which communication is taking place. It is the context where the physical surrounding directly affects the meaning that a sign (word) is pointing out. For instance:

- I read this book. (followed by pointing)
- Come over here. (place reference)

Linguistic context, on the other hand, matters when what has been said before in a conversation directly contributes to the meaning. To illustrate:

- Are you aware of what you've just said?
(referring to the thing that has been said before)

Here I observe a strong similarity between linguistic context and one of John Berger's prevailing remarks (Figure 22) that he makes in his 1972 BBC television series and book *Ways of Seeing*:



Figure 22. John Berger. *Ways Of Seeing*, BBC Television Series, Episode 1. 1972

Just like words, meaning of images can also be altered by the positioning of them inside a sequence. Berger experiments his point on the meaning of image by comparing two different sequences. The first image of both sequences is Francis Goya's famous painting *The Third of May 1808* (*El tres de mayo de 1808 en Madrid*). Yet, he changes the later images that come after the painting. In the first sequence, there comes a moving image demonstrating five white women with same costumes dancing arm in arm in a festive setting (Figure 23). However in the second sequence, the moving image coming

after the painting depicts black men standing side by side and being executed by soldiers (Figure 24).



Figure 23. Sequence 1. John Berger. Ways Of Seeing, BBC Television Series, Episode 1. 1972



Figure 24. Sequence 2. John Berger. Ways Of Seeing, BBC Television Series, Episode 1. 1972

As a result of this experiment, Berger discusses that “Each time the impact of Goya is modified.” (1972). That is to say, the meaning one grasps through Goya is affected by where in the sequence the painting is positioned. Thus, one can tell that the meaning of

the sign (Goya's painting) becomes context-dependent to the observer due to its location.

3.1.2.2. Infinite Signification

I looked at the relationship between the signifier and the signified from the points of arbitrariness and context-dependency in the previous subchapters. The last stage I delve into in the world of signs systems is how poststructuralist thinking approaches sign and the meaning making process.

Post-structuralism introduces a critical attitude that appeared during the 70s which has deposed structuralism as the preeminent trend in language and textual theory.

Poststructuralist thinking asserts that the signifier (the form of a sign) does not indicate a certain signified (the content of a sign), but generates other signifiers instead (Guillemette & Cosette, 2006). Thus, what this perspective tells us is that the conception of an explicit link between signifier and signified can no longer be a case, instead, we have infinite fluctuations in meaning transmitted from one signifier to another (Derrida, 1978). It is Jean Jacques Derrida who suggests that there cannot exist a single signified or a signifier. What we are doing while making meaning via signs is constantly revealing an infinite chain of associations among signifiers (Guillemette & Cosette, 2006). This idea of infinity has been the primary inspiration point of my project. While I was

debating how to relate this thinking into a physical medium, I came up with the idea of building an *infinity cube*.

3.1.3. In Search For a Meaning-Making Agency: Infinity Cube



Figure 25. Infinity cube as mini fidget toy.

Figure 25 demonstrates the infinity cube, which is an origamic structure being used as fidget toys, image or photo albums today. It is a dynamic grid of cubes that is formed by the joining of eight equal-sized-cube. It can be perpendicularly folded in every direction through its hinges and change shape without breaking into pieces. It can also easily be built out of paper or any other solid material.

The reason why infinity happened to be a metaphor for this simple cubical structure is because of its infinitely foldable mechanism. Likewise, my motivation of experimenting with this particular toy is predicated on its ability to recreate different versions of itself in a constant manner. I thought this feature of infinity cube could be used as a metaphor for two particular subjects I researched regarding how visual signs embody meaning. One is the context dependency of a sign, where a symbol can have divergent meanings in differing contexts. Like Berger's experiment I mentioned earlier, I drew an analogy and considered the cube as a dynamic symbol. When it changes shape (used in another context), it becomes another meaning but the cube itself is the same, only the roles it play are different. This is how I established a correlation between infinity cube and the context-dependent sign, and then initiated my first project idea.



Figure 26. Wood block I used for building infinity cubes.

While building my first infinity cube, I started playing with the way 8 small cubes are bonded together. I used 12x12x12 mm wood blocks (Figure 26). After spending some

time playing, I slightly changed the way they connect, and ended up with another cube which can be folded in exactly the same way as the original infinity cube but facilitates an additional standing, too. It can open up like a self-standing chain and also act like a module (Figure 27). The picture of the one I built and a few different standings of it are shown in Figure 28:

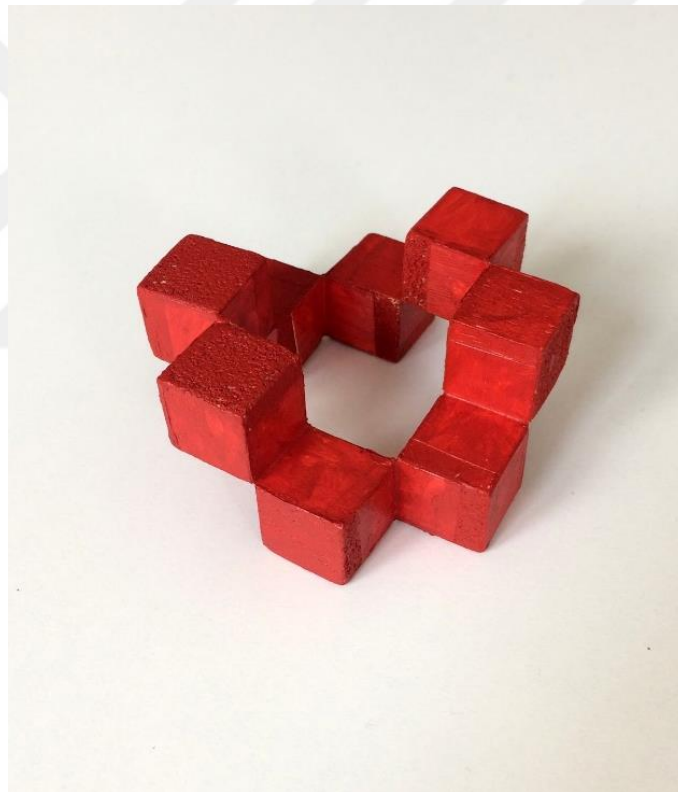


Figure 27. First infinity cube I built.

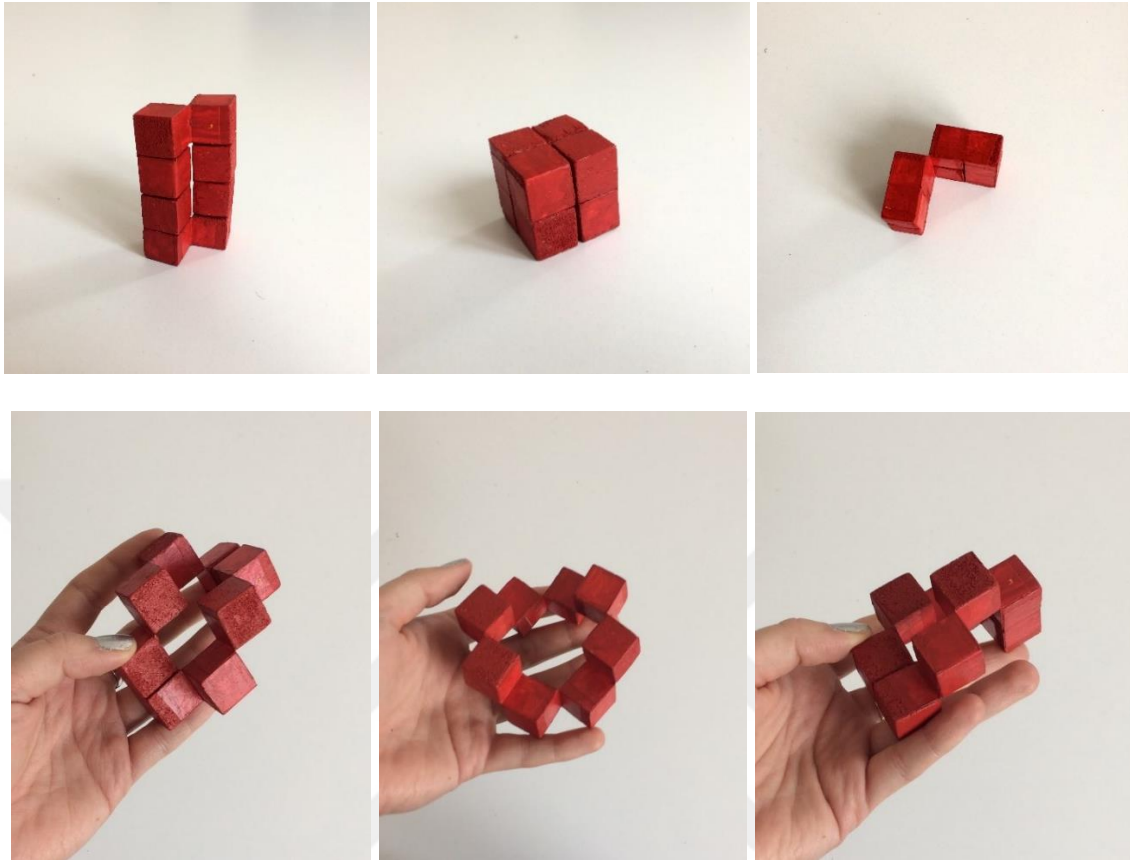


Figure 28. Various standings of the cube.

To explore many faces of a single cube, like the many meanings one sign can have, I illustrated several standings of one infinity cube by creating orthographic projection drawings of them (Figure 29).

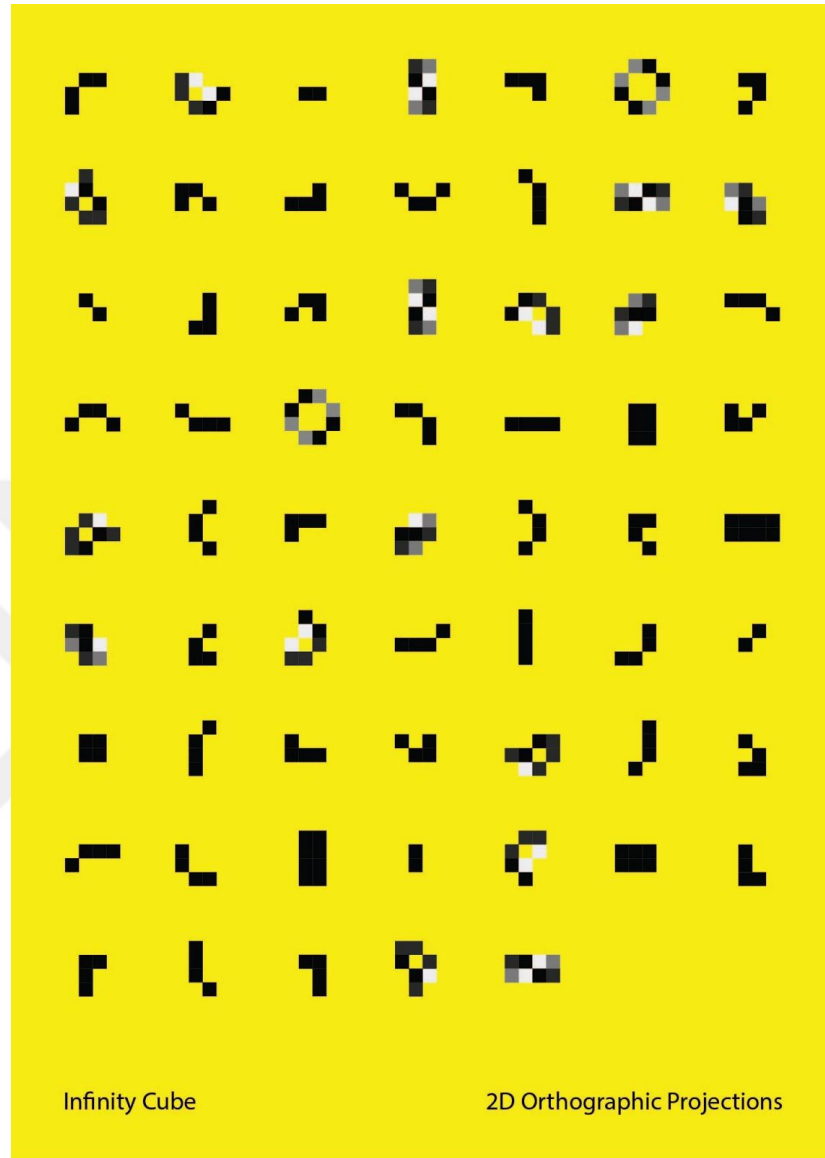


Figure 29. Sena Çelebi. 2D orthographic projections of an infinity cube.

