

71 Sections along the Istanbul Canal

Research plan on the Infrastructure & Congestion Mega Map

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Table of Contents

I - Introduction

II - Problem Statement

III - Theoretical and Conceptual Framework

IV - Research Question

V - Methodology

VI - Mapping Agency

VII - Conclusion and Reflection

VIII - Bibliography

IX - List of images

X - Diagram of the Research Structure

I - Introduction

The principle aim of this research proposal is to place the act of mapping as a central investigation, critique, and representation medium, aiming to understand the complexities and specificities of the suggested study area. Hence, in order to understand the contemporary geopolitical turmoil surrounding the Marmara basin as a territorial entity, it is first primordial to establish a clear research plan that allows the dissection of the investigation method into coherent components. With the previous statement in mind, it becomes essential to position the research within existing local, regional, and global discourses that guide the collective thought process.

Historically, the strategic location of Istanbul (or Constantinople) allowed it to become the hub for the rich passage of commerce and goods along the Silk Road. Within the framework of the Borders & Territories graduation studio, the city is observed as a palimpsest of transient epochs, stratagems, and agendas that create a unique territorial condition. The proposed study area shall be defined as the region surrounding the Marmara Sea. As such, the scope of this research shall observe the water body as a schism defining East and West Turkey as two interconnected entities. This also implies the inclusion of the multitude of flows – as an exchange of goods, traffic and infrastructural networks – that operate within the study area. Additionally, with regional power struggles at play, the Marmara basin becomes a strategic ‘in-transit’ area for passage into the Black Sea. Indeed, the Montreux convention¹ orchestrates treaties, passage, and liberties in relation to the passage through the Bosphorus strait. Here, the notion of ‘territory’ is placed at the nucleus of the debate. Infrastructure becomes a medium through which territorial and political agendas are implemented. The research interest then resides in producing a collective map that demonstrates the aforementioned implications, as a critical agent in shaping territorial complexities.

We could consequently identify three main themes that will be explored through the collective research. It is firstly important to define the ‘Territory’ as the stage of the exploration, setting forth key landscape metamorphosis. Secondly, Infrastructure as a series of systems and its role in shaping the land will become the tool that will filter the research scope. Lastly, the agency of mapping shall be demonstrated through the produced common map, arguing that cartography becomes ‘post-representational’. In order to structure the thought process, we shall then firstly define the problem within a clear theoretical and conceptual

framework. Secondly, we shall extract the research question and the subsequent methodology applied. Thirdly, the produced map shall be discussed with an emphasis on key critical and representational components, acting as a culmination to the research phase.

1. “The Montreux Convention, which is an essential element in the context of Black Sea security and stability, has been properly and impartially implemented by Turkey for more than seven decades. In this regard, the successful implementation of the Montreux Convention since 1936 is a testimony of the balance carefully established by the Convention.

According to the Montreux Convention, merchant vessels enjoy freedom of passage through the Turkish Straits (Turkish Straits Vessel Traffic Services Centre regulates the passages according to the Maritime Traffic Regulations for the Turkish Straits dated 1998), while passages of vessels of war are subject to some restrictions which vary depending on whether these vessels belong to Black Sea riparian States or not.

Besides some general restrictions applicable to all, vessels of war belonging to non-riparian States are subject to specific restrictions such as those regarding maximum aggregate tonnage and duration of stay in the Black Sea.”

Source: Republic of Türkiye Ministry of Foreign Affairs. (z.d.). Implementation of the Montreux Convention. Extracted on 26 oktober 2022, van <https://www.mfa.gov.tr/implementation-of-the-montreux-convention.en.mfa>



Image 1: Reference An Istanbul miniature, 1533 by Matrakçı Nasuh

II - Problem Statement

With the definition of a well-established scope, the research problem and conditions are then brought to the forefront. It is now evident that rethinking the ‘power’ of the map, and the need for a new kind of depiction that detaches itself from conventional techniques of storytelling and representation. As Rob Kitchin argues, “New ways of thinking about cartography opens up the debate on the ontology of maps, creating new post-representational and processual modes of understanding” (Kitchin, 2010). While taking the multi-layered context of the Marmara basin as an experimentation ground, we shall demonstrate the need for mapping to transcend representation, as an attempt to introduce it as a critical agent. We shall then problematize the existing conditions as a series of preliminary investigation topics:

- Why is mapping relevant in dissecting the complex socio-political status quo and its inherent implications?
- What are the systemic transformations and land morphologies that are defining the Territory?
- Where does the role of Infrastructure as a system come into play as an agent of transformation?
- When are the inherent land transformations occurring as a result of infrastructural systems?

