

Towards a critical delineation of waterfront: Aerial photographs as evidence and record in Istanbul

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Abstract

This paper develops a conceptual agenda and a critical cartographic methodology using aerial photographs to monitor the shaping of waterfront as a geography in Istanbul by humans. Starting from the first aerial photographs of Istanbul until present, the gaze of the vertical dimension in geographical space holds divergent evidences of spatial transformation captured in aerial views. From construction sites to building of coastal roads, demolishing of port scapes and technological rifts of logistic flows, to large infills in longshore space; events and moments of spatial deformation of coastal space become visible and evident through aerial photography. Aerial gaze, when considered within an archeology of a developing military reconnaissance technology, is presented as an ironic tool to shed light to evidences and historical record of spatial transformation within an act of witnessing. Viewing coastal unfixity through aerial photographs are argued here to provide two different temporalities: *longue* and *court durée* which operate in the eventual and geological time. As these photographs unveil, the material - geological body of the waterfront itself becomes the bearer of historical records of human and nonhuman relations that shape the coastal geography. The ground beneath is unfixed as it is pulled into a cartographic questioning tool of “critical delineation” of Istanbul’s waterfront. In the end, the waterfront is re-conceptualized and monitored as a dynamic geography. With this gaze, this paper suggests a debunking of oppositions of land and sea space to reframe the waterfront as an urban edge in the process of urbanization.



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Keywords

Waterfront, Aerial photography, Critical cartography, Critique of urbanization.

1. Introduction

In the past hundred years of lifespan, the evolution of Istanbul from being a city with a port at its center to a megapolis, followed a spatial expansion and an increase in the scale and pace of urban transformations (Güvenç, 2017; Keyder, 2013). The process of urbanization is mapped as a phenomenon belonging to the terrestrial growth and the shaping of the coast resides in the narratives of history or urban transformation. Within the flood of literature on Istanbul as a city surrounded by waters; the inherent geographical uniqueness of the shoreline was best described as the uniqueness of its geography of a “long strait, a narrow gulf, and an enclosed sea” which it recognized at first sight in maps (Calvino, 2013). The phenomenon waterfront as an edge to the surrounding water bodies is often studied inherently as a place of development and spread of capitalism, via trade, globalization and the networked spaces (Meyer, 1999; Desfor & Laidley, 2011; Güvenç, 2016). In the increased need of reframing human imprint in the context of urbanization it becomes more urgent to put the human question in the alterations of urban space. Is there another way to render waterfront? To what extent can waterfront be re-read as urban edge?

In 21st century, Henri Lefebvre's works have been inspirational for re-reading the urbanization processes. And his term of “planetary space” has been a departure point for re-defining waterfront as urban edge (Lefebvre, 1991[1974]). In this context, the urban edge as a material and cartographic fold can be also read referring to Gilles Deleuze (2006); in this regard, an element of the geological time and the impact of human imprint on earth is developed further by Manuel DeLanda (2000). A recent discussion of the intrusion of the question over human and nonhuman ontology by Bruno Latour (1993, 2004, 2005) has paved way to set up new relations between land-sea, humans and non-humans on waterfront as an edge. In the light of recent studies, the coastal space calls for a broader temporality to understand the relation of humans

with the planet. In that respect the role of aerial photography is discussed with a new temporal framework that is surfaced within the aerial gaze looking at transformation through photographs. Conceptually this new gaze is depicted with the temporal concepts of the *longue dureé* and the *court dureé* as coined by Fernand Braudel (1996).