The analogy I established between context-dependent sign and infinity cube initiated my first project idea which was an interactive installation called *Chainstable*.

3.1.4. Chainstable

I am for richness of meaning rather than the clarity of meaning; for the implicit function as well as the explicit function.

Robert Venturi

Chainstable is a participatory triptych installation of programmed narratives and it discovers the instable nature of words within contexts. For this project, I aimed to create a corridor of a dynamic narrative inside the gallery space, where combinations of words in the narrative can be changed by the audience. This is where I became interested in *programmed art* and *art as visual research*. The primary source of inspiration for Chainstable came from Karl Gerstner's influential book *Designing Programmes* (*Programme entwerfen*) which was first published in 1964 when computer and computer art started to be highly popular among artists, scientists and researchers. Karl Gerstner is a graphic designer, typographer, advertiser, and artist who was one of the key figures in Swiss graphic design. And the book reflects the theoretical foundations of Gerstner's considerations based on his conceptual approach towards design as a whole. He basically applies the idea of programme into several topics of art and design such as morphology, grid, photography, movement, computer graphics, music, literature and so on. Among all, I specifically paid attention to the section, programme as literature (Figure 30) since my semiotic research was focusing on textual signs.

a	b	c
Give me	a few words	for a woman
d	e	f
to sing	a truth	that allows us
g	h	i
before night falls	without sorrow	to build a house

Figure 30. Programme as Literature, from the book *Designing Programmes* by Karl Gerstner. Lars Müller Publishers. 1968. p. 24.

In this section Gerstner exemplifies a work by his partner Markus Kutter who is a writer and editor. Together they established the agency Gerstner+Kutter which then became GGK with the addition of architect Paul Gredinger. Kutter's work in *Figure 30* refers back to his collaboration with Luciano Berio, an Italian composer who is known for his experimental works (in particular his 1968 composition *Sinfonia* and his series of virtuosic solo pieces titled *Sequenza*) and also for his pioneering work in electronic music. For Berio's piece *Sequenza III* for woman's voice, Kutter wrote lyrics that was aimed to be "modular". Berio explains (1965) his intention of modularity in text by suggesting:

In Sequenza III I tried to assimilate many aspects of everyday vocal life, including trivial ones, without losing intermediate levels or indeed normal singing. In order to control such a wide range of vocal behaviour, I felt I had to break up the text in an apparently devastating way, so as to be able to recuperate fragments from it on different expressive planes, and to reshape them into units that were not discursive but musical. The text had to be homogeneous, in order to lend itself to a project that consisted essentially of exorcising the excessive connotations and composing them into musical units. This is the “modular” text written by Markus Kutter for Sequenza III.

What Kutter tried to achieve by creating the grid of words (lyrics) for Berio’s musical piece was a modular narrative in which every sequence or combination of the words written in the boxes from a to i would mean something. To illustrate some of the combinations, I picked random sequences from the grid and wrote them down row by row:

Sequence 1

a-e-i-g-h-d-c-f-b

Give me
a truth
to build a house
before night falls
without sorrow
to sing
for a woman
that allows us
a few words

Sequence 2

d-b-f-e-i-g-h-a-c

to sing
a few words
that allows us
a truth
to build a house
before night falls
without sorrow
Give me
for a woman

Sequence 3

f-h-c-d-b-i-e-g-a

that allows us
without sorrow
for a woman
to sing
a few words
to build a house
a truth
before night falls
Give me

Figure 31. 3 different sequences based on Kutter’s grid of words.

As this modular literature piece is created with a truly poetic and subjective approach, one cannot determine a certain meaning but can speak of an open experience of meaning

making. I was so much inspired by this literary way of programming words and directly applied it to my scenario in order to come up with a dynamic narrative. To achieve what I have in mind, I firstly created three different 4x4 square grids and determined particular and relating themes for each one. Then, I started to write down the words and fill the squares following the same principle with Gerstner's exemplifying of Markus Kutter's modular lyrics for Sequenza III. Figure 33, 34 and 35 demonstrate the modular narratives I have rapidly written in order to experiment with the installation setting as soon as possible. The grids had three different themes as red, yellow and blue. For each grid, I have started with a word that I find relating to the theme and completed the rest by the agency of free association among signifiers and my own experience of meanings.

a phoenix	at present	to warn	for a protanopic
without a flame	inside a war	illustrate	that burns
push the button	have fever	peevishly	fiery cheeks
as a ruby	it is forbidden	before noon	to melt

Figure 32. Sena Çelebi. A grid of words I created based on the theme Red.

blow gently	without light	put an artist	in a prisoner
a window	a field	wheat breeze	to grow half-deaf
climb the stairs	to watch a sky	rising warmth	with gradient
for the night	with us	becoming mad	is a few letters

Figure 33. Sena Çelebi. A grid of words I created based on the theme Yellow.

fly high	that walks	to fall	after dawn
for a traveller	a sky	it is most hard	with cold
to keep safe	a bevy of amazon parrots	floating	mnemonics of moment
with blinking shapes	aloofly	to fade	illnated

Figure 34. Sena Çelebi. A grid of words I created based on the theme Blue.

After that, I passed onto the next step of combining these narratives with three identical infinity cubes I built, one cube for each narrative. First of all, I started to play with the way 2D projection drawings of an infinity cube (Figure 35) fit in the grids. I placed the drawings that I randomly picked over the words as a front layer. What I aimed to create was a changeable narrative, and by this way I wanted to express a richness of meaning that is captured inside signs. Context dependency can be considered as the feature of a word that makes it rich, since the meaning of a word can be easily altered according to what other words or meanings it is in relation. So in Chainstable, I designed the infinity cube as the context. Chainstable is aimed to be a setting in which words (signs) are stable but the context (cube) is mobile. When the cube changes shape, the context changes automatically due to combinations of words are altered.

fly high		to fall	after dawn
for a traveller			with cold
	a bevy of amazon parrots		mnemonics of moment
		to fade	illnated

fly high	that walks		
for a traveller			
to keep safe			mnemonics of moment
with blinking shapes	aloofly	to fade	illnated

fly high			after dawn
for a traveller			with cold
to keep safe			mnemonics of moment
with blinking shapes			illnated

blow gently	without light		in a prisoner
a window		wheat breeze	to grow half-deaf
climb the stairs		rising warmth	with gradient
for the night		becoming mad	is a few letters

blow gently	without light	put an artist	in a prisoner
	a field		to grow half-deaf
climb the stairs			with gradient
for the night	with us	becoming mad	is a few letters

blow gently	without light		
a window		wheat breeze	to grow half-deaf
climb the stairs		rising warmth	with gradient
for the night	with us	becoming mad	is a few letters

a phoenix			for a protanopic
	inside a war	illustrate	
	have fever	peevisly	
as a ruby			to melt

a phoenix		to warn	for a protanopic
without a flame		illustrate	that burns
push the button		peevisly	fiery cheeks
as a ruby		before noon	to melt

a phoenix	at present	to warn	for a protanopic
without a flame		illustrate	that burns
push the button	have fever		fiery cheeks
as a ruby	it is forbidden	before noon	to melt

Figure 35. Sena Çelebi. Infinity cube projections on the grids.

For the installation setup, first I printed the grids on transparent paper. The reason was that I wanted the words projected on a bigger surface by use of a light source. In a similar manner, I built new infinity cubes that were made of transparent plexiglass boxes (Figure 36). I wanted the cubes to be light transmitting so that the themes red, yellow and blue could be emphasized also visually and could enrich the experience of the audience, giving them a sense of space.

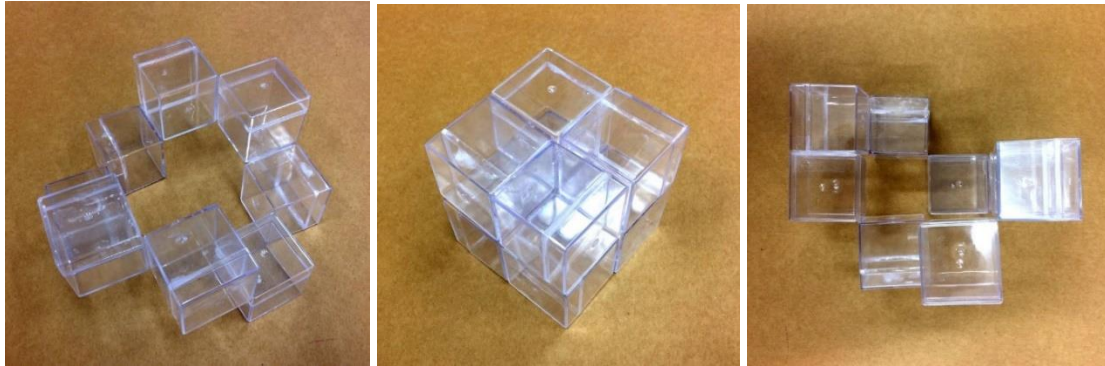


Figure 36. Sena Çelebi. Infinity cubes made of plexiglass.

I took 3 black pedestals that were 100 cm high and placed LED spotlight sources inside each, directing the light from the ground straight towards the ceiling. Then I enclosed the openings on top of the pedestals with glass panels and applied color as the second

layer. Third layer was the grid of words I printed on acetate, and the last layer was putting the cubes on top of these illuminated columns (Figures 37, 38, 39).