III - Theoretical and Conceptual Framework

The problem statement acts as a lens through which the scope is refined, defined, and well-established. By establishing a clear research interest, it becomes essential to situate the debate within existing academic and theoretical discourses. This enables a clear understanding of the multiple employed concepts, themes, and ideologies that guide both the research and subsequent common production. Here, we can make a distinction between a framework defining the research interest and conceptual thinking, and the framework guiding the construction and representation components of the final map. Both of these themes shall be discussed below as a successive and interconnected thought process.

Let us begin by clearly establishing a precise definition for the individual terms under study. As such, Infrastructure and Territory shall be placed at the center of the research interest. Stan Allen's definition of infrastructure is then assumed as true. As stated as a first proposition in *Points + Lines* (2012), infrastructure "[...] works not so much to propose specific buildings or given sites but to construct the site itself. [...] Its primary modes of operations are: the division, allocation, and construction of surfaces. Infrastructure's medium is geography" (Allen, 2012). Thus, it is to be understood as a system that orchestrates specific territorial conditions, having a significant impact on its context. This understanding of Infrastructural systems could further be elaborated by examining Latour's *Paris: Ville Invisible* (1998). The Infrastructural systems in themselves become 'oligoptic devices'² implemented across the landscape, demonstrating a clear interconnectedness between urban experiences and complex network systems. This challenges the preconceived notion of the city as 'fragmented and static', proposing a narrow and specific outlook through the studied infrastructural systems that are defining the Territory. It then becomes important to explain what we understand as a territorial entity, interpreting its existence as a stage upon which transformations are happening through infrastructural instruments. Here, we refer to Stuart Elden's understanding of a territorial entity. He argues that "Territory can be understood as a political technology: it comprises techniques for measuring land and controlling terrain. [...] Understanding territory as a political technology is not to define territory once and for all; rather it is to indicate the issues at stake in grasping how it was understood in different historical and geographical contexts." (Elden, 2010). As a result, the Territory becomes the stage, the experimentation grounds upon which these oligoptic devices shape their context.

This leads us to the last guiding principle in our theoretical approach. It is concerned with the translation of the research components, definitions, and conceptual themes into a representational medium capable of a critical agency. As such, the Situationist discourse, advocating for placing forward the expression and symbiotic relationship between objects, becomes the core of the representation process. Indeed, Guy Debord states: "when two objects are brought together, no matter how far apart their original contexts may be, a relationship is always formed" and this 'bringing together of two independent expressions, supersedes the original elements and produces a synthetic organization of greater efficiency" (Debord, 2006). Consequentially, infrastructural elements and their inherent territorial transformations shall be represented by the relationship that unifies them, and this will become a principal representation medium in producing the final map.

2. Following Latours notion We interpret oligoptic devices as devices that make possible "sturdy but extremely narrow views of the (connected) whole" (Latour, Bruno. *Reassembling the Social. An Introduction to Actor-Network-Theory*. OUP Oxford, 2005. p. 181)

IV - Research Question

The problematization and grounding of the research conditions, and the placement of our interests and explorations within a specific conceptual context enables a clear understanding of the specific elements needed to explore the given exercise. As such, we propose a research question that bridges the gap between the two situations described in the problem statement. The main focus of our approach shall be to instrumentalize mapping in order to reveal the complexities of the study area from an Infrastructural standpoint. Henceforth, we propose two research questions that enables us to further structure our reasoning:

Research Questions:

- How can mapping be an agent in dissecting the specific territorial transformations engendered by Infrastructural systems?
- How can we materialize data pertaining to the construction of the Istanbul canal by examining its Infrastructural impact on the territory?

In order to answer the previous propositions, it is primordial to establish a clear methodology that would structure the reasoning, provide data, allow for experimentation, and create a clear research plan. Its primary aim is to concretize theory and concepts into praxis, constantly considering the problem statement, research question and approach as frameworks, allowing the eventual map generation.