With this theoretical framework, this paper initiates a quest for the waterfront rendered as a human shaped geography in planetary space and it frames the representational foundations by the engagement of the images of urban transformation, aerial photographs, in particular. The paper argues that the images of aerial photographs can be used as a critical tool not only to visualize and to document the urban transformation, but also to grasp the city and develop a critique for radical urban transformation. In other words, photographs can play a critical role in the production of urban visual culture and have impact on theorizing the urban representations. Re-thinking the coastline as a space, the paper offers an alternative way to follow traces of urbanization in Istanbul, in particular. The representation of rapid urban transformation of Istanbul's waterfront through aerial photographs depicts the critical role of airborne viewing. This paper, based on the representation of urban space by aerial photographs focuses on how the coastal space was transformed and was unfixed despite it is often delineated and mapped as a fixed line. An alternative way can unveil the urban transformation of the coastal space beyond the conventional mapping techniques, and challenge the way we have grasped the built environment. In other words, aerial photography can be seen as a new narrative to tell the story of coastal change in the processes of urbanization. As this paper presents, delineation is a hybrid cartographic-conceptual methodology that represents the shaping and re-shaping of Istanbul's waterfront by human imprint.

The paper first depicts the waterfront as a human shaped urban edge and draws a brief conceptual background. Secondly, it gives a methodological

framework for the precedent use of the aerial photography and its potential adaptations to urban studies. It evaluates the potential function of aerial surveillance as evidence to discover historical record in viewing urban transformations in Istanbul, in particular. Thirdly, it explores the spatial stories of elevating from the ground in Istanbul starting from the first aerial photographs of Istanbul shot in early twentieth century until present satellite imagery by covering a span of the historical generation and evolution of airborne photograph technologies. It reads photographs of waterfront under construction and looks at spatial transformations to reframe coastline as geographical and material phenomenon of the historical record. Finally, evaluating the presented conceptual and cartographic roots, it presents a cartographic methodology that uses the drawing of coastlines of waterfront by using aerial photographs in order to derive conclusions to what the study aims towards a critical delineation of waterfront.

This tentative research can give a broader understanding of the role of aerial photography in grasping the urban transformation in Istanbul, and in general.

2. Waterfront as a human shaped urban edge in the context of planetary space

Before going into the main arguments of the discussed roles of representations of urbanization at the context of waterfront through aerial photographs, a potential theoretical discussion is briefly presented by introducing the concept of “planetary space” (Lefebvre, 2003[1970]) and its potential contextualization to the act of “humans” shaping urban space. Afterwards, the representations of waterfront through aerial photographs are going to be discussed as a methodology to monitor processes urbanization. Aiming to arrive finally, at a possible question of what role can spatial representations of urbanization have in order to link the theoretical framework of Lefebvre’s planetary space in the context of waterfront.

Starting with a cartographic

rendering, the coastlines marking the waterfront, coastlines can be considered as dynamic lines of growth between land and the sea, and can illustrate material formation in the matter of space as a planetary phenomenon. The line splitting the land and sea as a cartographic tool, can become a visual tool to perceive, document and grasp the un-ending transformation, in other words unfixity of waterfront in the context of planetary space and urbanization.

The unending transformation, in other words unfixity of waterfront in the context of planetary urbanization” – as pronounced by Henri Lefebvre (2003 [1970]) has been inspirational for further studies. With the term of planetary urbanization, Lefebvre develops a holistic understanding vis-à-vis global urban developments, and depicts the radical urban developments and transformation in macro-scale. (Brenner & Elden, 2009; Lefebvre, 2003[1970]). With planetary urbanization, Lefebvre develops a holistic understanding vis-à-vis global urban developments, and depicts the radical urban developments and transformation in macro-scale. In the context of the “planetary urbanization”, the society’s complete urbanization pushes the boundary of the urban to unprecedented geographies over the planet from remote to densely urbanized areas (Lefebvre, 2003[1970]). This generates spatial tensions of endlessness and questions concerning what is urban on the planet require further attention in the field of “critique of urbanization” (Brenner, 2014, 2016).