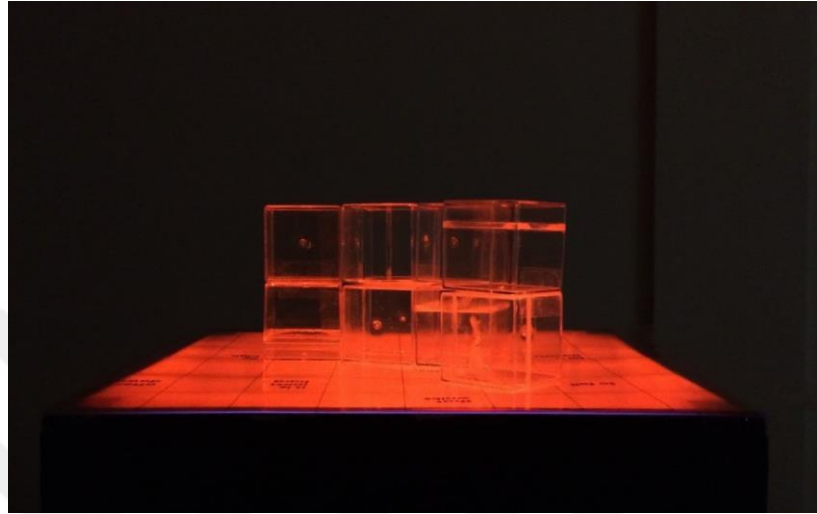


Figure 37. Sena Çelebi. Red column

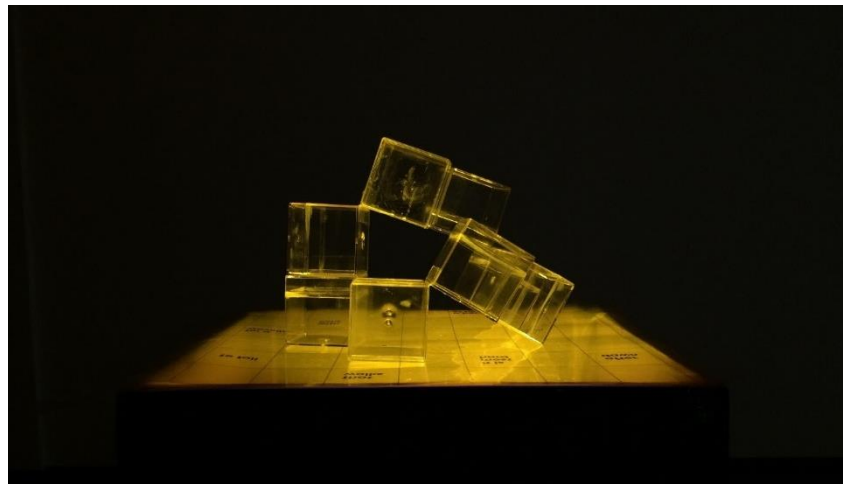


Figure 38. Sena Çelebi. Yellow column

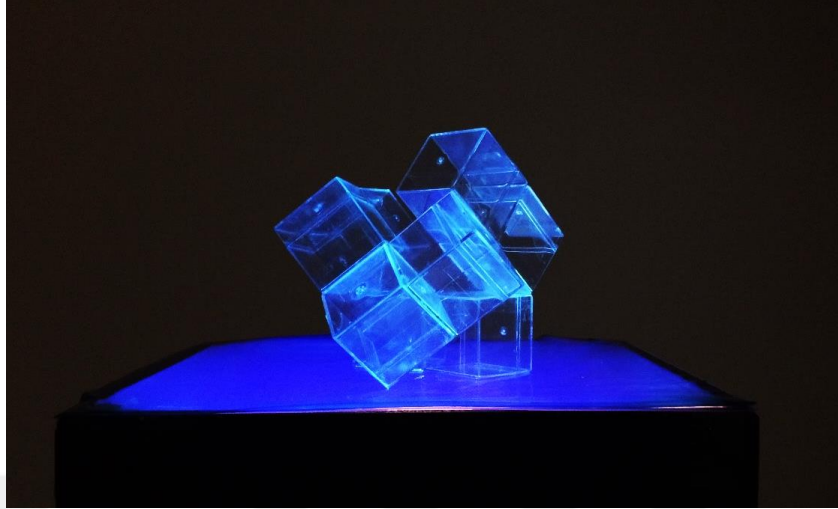


Figure 39. Sena Çelebi. Blue column

After setting everything up, I had a (1) playground and a (2) real-time 2D projection of this playground (Figure 40), that make the participatory experience of this installation composed of two steps.



Figure 40. Sena Celebi. View from the installation setting

First step is becoming the meaning maker by playing with the cubes and changing the way they stand, which composes a different set of words and a different meaning eventually. The second step is watching the screen on the ceiling and becoming the

observer of these changing meanings (narrations) that is created by others. This is to emphasize we are either the maker of the meaning or the observer of the meaning that is made by others. We write things, compose songs, paint on canvases, produce agencies of meaning and we also read, listen to songs, watch movies or stare at images, consume these agencies of meaning.



Figure 41. Sena Celebi. View from the installation setting

I set the installation with and without the modular narratives to observe a more abstracted version of this live triptych installation, a version that cubes become the only meaning making agency, demonstrating a togetherness of the same form with changing meanings. After spending some time playing and watching the audience participate in the process, I wanted to focus on and explore another feature of the infinity cube, and removed this in-progress installation from the exhibition hall.



Figure 42. Sena Çelebi. View from the installation setting



Figure 43. Sena Çelebi. View from the installation setting

In the former project setting Chainstable, I aimed to explore the context-dependency of signs and togetherness of many faces of a sign. Then, I chose to keep on studying the infinity cube from a different perspective. I built more identical cubes and juxtaposed them in different ways. What this act of juxtaposition showed me was that the cube works as a three dimensional module and it acts locally. This locality here means that when one of the cubes in a complex arrangement of multiple cubes changes shape, the standing of the others that stand next to it will be affected and therefore repositioned in a different way. Thus, it would not be wrong to suggest that a network of infinity cube grows locally. Every new member that is added to the network will position or arrange itself in relation to the others.

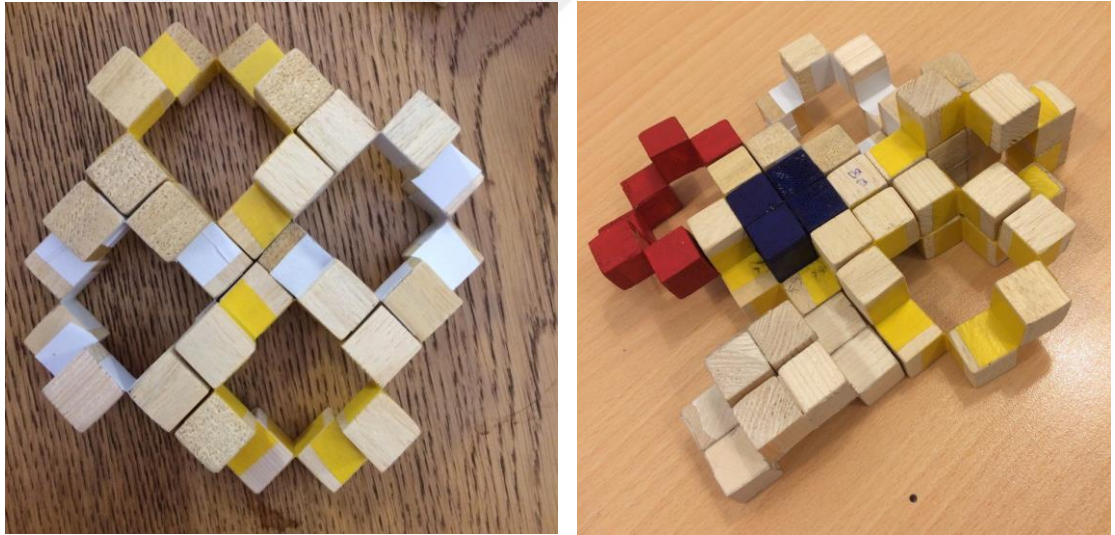


Figure 44. Sena Çelebi. Multiple infinity cube combinations

Figure 45 illustrates three different arrangements of a network from the top view. Each color represents a separate cube with a different standing, and in each of them, all the cubes stand same except the white one in the middle. When the white cube changes

shape and transforms into another form, the others get automatically repositioned.

Another way of looking is, when one starts to build a set of infinity cubes, the standing and positioning of the former one affects the latter addition, which creates a shape & location-dependent chain.



Figure 45. Sena Çelebi. Different arrangements of a group of infinity cubes

This locality and possibilities of action have something quite similar to do with the idea of relativity, as each unit of the system acts relatively to the other units. This also overlaps with the idea of context-dependency of visual signs, where a sign can act differently according to the context it relates.

The whole process of researching and discovering with the infinity cube in a semiotic manner led me to the last and actual stage of the project. I connected the idea of relativity, that I arrived at in this subchapter, with our relative experience of time, and asked the “What if?” question which formulated the framework of this thesis.

3.1.5. What If?

Our conception of time depends on the way we measure it.

William J.H. Andrewes

In his article *Pragmatics in the history of linguistic thought*, professor Andreas H. Jucker lists up four crucial paradigm shifts in linguistics caused by the emergence of pragmatics as a subdiscipline. The first one he argues is as follows: “Speakers do not just rely on one homogeneous system of language use. They adopt their use of language to the changing situations in which they find themselves in the course of their daily lives.” (2012). That is to say, pragmatics brings a heterogeneity to the study of linguistics, because it acknowledges context and changing situations in communication as essential building blocks of meaning making. Therefore, linguistics became more interested in the variability of language. Professor Jucker clarifies this circumstance in another paradigm shift he lists in the article: “From homogeneity to heterogeneity. Language is no longer seen as a homogeneous but as a dynamic system subject to spatial, social, and diachronic variation.” (2012). Thus, as he again emphasizes, with the arrival of pragmatics in linguistic studies, language evolved into a “heterogeneous system of patterned variability.” (Locher and Jucker, 2017).

Here I detect a powerful resemblance between the two concepts of heterogeneity, one in language and the other in time. For centuries language and time are considered to be

homogeneous mediums in order to establish a standardized common ground within communication. For the concept of time, the agent of this standardization is the atomic clock. According to atomic clock, a day is divided into hours, minutes, seconds and standard frequencies. We conform to the way how this device measures and tells time so that we can regulate our daily agendas and get things done without a reciprocal confusion. Therefore in this homogeneous setting, a minute or an hour identify the same amount of time for everyone in the world. But, is it really that homogeneous when we think about our individual experiences of time? This is the question I wanted to speculate on while creating my thesis project, by making use of Bergson's theory of heterogeneity in time which is discussed earlier in chapter 2.3.2. Later, I will also employ the idea of locality that I discovered with the infinity cubes in the previous chapter, and relate it to the notion of *butterfly effect*, as framed in chaos theory.

For the project, I got my conceptual reference from the regular clock tower figure. The reason why I particularly focused on a clock tower rather than other forms of clock is due to its feature of being an urban device that is able to address hundreds of people who move in relation to each other, for instance, in a busy city square. That is to say, traditional clock towers display the passing of time as the same for every person in a crowd looking at it, in an absolute homogeneous way. However, when I considered our relative and personal experiences of time, our unique beings in duration, I started to speculate on the concept of an heterogeneous clock. In doing so, beside our individual presence in time, our individual presence in space was added to the project's framework as well by mentioning the concept of locality. Because in urban territories, our physical movement get also affected by the others we stand next to, and this creates an unstable

chain of actions. Thus, all the components of this chain behaves locally in a way, and this chain constantly keeps changing shape as the city (inhabitants) moves.

Eventually, I combined the two sentiments that I landed, (1) our presence in duration and (2) our presence in space, and then asked the “What if?” question which built the path towards the idea of my project, Clocks:

What if there exists a clock tower that keeps and tells time through a live map that gathers and visualizes the individual mobility of a city's occupants?

3.2. Conceptualization of a Clock

My thesis project evolved around the act of re-imagining the clock tower and the concept of time. In a bigger scale, I wanted to explore the possibility of cities having their own distinct flow of time, that can only be read through their inhabitants' movement, rather than the scientific clock that standardizes the passing of time for each of us.

In my concept of the urban heterogeneous clock, the movement of the crowd in a city square becomes the catalyst of timekeeping and time telling activities. In its simplest form, what I had in mind as the heterogeneous clock can be considered as an abstracted real-time data visualization, or an intensity map. I suggest the idea of an urban sculpture in the form of a colossal digital screen that could import the real-time urban traffic data of a city territory, by the agency of public video monitoring systems. After importing the

data, this programmed sculpture could then transform each moving object in the territory such as humans, animals and vehicles into black pixels by using computer vision algorithms, and display them all together through the screen. Thus, random movements of the individuals could form a constantly changing image, because as they move in the actual territory, the pixels that represent them on the screen will move accordingly. This way I wanted to approach time in a bit of a poetic and individualistic way. This clock could work like a mirror of collective motion and this is how I framed the heterogeneity. It is a shared ground of unique individuals who live their own durations in different rhythms, move in different speed, maybe do not move at all but experience the passing of time only through their consciousness, detaching it from space.

To illustrate the process, I picked random stock photographs that demonstrate a crowd of people moving on a pedestrian crosswalk. (Figure 46).



Figure 46. Aerial photographs of a crowd on pedestrian crosswalk

The photos are aerial, taken from top with a drone and depict two unique moments of a number of people moving inside the same platform, or, frame. Considering the two

images as a sequence of action, I reduced them into abstract diagrams which can be seen in Figure 47.