V - Methodology

In this section we highlight the methodology of the production of the culminated map. To understand infrastructure and its impact on the territory we use the prospected Istanbul Canal as an investigation tool. The selection of a hypothetical project that is to be implemented in the area, and dissecting its hypothetical connotations as well as the projected land transformations it will engender, is the core research subject. We then make the conscious choice to choose a speculative research approach that connects present and potential future conditions. Below we discuss the techniques and sources used in the establishment of the map, the creation of a base map that filters the initial obtained data, and the experimental approach to representation and interpretation. Besides, the methods described below, the discussion with our tutors, as well as the discussions within the group, have been vital to the development of the map. The contributions to these discussions included, but are not limited to, mapping references, literature, methodological approaches and practical suggestions. We could then distinguish between different research approaches employed throughout the research that will be specified throughout this text.

As a first step in this process, we adopt an essential quantitative and historical analytical approach of Territory and Infrastructure. The collection of data is then centered around the consultation of local architects, data extraction from geographic information system (GIS), review of government documents/projects, and articles of journalists and academic papers written on the research area. The selection of relevant data for our research plays a critical role in the formation of the map. In this research we focus on the symbiotic relationship between represented infrastructure and the subsequent territorial transformations they engender. This allowed us to focus on infrastructural intersections and knots within the territory.

The territorial focus enables a more careful selection of particular elements essential to the methodology. The next step is then a selective research approach, that allows a clear filtration of relevant elements to the broader narrative. At the start of the process, it was important to establish a base map that sets the territory as a primary constituent. By using common layers in all regions of the map, comparing, overlaying, overlapping became possible. We gained a broad understanding of how these several infrastructural systems function, how they are related and the scale of their impact on the territory. Furthermore, by layering the data we emphasize the multiplicity of the connections between

infrastructure and the territory. It was especially important to focus on particular moments in a multi-oligoptic investigation of the projected canal, creating an 'object/subject' relationship³ between Infrastructure and the Territory.

The mapping process is capped with an experimental research approach. By consistently creating different versions of the map we aimed to find the best way to communicate the content as a critical tool to understand the infrastructures and the territories they engender. Our mapping started with the definition of several frames of significant infrastructural intersections and knots. Consequently, the frames are placed along axes indicating their spatial relationships and shared narratives. The content on each frame requires a different scale and representational technique to fully show and understand the infrastructural complexities.

We then moved from the fragmentation of crucial infrastructural knots and their subsequent effects on the territory to the rather physical amendments potentially caused by the realization of the Canal Istanbul. In the further process, we identified the medium of the section as a critical tool to investigate the conversation of infrastructure with the ground. Depicting the amount of displaced soil bluntly renders the tremendous territorial disruptions. Hence, the canal's negotiation with the ground becomes not only a crucial aspect in our reasoning for the impactful intervention but is reflected graphically in its centrality in the map. To further scrutinize the canal's relation to existing infrastructure and territorial conditions we gathered, interpreted and represented data in relation to the loss of sweet water lakes, and the amount of disrupted systems. The loss of sweet water is here specifically addressed as the lakes are the main drinking water supply of Istanbul. Layering this information allows us to draw new relationships among these different indicators and to emphasize our critical observations.

3. We interpret the 'object' as the specific instances of the physical manifestation of infrastructure, such as a bridge, tunnel or the canal. The subject we perceive as the affects infrastructural systems engender, such as the territorial transformation or new morphological conditions.

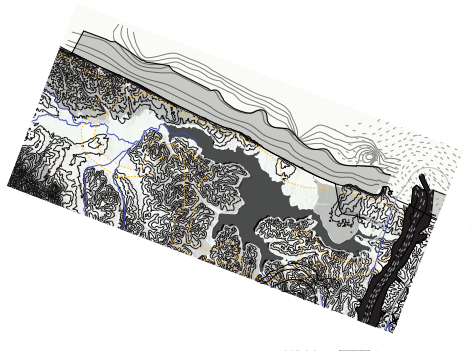
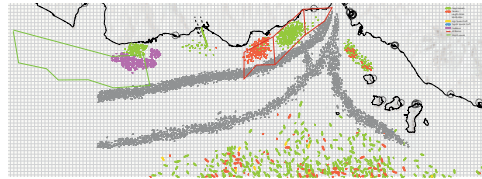
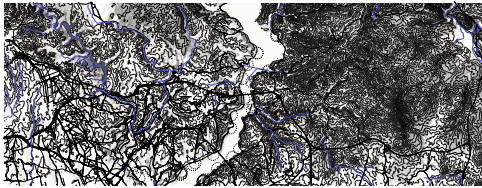
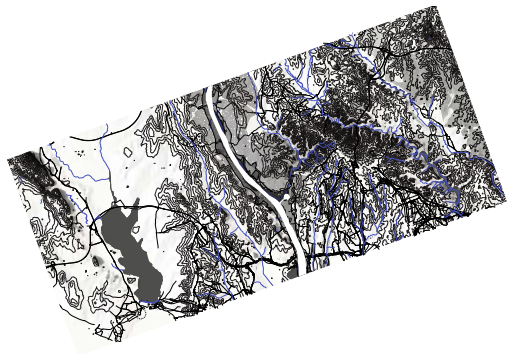