As a matter of fact, Lefebvre has been the first to see space as both; as at once the ‘medium and outcome’ of social life (Lefebvre, 1991[1974]). In other words, for Lefebvre, “space was produced socially as social reality was heavily influenced by spatial relations” as depicted by Hilde Heynen (2013). In Lefebvre’s formulation, “the production of space” did not simply point at a physical production; but included a multiplicity of physical and non-physical layers - including everyday practices and lived experiences. In this regard, the built environment was

far from being an end product. It was continuously re-produced in everyday life; through each particular use, experience or remembrance. Spatial production included images, dreams, memories, mentalities and ideologies. And, its representation expects a new challenge. And, the coastal line is an axis in un-ending experience between land-sea and humans and living beings.

In this regard, geographical boundaries have exceeded what was drawn on the map; the urban transformation plays an important role beyond the conventional representation techniques, and redefines the boundaries between land and sea. Researchers (Lefebvre, 2006; Virilio, 1984; Grosz, 2001) indicate how the borders have been shaped and reshaped in the everyday life as well as the alternative what have challenged the urban context. The space, which doesn't have own boundaries, receives and takes on the form of the outside – as depicted by Grosz: The in-between space is not only a space externally bound, where the relationships between fixed identities and entities are conceived, but also the space of movement, development and becoming (Grosz, 2001; s.91, 93). In this regard, Brian Massumi states that borders are generated in the transition. Only in the relationship with the other, the border goes beyond being immobility and static. Massumi underscores that “boundaries are only produced in the process of passage: boundaries do not so much define the routes of passage; it is movement that defines and constitutes boundaries” (Grosz, 2001; p.65). In this regard, Heynen claims that “a mutual relation is created between the new concept of space and a social reality that is also characterized by interpenetration in many areas” (Heynen, 2011, p.54). The coastal border / edge has been shaped and re-shaped by overlapping of different borders in time.

Beyond the theoretical overlook of spatial theories of urban edge, the shaping of waterfront calls for a closer look to role of humans in relation to the so called nature or planet. For a broader discussion, on a possible translation of “planetary space” into a human-shaped

geography, this paper underlines that the theoretical confrontations of urban and nature calls for a debunking of oppositions among humans and geography. As a different theoretical basis, suggestions of nature-culture continuums blur the borders between urban and non-urban, going beyond thinking of humans in isolation from all nonhuman others (Latour, 1993, 2004, 2005). Bruno Latour critically rethinks about the relations between nature and the built environment, and his positioning paves way for a critical discussion in the field of urbanization and its representation. In the macro scale, his new conceptualization for geological space and its formation in time brings together both the urban form and the nonlinear time are fold and unfold them together. The transformation of the coastal contours can be re-read with a nonlinear historiography focusing on the scale and the pace. This new reading can bring together “nonlinear” time and history – which is geological and elemental for grasping of time concept for humans (DeLanda, 2000).

The changing of the geography of waterfront can be also viewed as a political-economic basis. In this regard, it is important to remind the term “spatial fix” – as depicted by David Harvey (1996). The term is used to coin the stability that structures of transportation and mobility (ports, airports, railway stations, etc.) which needed fixations in urban geography to become infrastructures that perpetually demolish the previous structures (Harvey, 1996). Waterfront is inherently a place of development and spread of capitalism, via trade, globalization and the networked spaces. This positions waterfront as an urban edge under the dynamics of the spatial fix of geography, paradoxically creating an unfixity of the physical space as defined in this paper through perpetual demolishing and construction of coastal interfaces. The examples of the never ending waterfront developments, re-appropriation of port areas, transformation of industrial sites along the waterfront of other metropolises of the world draws a similar scenery of coastal dynamics of transforming

waterfronts. As a delineation, the paradox of spatial fix and material unfixity is discussed along the geography of Istanbul, in particular, with its own cases of transformation.

In the light of theoretical framework on the urban edge, aerial photographs depict the urban identity, urban experience via common notions, but also challenge common notions of our urban existence. Against the linear, conventional map making techniques, aerial photography is an important axis in the urban representation – which welcomes us to re-think about our city and her daily life. What makes the aerial photographs important is its potential to depict our urban experience as well as they question the given identities and re-shape the metaphors and narratives on urban living. In this regard, their new urban representation not only challenges our common notions but also it powerfully unveils dynamics and potentials of the city.