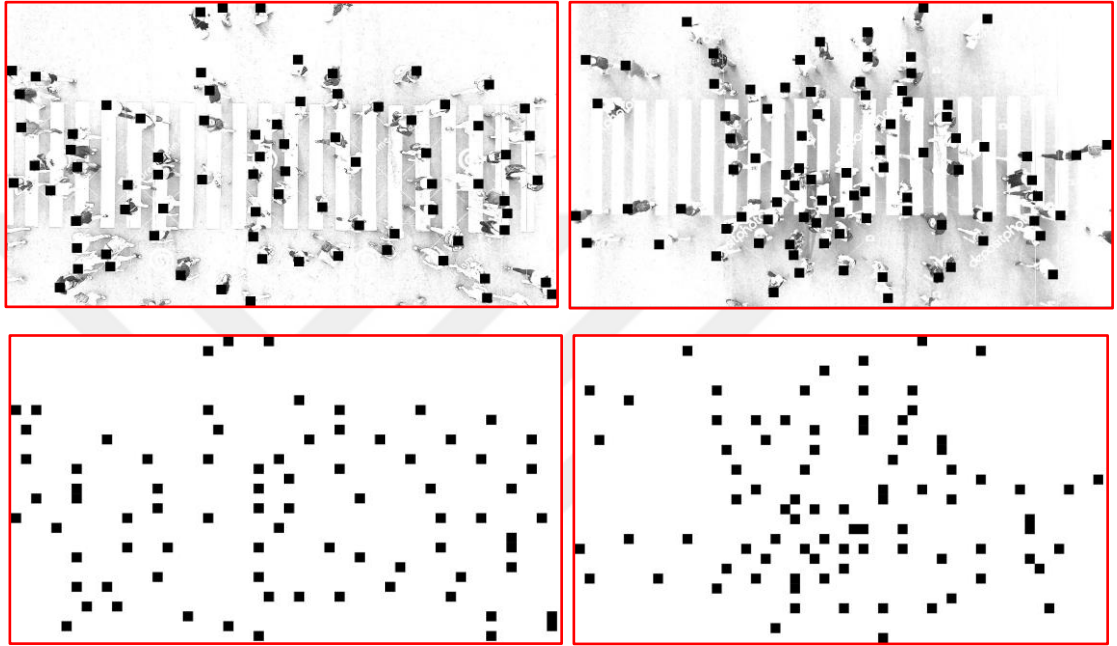


Figure 47. Sena Çelebi. Diagrams abstracted from aerial photographs

The sequence of images that depict a chain of human motion in Figure 47 has a thing in common with the chain of infinity cubes which was mentioned previously in Chapter 3.1.4. Both move locally. The movement, or, positioning of the individuals in a crowd depend on each other's actions, just like the group of infinity cubes forming a larger web. When one moves, a chain of reaction occurs inevitably by altering one's close surrounding, and a small change has the power to trigger others' close surroundings and so on, like in the butterfly effect.

Chaos theory, as suggested in Cambridge Dictionary, "relies on the idea of the "butterfly effect", that even slight imbalances in starting conditions lead to huge final variations in

outcome because of the fundamental instability of the system.” (“Chaos theory,” n.d.). So I thought this “fundamental instability of the system” is genuinely valid for the nature of a city. Cities can be considered as systems in which their occupants are constantly instable. And each of these occupants have their own rhythm and pace, which makes the system a heterogeneous one. So I thought a visual map of this heterogeneous rhythm could stand as a metaphor for a clock that belongs to a certain territory.

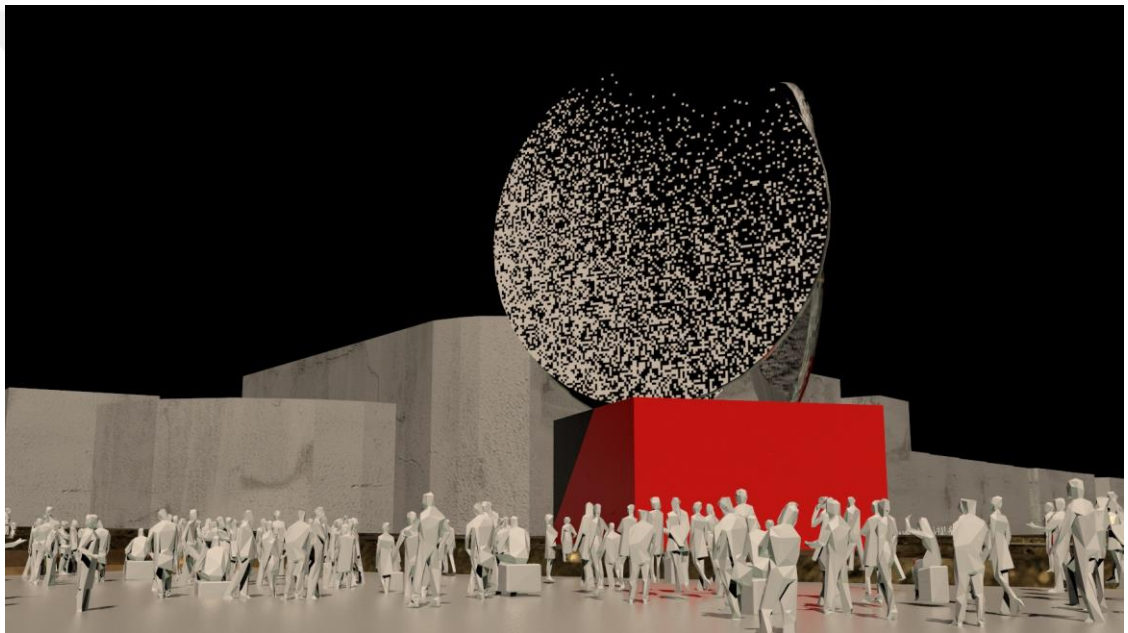


Figure 48. Sena Çelebi. A 3D rendering of Monitor

Figure 48 is a digital 3D sketch I constructed in order to manifest the idea of this clock. I created the image by importing the 3D map of Kızılay area in Ankara, and where I located the sculpture is right in the middle of Kızılay Square. I didn't really study the design of this giant, because I aimed to keep it only for representative purposes. Building such a sculpture in real life requires plenty of expertises, high tech monitoring devices and official permissions for sure. However, it could be achieved in smaller

scales, building it inside a campus, a public building, or in a room. There are motion tracking products to achieve this kind of a real time image that work with computer vision algorithms. One of them is called Density, a software that was developed in New York, with a purpose to count people in a crowd in an anonymous way, so that how busy a cafe or any other public space could be checked in real time.

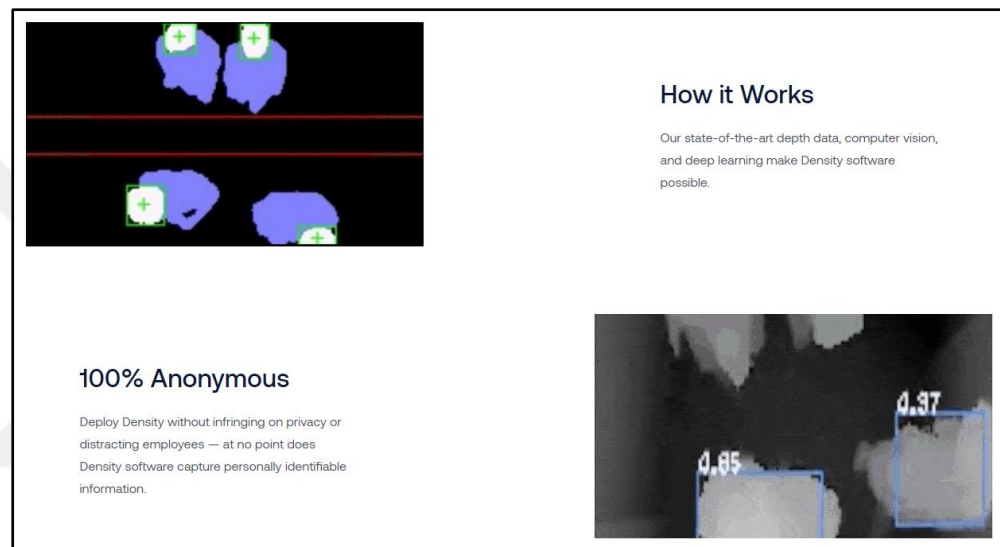


Figure 49. Images from Density's website.

Developers of Density had a pragmatic approach towards the use of cities. They simply “believe that New York City would design itself differently if only it knew how it was used.” and “all cities would design themselves differently.” (Density, 2019). Their common goal was to measure the performance of spaces so that more efficiently operating cities can be built. Thus, their conjecture and mine intersect in a way that both move through the idea of cities having their own unique dynamics. Density is developed for individuals who want to check out the real time human traffic of a certain public space, so people who use this service are not necessarily involved in that traffic.

Differently from their purpose on building the software, I imagined “exhibiting” the outdoors version of this visualization to the audience who already participates in it.

To transform such a data into a public sculpture surely raises other questions other than treating it only as a clock. I will discuss those questions in the conclusion as possible topics for further study and the continuation of my process.

From this point on, I am going to continue with how this conceptualization and speculation on a giant heterogeneous clock has become the main inspiration point of my thesis artwork. As my thesis project, I have created a triptych of an abstract narrative which I call Clocks. The narrative I formed is a completely subjective one. It is not based on an actual data of any human motion but a series of constructed images that is inspired by all my research process.

In the next chapter, I am going to bring up a brief history and definition of triptych as an artistic medium, and mention why I ended up making use of it.

3.3. Triptych as a Three-Act Dramatic Structure

The etymological root of the word triptych derives from the Greek ‘triptykhos’, which means ‘having three folds/layers’. However, it is commonly described as a specific type of art composed of three sections. As Cambridge Dictionary puts it, triptych is “a piece of art made of three paintings connected to each other in a way that allows the two outer ones to fold in towards the larger central one.” (“Triptych,” n.d.). It is simply a visual

composition that is painted on three panels. Similarly, a diptych is composed of two panels, a quadtych has four, and a polyptych contains five or more.

What makes triptych known as an art medium dates back to the early Christian art practice that was emerged in the Middle Ages. Triptych art was mostly used as altarpieces in churches with an objective to communicate religious beliefs. These altarpieces generally have one larger panel in the middle, and two smaller panels that can be folded straight in the middle, like a double-wing door (Figure 50). When it is opened up, one can see the inner surfaces of the panels are covered with paintings.



Figure 50. The Seilern Triptych. Oil on panel, 60 x 48.9 cm (central panel without frame), 60 x 22.5 cm (wing without frame)

The reason why churches used triptychs in particular is because the number three expresses a religious symbolism in Christianity. It stands for the “Trinity of God”, representing God the Father, God the Son, and God the Holy Spirit (The Editors of Encyclopaedia Britannica, 2020).

Apart from being created as altarpieces, Renaissance painters also used triptych in their depiction of religious themes. A famous example is Hieronymus Bosch's *The Garden of Earthly Delights* (Figure 51), and another is *The Last Judgement* by Hans Memling (Figure 52). There are numerous examples from the period that demonstrate theological subjects. However, after centuries of applications of the triptych on various art forms from sculpture to video, the traditional definition of this art is generalized into any work of art that includes three parts.



Figure 51. Hieronymus Bosch, *The Garden of Earthly Delights*, oil on oak panels, 205.5 cm × 384.9 cm (81 in × 152 in), Museo del Prado, Madrid



Figure 52. Last Judgment Triptych (open). 1467-71. Oil on wood, 221 x 161 cm (central), 223,5 x 72,5 cm (each wing) Muzeum Narodowe, Gdansk

In every way artists use triptych, what's typical is that there is a “strong sense of visual coherence”, as the Australian artist Helen South suggests. She examines possible reasons why an artist may prefer using triptychs by the following:

- To give the art a narrative in the beginning, middle, and end sense of a story.
- To continue a theme along three pieces.
- To examine a subject from multiple perspectives or with varying techniques.
- To show the progression of a subject, such as its growth or decline.
- To showcase three separate elements that are related and complement each other.
- To break up a very large piece for easier transport, storage, and display. (South, 2019)

One of many different applications of triptych revolves around the three-act dramatic structure format. A three-act dramatic structure is a narrative model that breaks a story into three essential sections. The first of these parts is usually called the Setup which incorporates an inciting incident that is followed by the second act, the Confrontation.