Image 2: Collection of examples from the experimental phase mapping

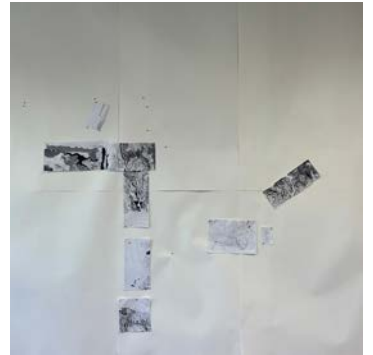
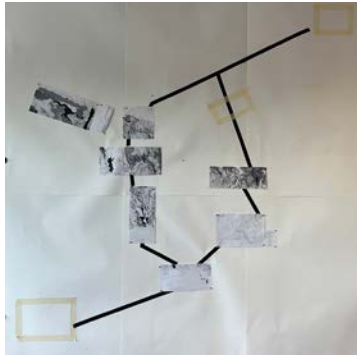
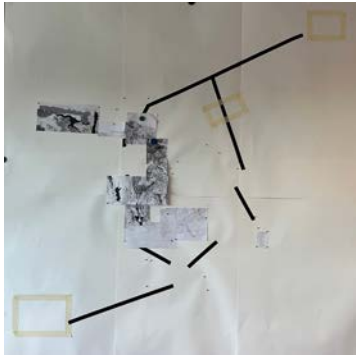