This part is basically the midpoint of the narrative that is also called as the rising action and later develops into the Resolution, which is regarded as the third part. This final act spotlights climax scene, where the story is resolved and becomes the most intense (Trottier, 1998). Three-act structure was formulated by the American author Syd Field in his 1979 book *Screenplay: The Foundations of Screenwriting*, and became his most notable contribution to the screenwriting studies.

Today, Irish-born artist Francis Bacon (1909-1992) is thought to be a significant figure in modern examples of triptych painting. According to the records, he produced 28 triptychs that we know today. They were painted between the years 1944-1986 (Sylvester,). It is thought that his career had a turning point in 1944, with his work *Three Studies for Figures at the Base of a Crucifixion* (Figure 53). He favored triptych format a lot and when David Sylvester, a British art critic who championed Bacon's work most, asks in an interview why this sequential format attracts Bacon so much, he replies Sylvester by telling: "I see images in series. And I suppose I could go on long beyond the triptych and do five or six together, but I find the triptych is a more balanced unit." (Sylvester, 1987).

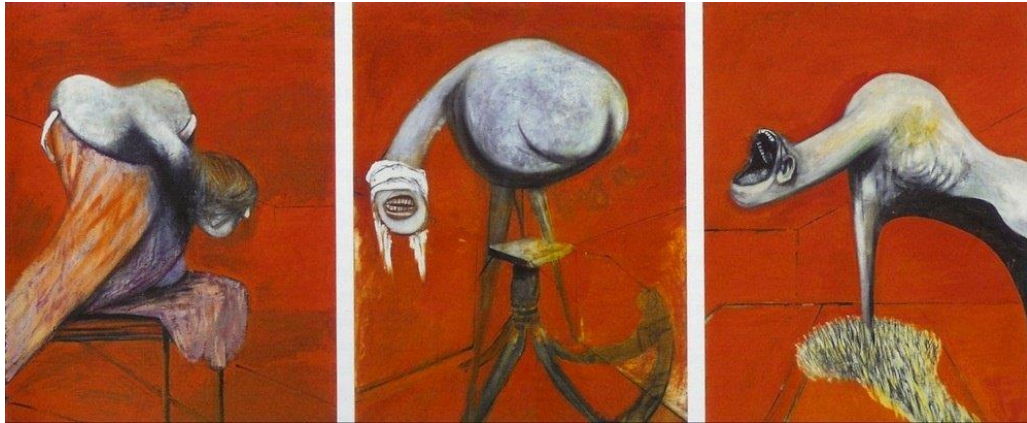


Figure 53. Francis Bacon, Three Studies for Figures at the Base of a Crucifixion, c. 1944

At this point, it is crucial to mention that Francis Bacon's interest in sequential images derived greatly from his admiration for Eadweard Muybridge, a pioneering English photographer who is known for his photographic studies of motion. In the same interview with the art critic David Sylvester, Bacon brings up his fascination (Sylvester, 1987) of Muybridge and Michelangelo by telling:

Actually, Michelangelo and Muybridge are mixed up in my mind together, and so I perhaps could learn about positions from Muybridge and learn about the amplex, the grandeur of form from Michelangelo, and it would be very difficult for me to disentangle the influence of Muybridge and the influence of Michelangelo.

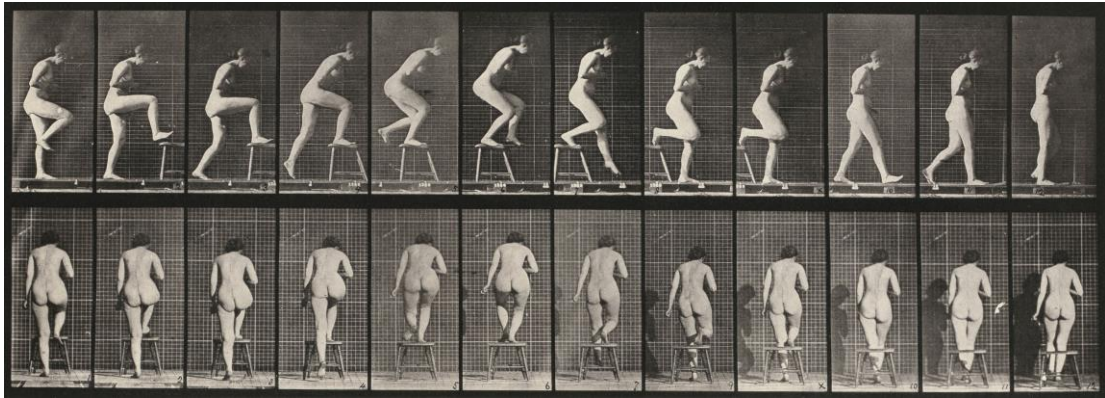


Figure 54. Edward Muybridge, Plate 180. Stepping on and over a chair, 1887, National Gallery of Art

Similar to Muybridge and “the method of chronophotography (a type of graphic registration of time) of motion” (Zielinski, 1999) played an important role in Bacon’s sequential work, I too followed an akin path while creating my triptych work, *Clocks*. I established an abstract narrative by making use of the three-act structure, and demonstrated a sense of motion based on my concept of an heterogeneous clock, allowing the audience to witness a shifting image in time, which I am going to display in the next chapter.

3.4. The Project: *Clocks*

For my thesis project, *Clocks*, I did not use any real time data in order to execute a digitally working clock or to generate a data-based image. I could have done visual copies of a territory by employing aerial photographs of crowds and painting pixels for each person in the crowd, however, I wanted to create something more poetic by taking

this idea as the basis of my thinking. By constructing a triptych of imaginary moments, I built a simple and an abstract narrative of a wall being broken (Figure 60).

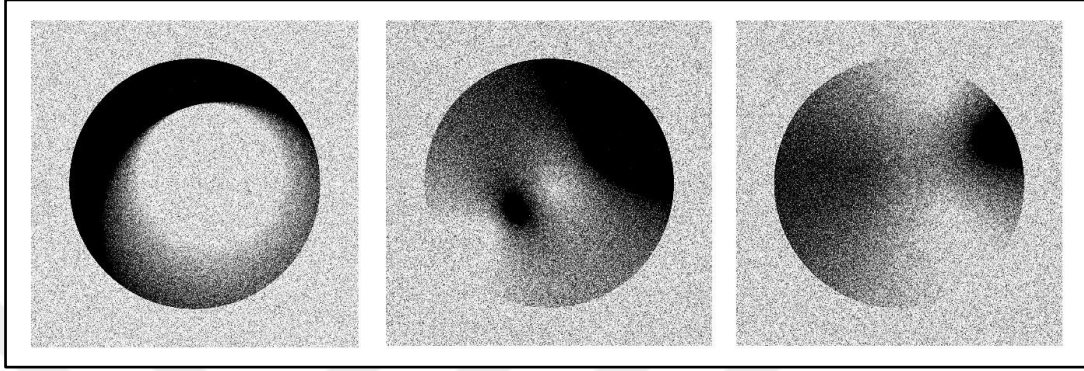


Figure 55. Sena Çelebi, Clocks, 2019.

In Clocks, I wanted to depict a sense of motion in a chaotic order, with the acts of a beginning, middle and end. Each three of these digital paintings in the triptych are 100 x 100 cm fine art prints and the more you get closer to them, more you start to realize the small pixels that form the bigger image. Figure 56 demonstrates what we see when we get closer to the prints.

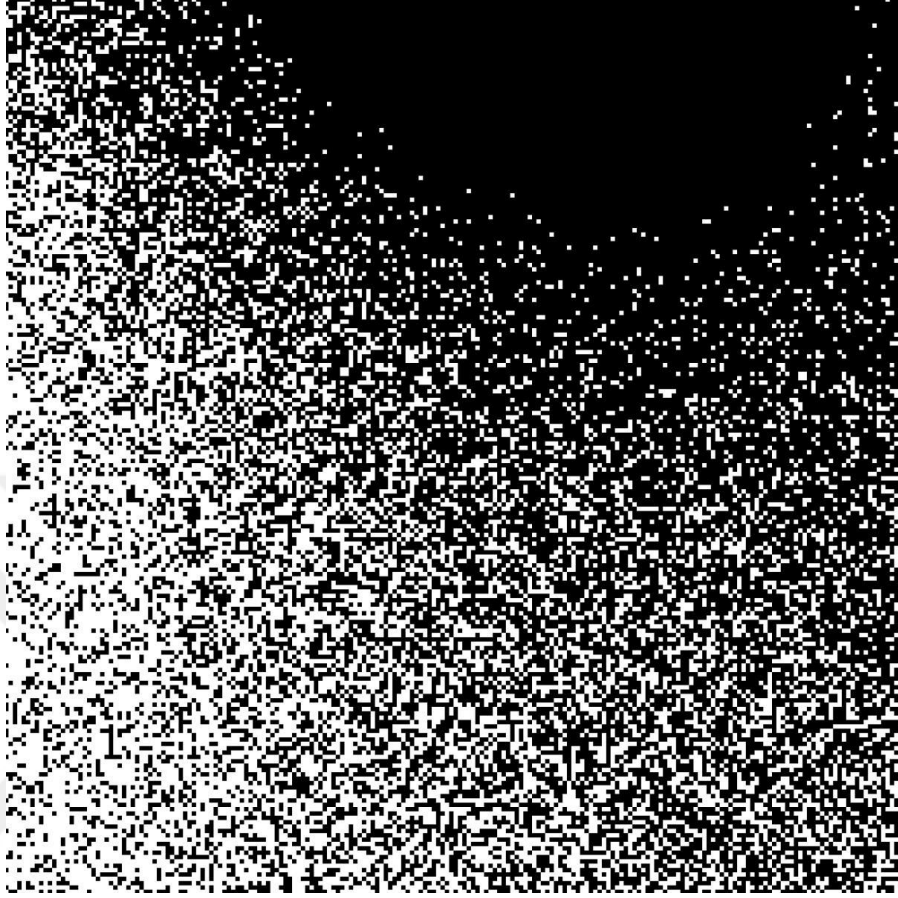


Figure 56. Sena Çelebi, Clocks, 2019.

I imagined each section of this triptych as a recollection of a unique moment that is formed by unique experiences of duration, with regards to the Bergson's thinking. Of course there is no correct way to visualize what Bergson suggests with his theory on duration, one can only experience it in one's conscious state, yet, his writings had a strong influence on my way of thinking and speculating on our unique collection of existences in time.

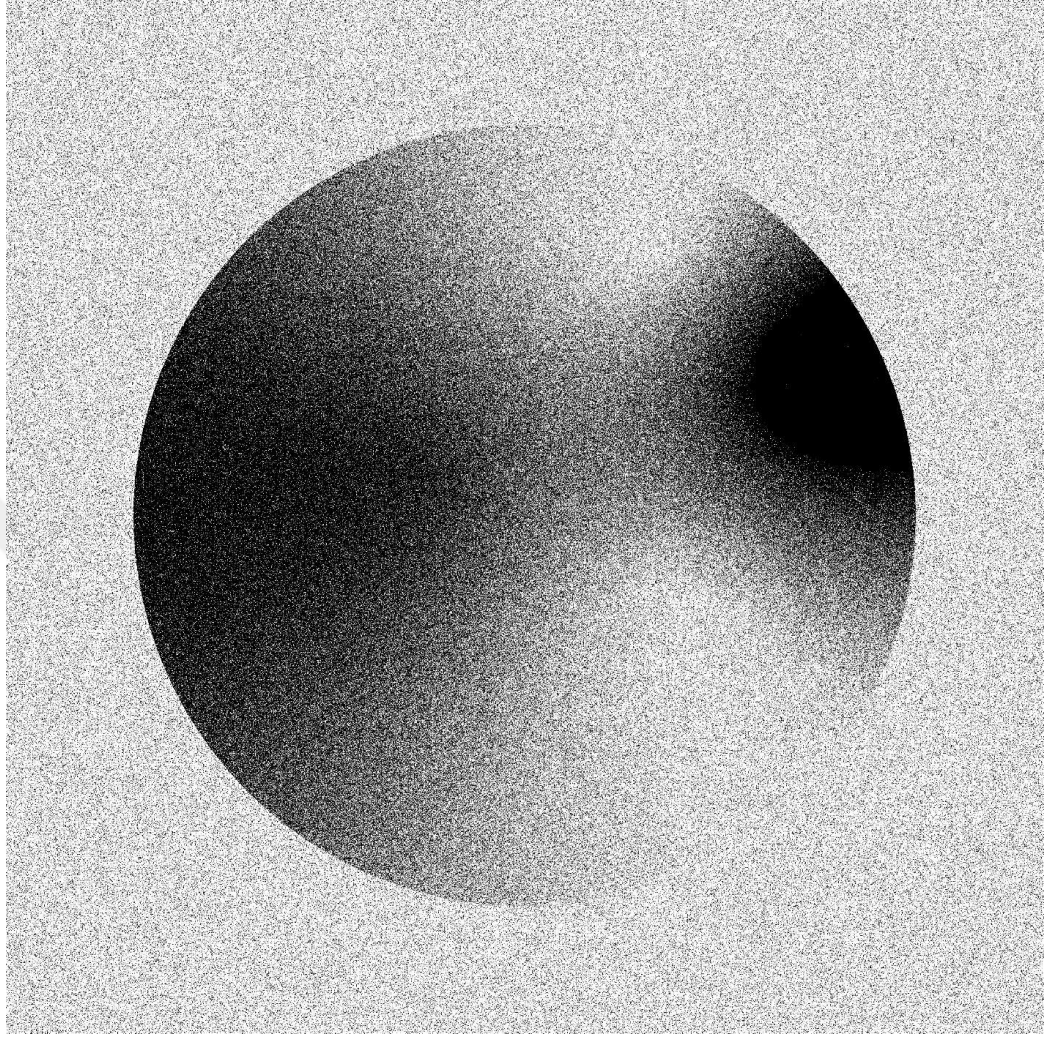


Figure 57. Sena Celebi, Clocks III, 2019.

While creating these acts, I built a crowd of pixels and intensity nodes that change position and trigger every each other once they move. And one small change in position can cause great changes in the bigger order, creating a fluctuating motion, as it is in the butterfly effect.

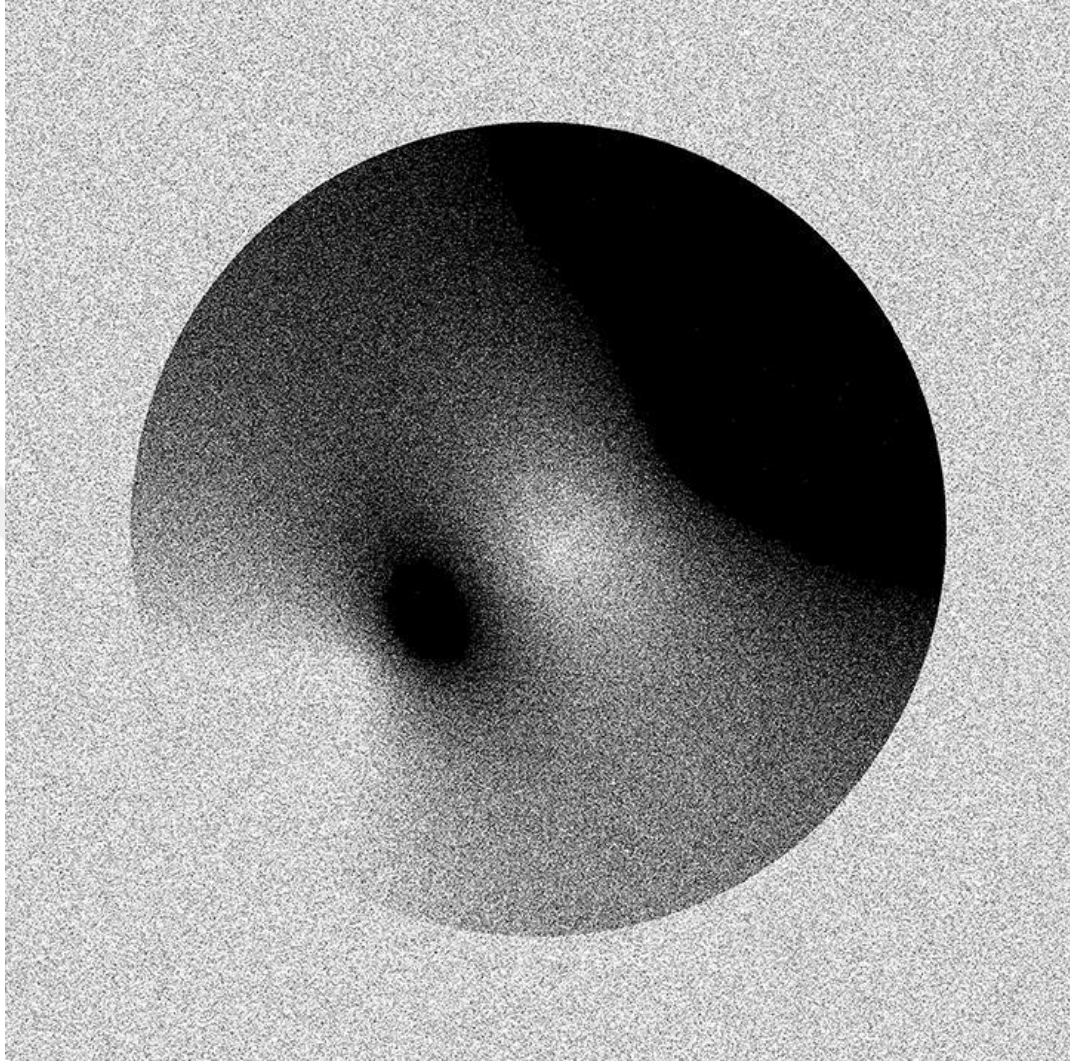


Figure 58. Sena Çelebi, Clocks II, 2019.

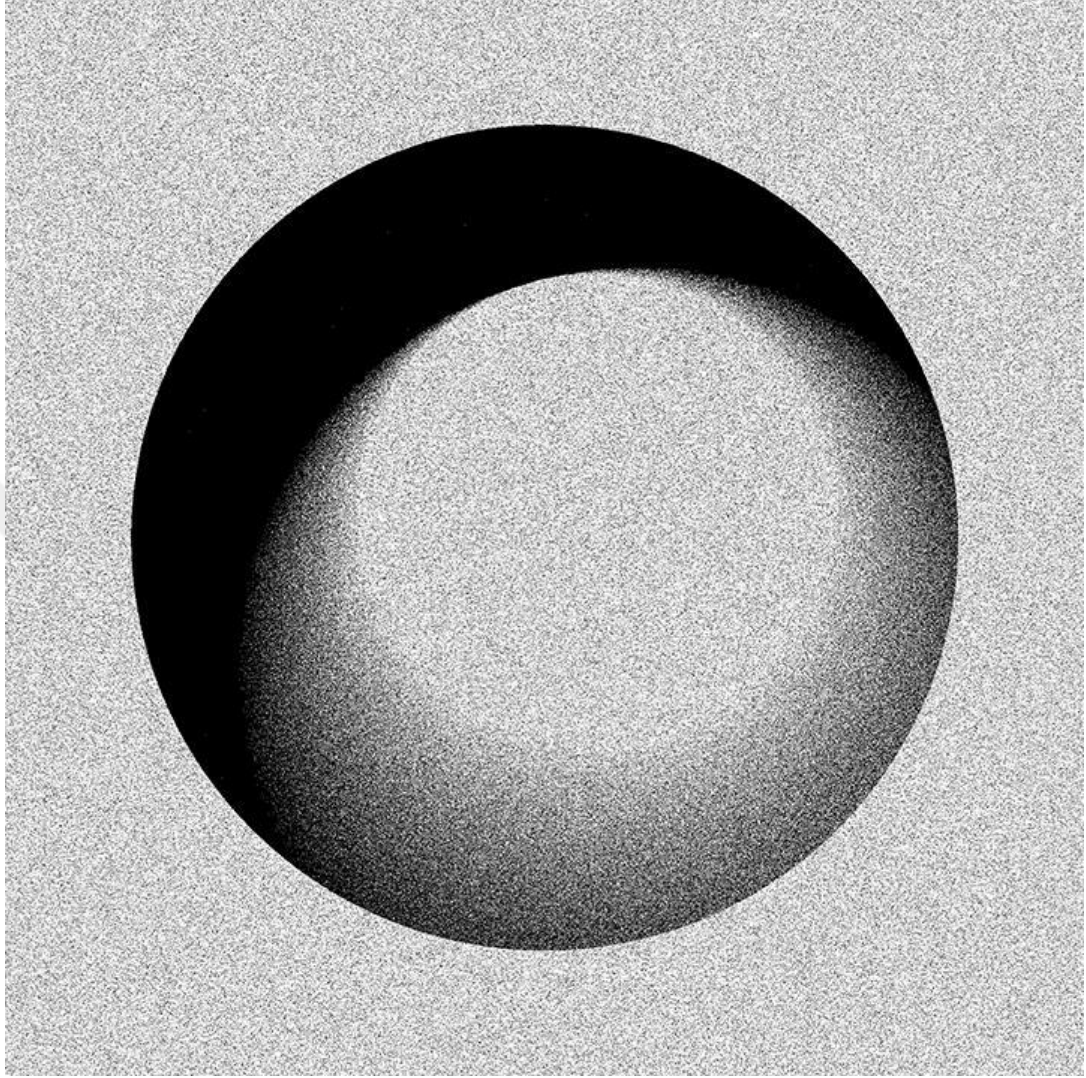


Figure 59. Sena Çelebi, Clocks I, 2019.



Figure 60. View from the exhibition.

3.5. Artist's Statement

Our movement is in a constant change, generating infinite amount of pathways inside our intersecting durations. Together we build walls, break walls, cross borders, keep ourselves isolated, choose to blend in, get lost, float, knock at doors, enter in, stuck, escape, and eventually move at the end; no matter how long or how far. We are introverts who are forever out.

Map is static, immediate experience is not. Experience is continuously changing. Imagine everything stopped moving and the Clock is fixed in one pattern. Does time stop? No. Experience goes on, and everybody is unique inside their own conscious states. Time keeps going because map is not the territory. You cannot witness time through a static screen, you can only live it as long as you can reach to the absolute.

Imagine you stopped changing your position in space. Did your experience of time stopped? No. You keep changing in a flux. You are not the person you were in the past. So there is never the same moment. There is only the recollection of a moment coming from the past and while recollecting that moment, you are already flowing in another new moment.

Imagine everybody stopped, the screen keeps still, but participants of that screen are not still, they change, in their mind, through their immediate experience that continues forever even they do not change their position. So, this is heterogeneous time and it is independent of space. You can only find continuity, motion, flux and image there.