Image 3: Drafts for the collective map, produced on 21/09/2022

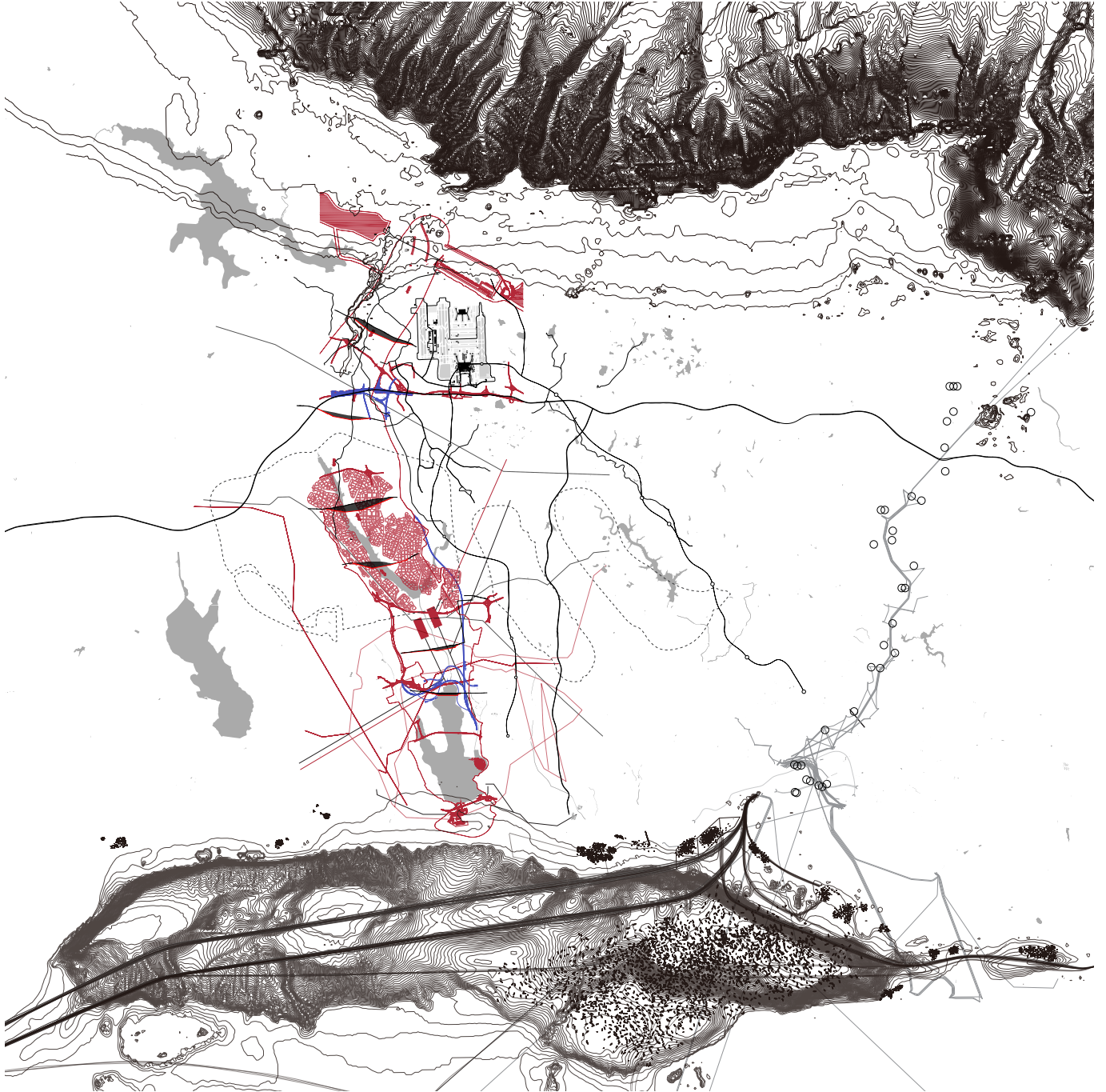


Image 4: Draft from the experimental phase mapping, created on 05/10/2022

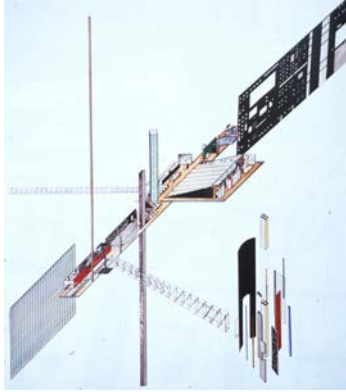


Image 5: Reference, Dutch Parliament extension by OMA



Image 6: Reference, Agricola Cornelia -2, 1978 by Baruchello



Image 7: Reference, Tertium Dufur, 1988 by Gianfranco Baruchello

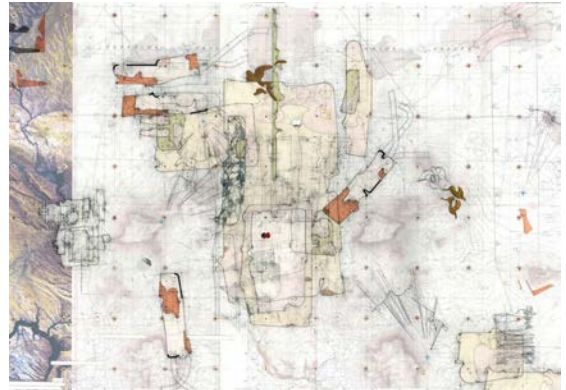


Image 8: Reference, fast twitch-site plan, 2004 by Kulper

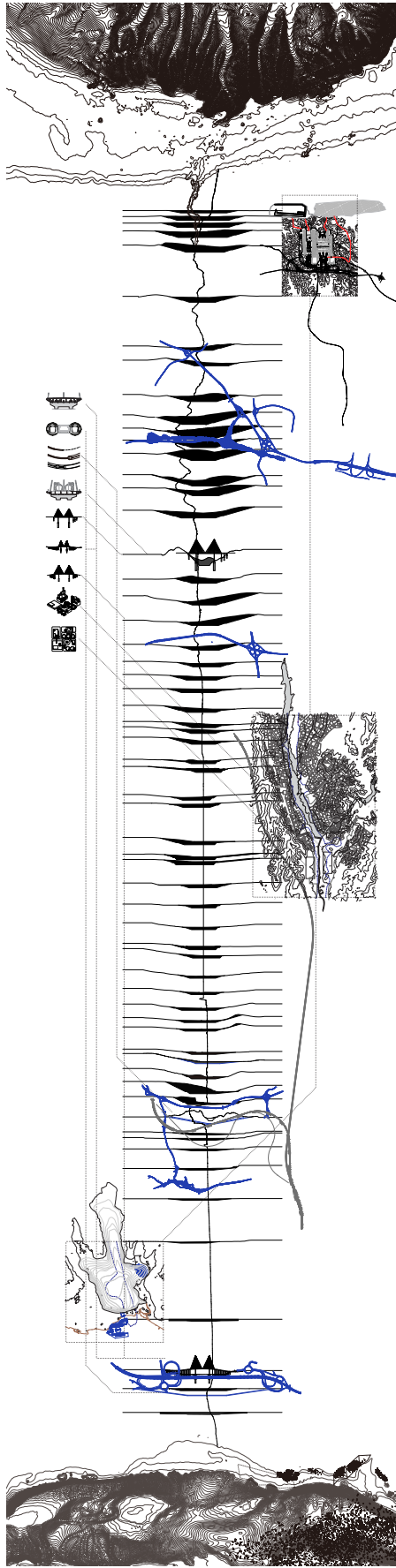


Image 9: Draft from the experimental phase mapping, created on 12/10/2022

VI - Mapping Agency

James Corner calls for a certain ‘Agency’ of mapping. He argues that “Mappings construct ‘planes of consistency’ that present analytical information while also allowing for suggestive readings/projections. They ‘draw out’ of common maps and landscapes, certain figural and processual relationships that might occasion new landscapes.” (Corner, 1999). The actual construction of the map becomes in itself a critical narrative agent, as it is built in a way that puts forth territorial transformations. Static space is then rendered critical space as a consequence of systems and territorial implications, manifested in the definition of the aforementioned constructed map.

Here, we shall reflect on specific elements represented in the culminating map and demonstrate their reasoning and position, especially in relation to the previous developed chapters in the research plan. As such, we shall understand the represented compositional elements as an amalgamation of different systems, definitions, interpretations, understandings relating to the site, and experimentation within the Territory. As previously mentioned, we have decided to consider the case of the Kanal Istanbul, a major infrastructural element that will be introduced as a new bypass, a connection between the Marmara Sea and the Black Sea. As an abstraction of this hypothetical future condition, we choose to represent the eventual canal as a series of 71 transversal sections running through the new ‘borders’ of the canal, shaping both the new urban, geographic, and