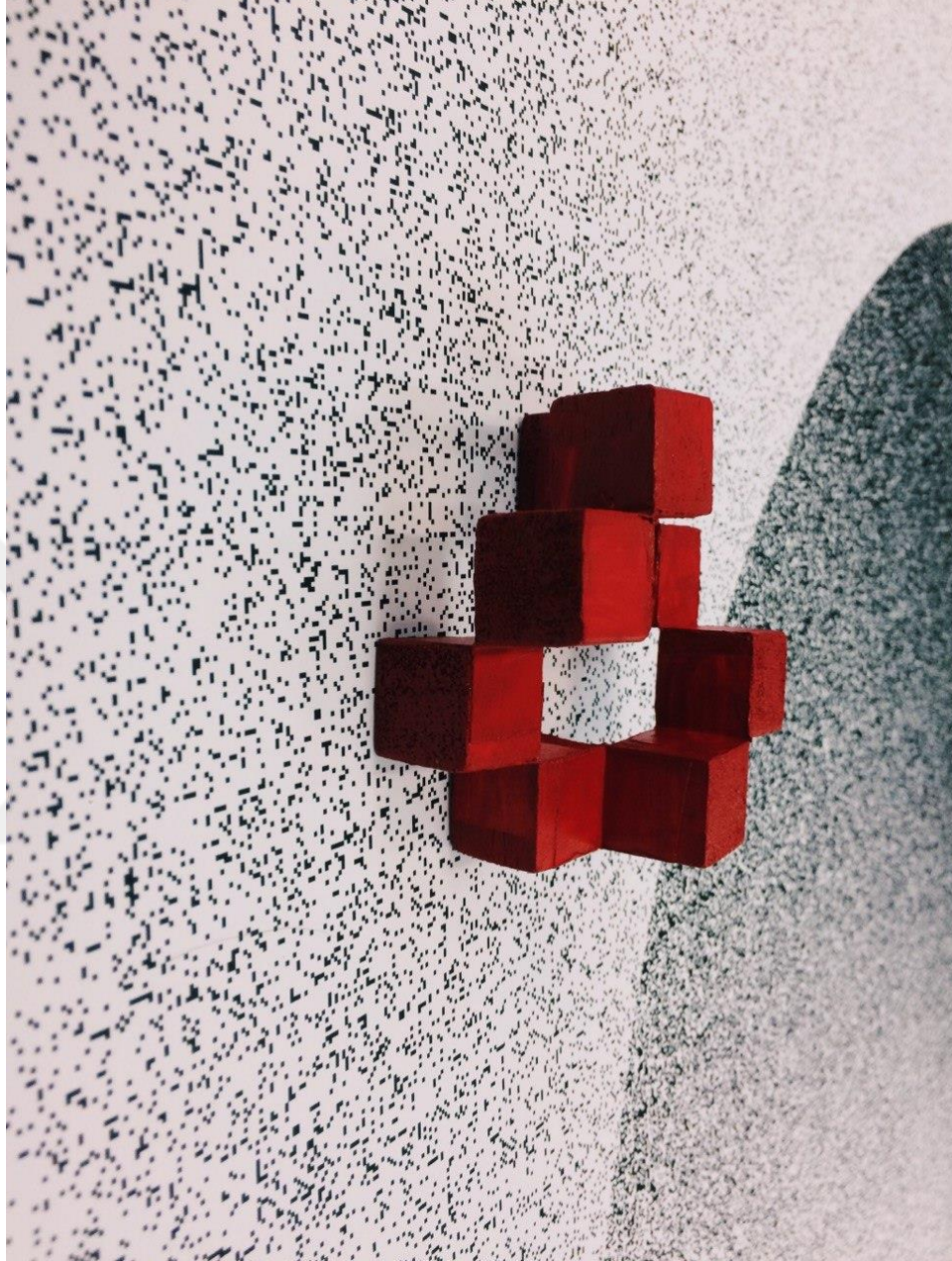


Figure 61. Sena Çelebi. Print testing. Clocks, 2019.

CHAPTER IV.

CONCLUSION

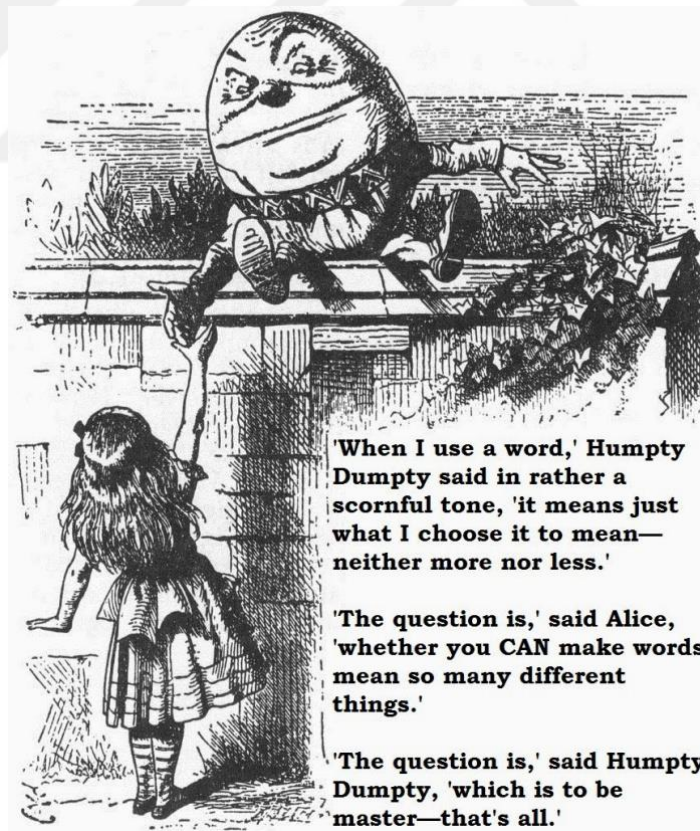


Figure 62. Humpty Dumpty and Alice. From *Through the Looking-Glass*. Lewis Carroll. Illustration by John Tenniel.

“Static, static, static. Be static! Movement is static! Movement is static because it is the only immutable thing—the only certainty, the only thing that is unchangeable. The only certainty is that movement, change, and metamorphosis exists. That is why movement is static.”

Jean Tinguely

Among all the remarks that was made in this thesis, I would like to celebrate Humpty Dumpty's most, for shaking the way I see and enlightening the path towards creativity. Like the symbolic and therefore arbitrary nature of letters in an alphabet which help humanity communicate to each other, clocks are also invented with the same purpose that posits time as a symbolic construction we use in order to regulate our daily lives. However, time also can easily become what we choose it to mean, so I related our use of language to our experience of time, both being not homogeneous in their essence.

Monitor is a work that defines itself in its openness. My decisions and formations as the artist can only be valid until it meets the eyes of the beholder. In the text, I present the main framework as a conceptualization of a clock, and while doing so, I made use of various studies, approaches, experiments and plays. However, when the image of *Monitor* first appeared in my mind, I immediately knew it would open brand new questions to discuss about. I suddenly looked at this giant digital screen that is put in the middle of a crowd from diverging aspects such as surveillance, map-territory relation, or togetherness of natural and artificial.

Going back to our experience of duration, a vivid confusion can be identified regarding the space-time relation that *Monitor* reflects. In the definition of Bergsonian duration,

the space is detached from time. On the other hand, Monitor *uses* space to manifest the idea of duration. There is a spatial and therefore quantitative image that tracks the changing positions of the participants of this clock. Yet, I think this quantitativity can provoke a qualitative involvement of the beholder. That is to say, when one looks at a mirror without moving or changing position, s/he will still witness the passage of time since it is a conscious state. In this scenario, space fuses into the experience of duration by becoming a provoking element. The stillness of body meets the instability of consciousness.

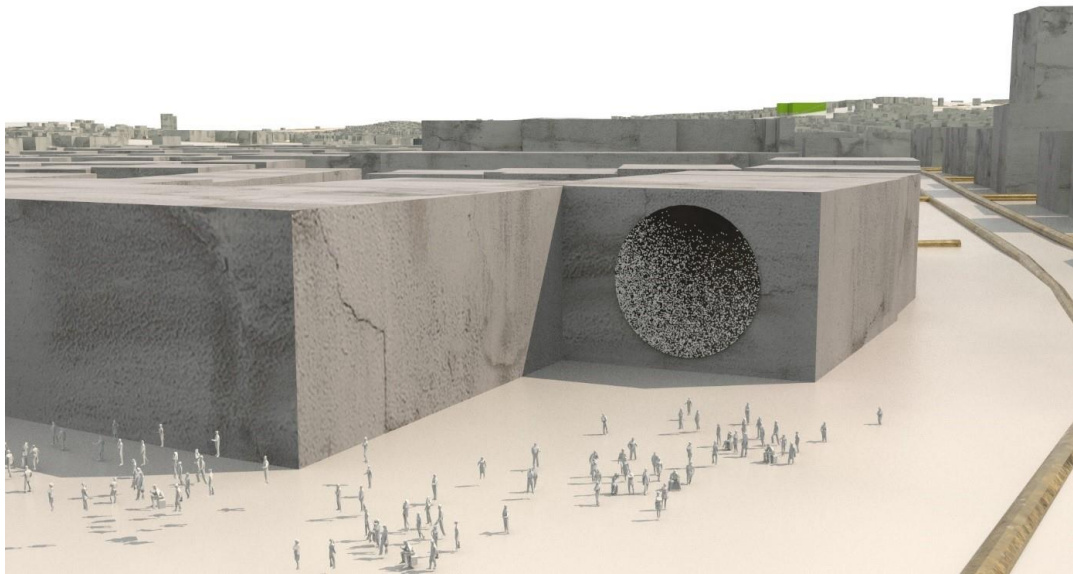


Figure 63. Sena Çelebi. Monitor. A test render. 2019

When I think of this sculpture idea as a simple data visualization of an urban territory, what comes to my mind is digital artist Burak Arıkan's work Real Time Rome that he created in 2006 at MIT Senseable City Lab. In his own words, "The project utilizes data gathered, in real time and at an unprecedented scale, from cell phones and other

wireless technologies, to better understand the patterns of daily life in Rome, and to illustrate what ubiquitous connectivity in an urban environment looks like.” (Arıkan, 2006). The project investigates six different dynamics of a city through six software-maps which are:

1. Pulse: What are the patterns of use in Rome?
2. Connectivity: Is public transportation where the people are?
3. Flow: Where is traffic moving?
4. Icons: Which landmarks in Rome attract more people?
5. Visitors: Where are tourists congregating?
6. Gatherings: What does Rome look like during special events? (Arıkan, 2006)

So he created six different maps that track the real time data as an answer for each question. Figures 64,65,66 are some photographs from the exhibition demonstrating how these maps look.

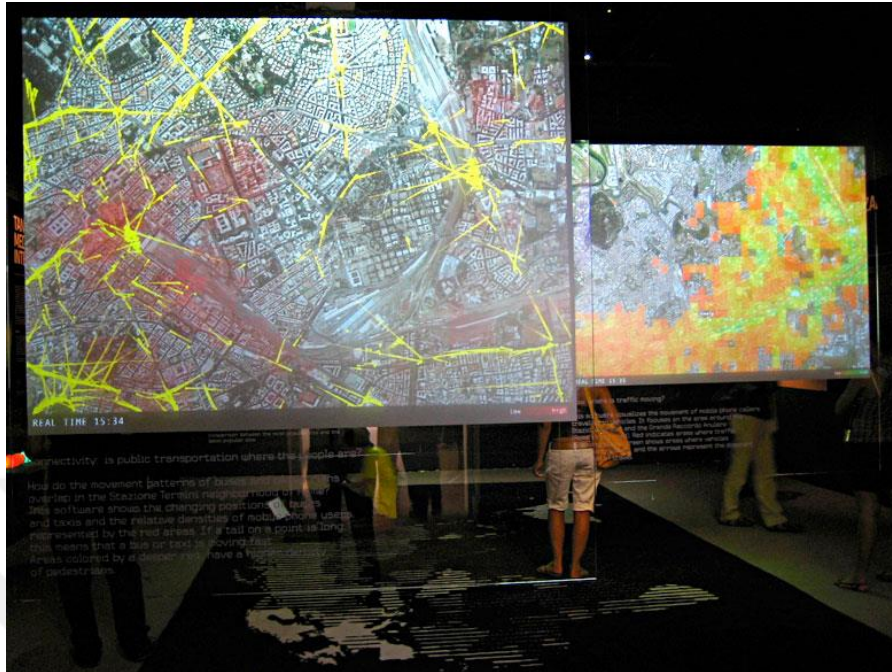


Figure 64. Exhibition view, Venice Architecture Biennale 2006 at the Italian Pavilion