territorial condition between the two seas. This enables a sharper and more direct correlation between the proposed water body and the different systems at play that intersect with the object at specific instances. As such, specific sections shape and relate to specific Infrastructural networks, making clear their interconnectedness and, more importantly, their effect on the Territory.

‘Object’ (the canal, infrastructure, and their subsequent systems) and ‘Subject’ (Territorial transformations, oligoptica, and new morphological conditions) are then in conversation. The deliberate decision to solely represent parts of certain networks (and the employment of specific frames to achieve that effect) highlights the oligoptic nature of the represented systems. While they are separate entities, they enable the outlook and observation of the whole, providing a specific lens through which we observe site conditions. By placing the different objects in their respective zones (which is here the space between, around, or intersecting the 71 sections), we shape the transient Infrastructural Landscape. Deleuze and Guattari make

clear fundamental distinctions between ‘maps’ and ‘tracings’. Following their definition, we can understand the nature of mapping, as James Corner describes it, as an entity that “affords many diverse entryways, exits and ‘lines of flight’, each of which allows for a plurality of readings, uses and effects.” (Corner, 1999). Henceforth, the map ‘has no object’. “As an assemblage [it] has only itself, in connection with other assemblages and in relation to other bodies without organs.” (Corner, 1999). We can further understand the point Deleuze and Guattari try to make: “We will never ask what a book means, as signifier or signified; we will not look for anything to understand in it. We will ask what it functions with, in connection with what other things it does or doesn’t transmit intensities, in which other multiplicities its own are inserted and metamorphosed, and with what other bodies it makes its own converge” (Deleuze and Guattari, 1984). The map is then an entity that is composed of the many systems and components that render it a whole.