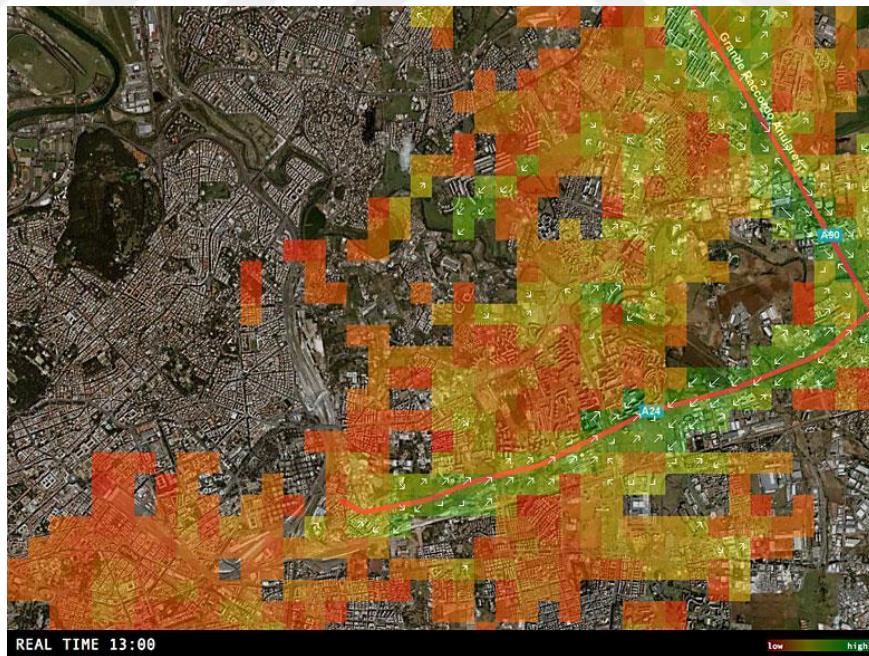


Figure 65. Flow: Where is traffic moving? Venice Architecture Biennale 2006 at the Italian Pavilion.

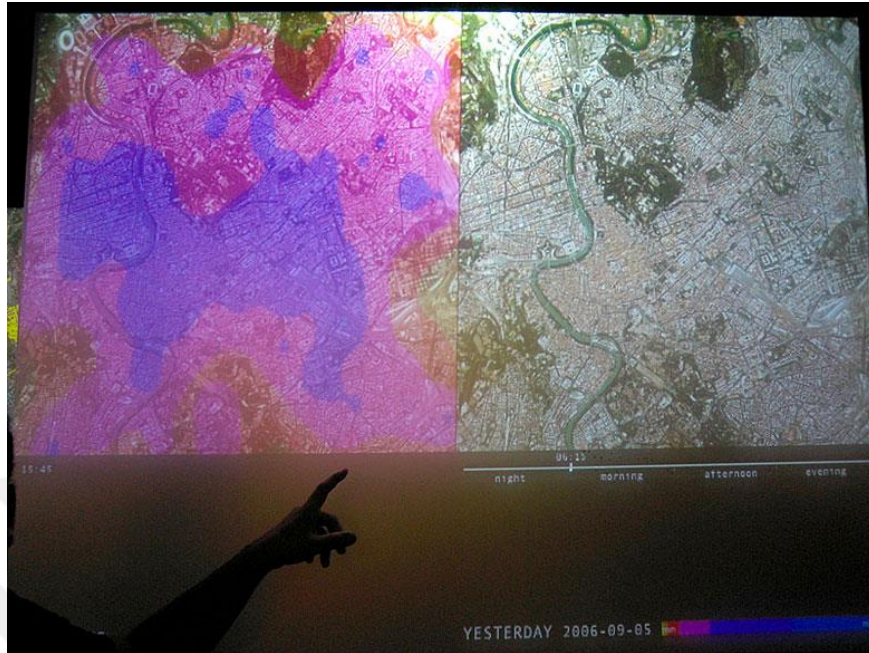


Figure 66. Pulse: What are the patterns of use in Rome Exhibition view, Venice Architecture Biennale 2006 at the Italian Pavilion.

Arikan's work appears as an influential visual research that resonates both aesthetically and contextually with the concept I developed for Monitor. Yet my research rotates around a bit of a different approach. For instance, Real Time Rome covers a very large part of the city, while in Monitor, I imagine multiple sculptures (clocks) that cover smaller areas. The plan that appears in my mind is sort of similar with Bernard Tschumi's Parc de la Villette in terms of the distance between the monuments and the areas that each of them covers. (Figure 67).

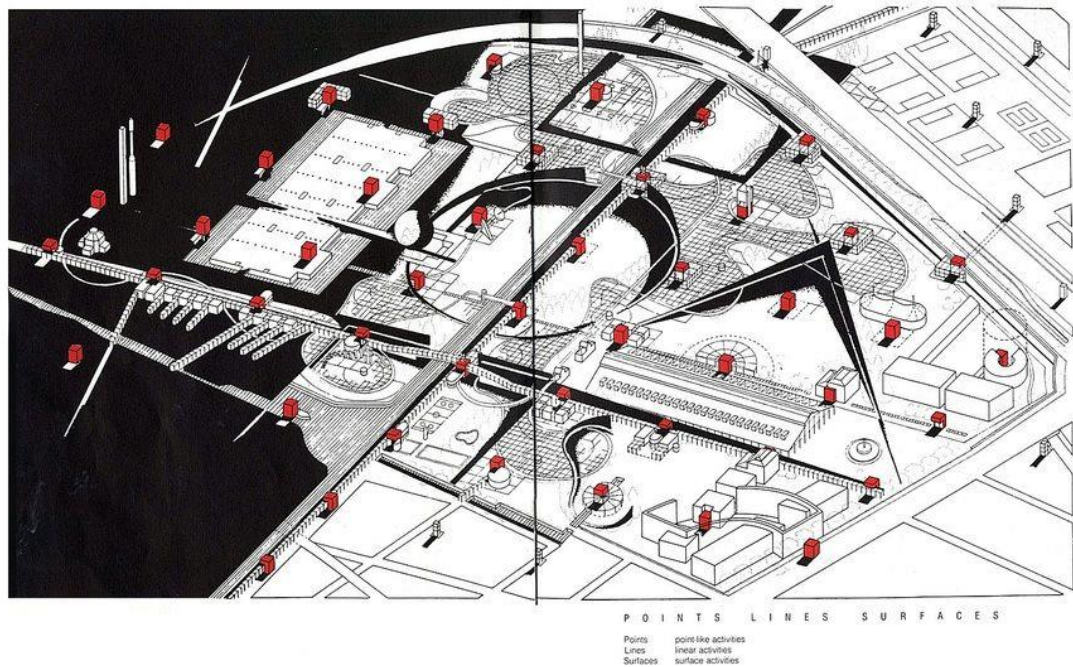


Figure 67. Bernard Tschumi. Parc de la Villette. Paris.

Additionally, I imagined exhibiting the data as a mirror of the people in that territory. I consider this as a more individualistic way for one to engage in the experience by being both the observant and the participant. So, this can open up the question of surveillance and can become a monument for ‘we are all being surveilled and we are aware of it.’

We all know that we are being surveilled in every way possible today and our existence is constantly being turned into data. So if our lives or motions are unique videos, why not watching them on display and see how they permeate to each other? As Andreas Treske states in his book *Online Video Aesthetics or the Afterlife of Video*: “I wonder what would be the color of all videos, played all together at the same time, streamed at once onto a huge screen looked at from a distance far, far away.” (2015)

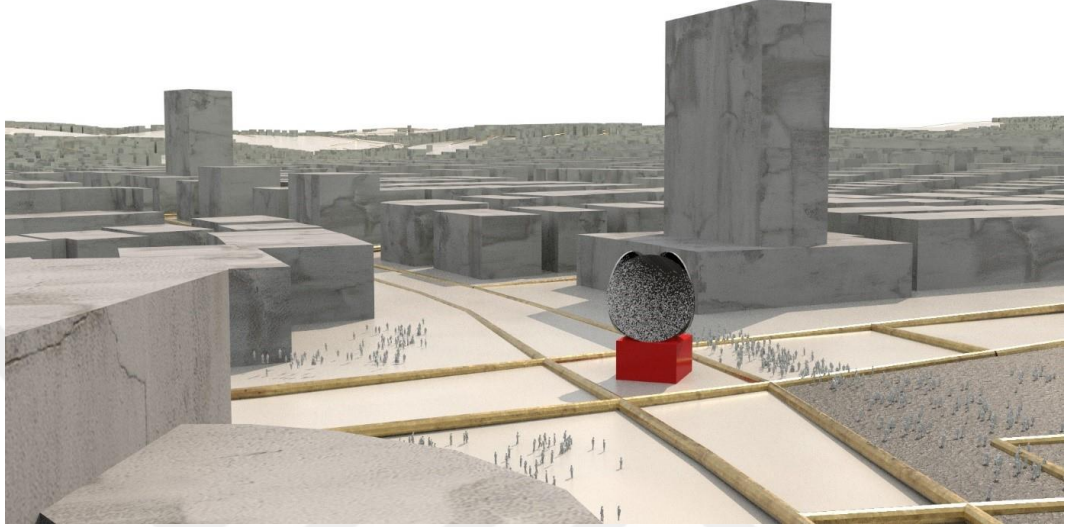


Figure 68. Sena Çelebi. Monitor. A test render. 2019

In conclusion, as a result of this thesis work, I constructed an idea of a heterogeneous clock and visualized it as best as I could in the meantime. In doing so, I was deeply inspired by Bergsonian thought and his definition of heterogeneity in time. Even this thesis highlights the process in particular, I introduce my thesis project Clocks as a lyrical triptych of digital paintings that is inspired by the process of conceptualizing Monitor. And Monitor is the digital urban sculpture concept I developed on my journey of art as visual research. In the New Tendencies movement, there is no finished art but only experiments and discoveries, so I plan to work on the Monitor more as a further study and hopefully build a small scale prototype by collaborating with software developers. For now in this limited space of pages, that is how I crystallized my thoughts into an artistic thesis project.

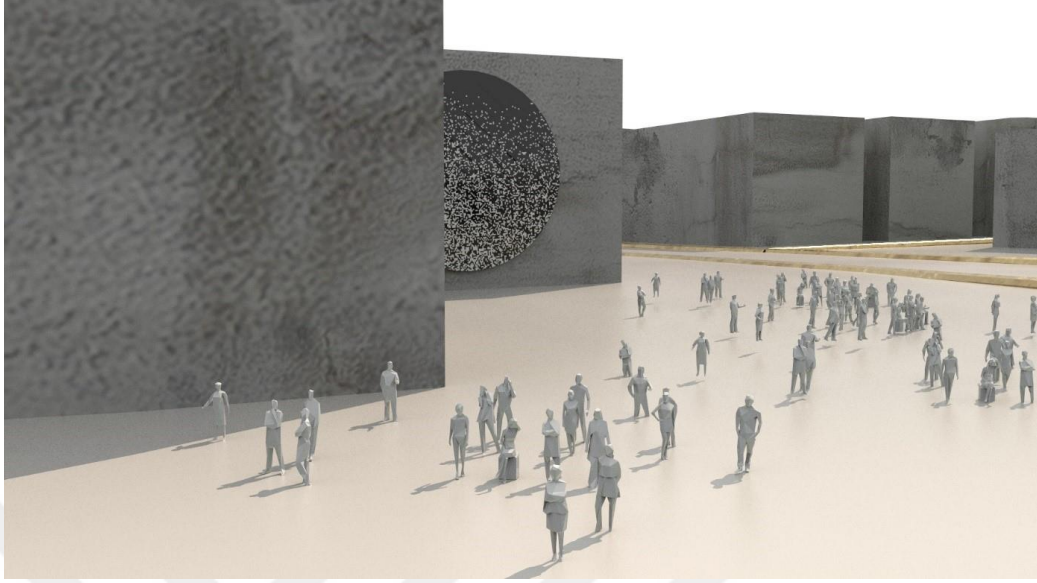


Figure 69. Sena Çelebi. Monitor. A test render. 2019

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