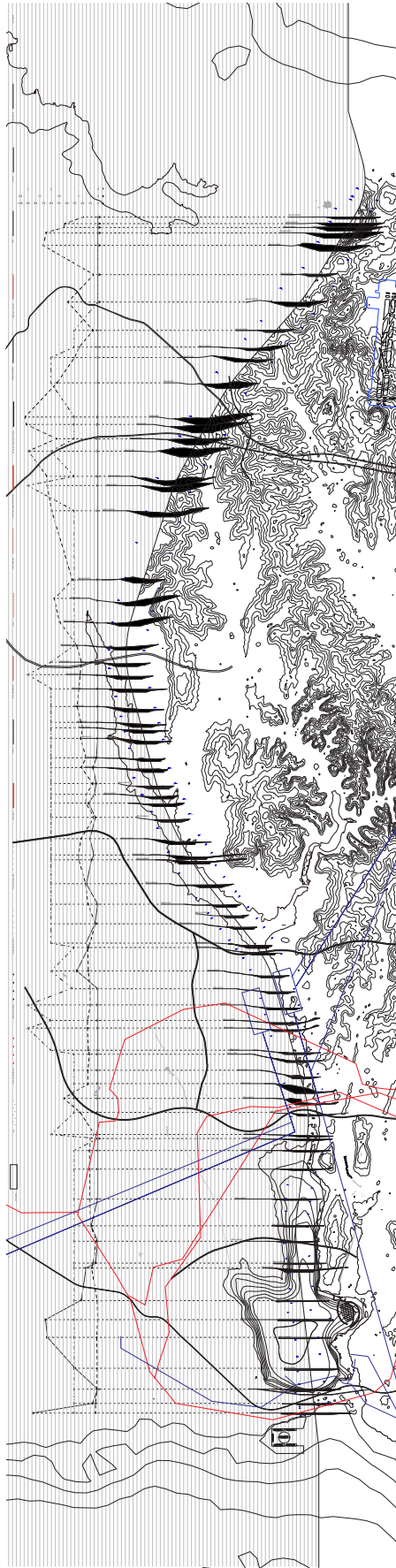


Image 10: Draft from the experimental phase mapping, created on 19/10/2022, please note this the final version of the map on the date of submitting the Research Plan. The actual final map will be submitted after the submission date of the Research Plan.

VII - Conclusion

Taking conceptual framework and methodologies as guidance in the process of investigating the research area collectively, mapping worked as an exercise for us to spatialize the theory in the concrete environmental context. As an agent, it helped us to organize and compare the specific territorial transformations engendered by infrastructural systems. Inducing controversial disputes, the Istanbul Canal frames the territory new and filters the existing infrastructural systems that we intend to investigate. Additionally, from our collective research into the sea of Marmara and the sites of the canal taking up, initial individual research areas and topics are introduced.

The 'object/subject' relationship between Infrastructure and the Territory is emergent through the translation of the data pertaining to the construction of the Istanbul canal into three different representational techniques: plan (topography, water bodies, infrastructural systems), sections (excavated soil and water) and graph. The graph illustrates the amount of excavated soil, affected water and interrupted infrastructural systems for the chosen 85 section cuts. Thus, attached to the geographical situation of the infrastructures, the inner connection and difference of the data themselves are conveyed in the map. Interpreting the graph, it stands out that the effects vary along the course of the canal. As an outcome we see the extent of impact recognized from the construction on the map, this leads to the debate if the proposed project incorporating their impacts is realistic after all.

As an investment project, the canal would on one hand destroy natural resources and existing infrastructure projects, while on the other hand there are also other voices stating that it has the potential to improve the quality of settlements, enhance the economy and solve the congestion in the Bosphorus. Our position is not to judge the project. Instead, we take it as a connection between the present situation and the prediction of the future of the research areas. Through the act of mapping, we were able to uncover socio-spatial implications that are related to a major infrastructural project.

Reflecting on the process, we can establish that the itinerary of the conception of the map underwent various considerable changes. This specific work process that was determined by experimentation helped us to understand the graphical representation as an operative tool in our thought process. However, the constant changes can be also considered as critical, as they did not allow us to reveal the full potentialities of the representational techniques at hand.

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IX - List of images

Image 1: Reference An Istanbul miniature, 1533 by Matrakçı Nasuh	5
Image 2: Collection of examples from the experimental phase mapping	10
Image 3: Drafts for the collective map, produced on 21/09/2022	11
Image 4: Draft from the experimental phase mapping, created on 05/10/2022	12
Image 5: Reference, Dutch Parliament extension by OMA	13
Image 7: Reference, Tertium Dufur, 1988 by Gianfranco Baruchello	13
Image 6: Reference, Agricola Cornelia -2, 1978 by Baruchello	13
Image 8: Reference, fast twitch-site plan, 2004 by Kulper	13
Image 9: Draft from the experimental phase mapping, created on 12/10/2022	14
Image 10: Draft from the experimental phase mapping, created on 19/10/2022,	16

X - Diagram of the Research Structure