The city of Istanbul has been re-shaped by the emergence of social and economic developments, tensions stemming from the contact with contrasting interpenetration of lifestyles consumption patterns, a new city region with a new urban society, a new built environment with a new social geography, and new local identities (Güvenç, 2017). Its coastal urban edge exemplifies the radical transformation, in particular. In order to understand and grasp the long term urban transformation in a mega-polis, it is urgently necessary to develop a historiographical look and a new way of representation based on the above-mentioned theoretical framework. In this regard, this paper focuses on the aerial photography representing the

urban evolution and change in the city.

Delineation of the coastlines, as the presented methodology of this paper follows aerial photographs as evidences of spatial transformation that yields an open ended cartography of the waterfront transformation in “*longue dureé*” (Braudel, 1996). Within the *longue dureé* temporality, it is important to recall that the passing of time can become visible through monitoring the urban space. As “urban forms tend to change very slowly” and daily rhythms give the impact to them; while it is an “act of design” when this urban form “witnesses historical accelerations” in its slow pace (DeLanda, 2006). As a result, the delineation of coastlines is a spatial tool to view the speed of transformation of waterfront.

The cartography of delineation follows an open ended questioning of how the coastal space has deformed. In the words of Deleuze (2006), the delineation is linked to the concept of “fold” which is linked to the materiality of things, the cartography of things and the textuality of things. In his words, matter and fold are intertwined in the “folds of the earth” and in the “pleats of matter” as they become multiple expressions of thought and cartographic folding. In this regard, the intertwined qualities among lines and geography ties the fold together. With this filter the presented methodology towards a delineation of waterfront, becomes a cartographic practice to follow the folds of coastline in actual space through lines and texts. Eventually bringing a holistic ontology among the representations and material physicality of the coastal edge.

Consequently, the waterfront as an unfixed urban edge crucially demands to become a place of inquiry, as an

¹ The idea of “Critical Delineation” of waterfront has been conceptualized as a methodology in the doctoral thesis “This is not a line: Transformation of the Waterfront in Istanbul” (Erkiliç, 2019).

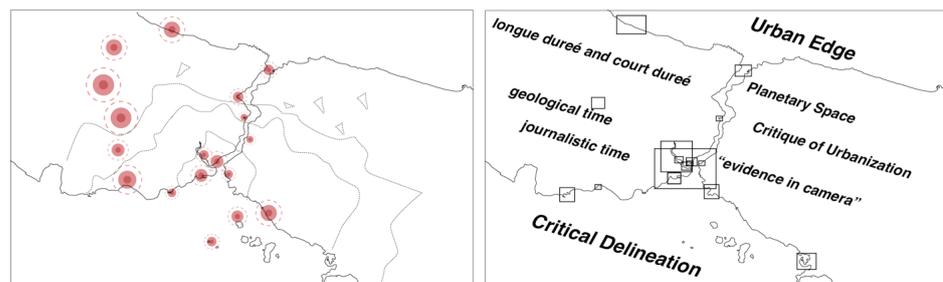


Figure 1. Conceptual graphics for mapping controversies of waterfront in Istanbul (Graphic by the author).

urban edge in the context of “endless urbanization” and the “critique of urbanization” (Harvey, 2014; Brenner 2016). For Harvey, the urban is not an end product but a process (Op. cit.). Inherently, for finding positions to confront urbanization and its crises, embracing criticality demands to be discussed further in textual, cartographic and actual dimensions of space. In that respect, critique of urbanization stands as a foundational theoretical context to search the boundaries of the urban and nature revealing the human imprint shaping the urban edge. By this foundation, this paper calls to position waterfront as an urban edge that is unfixed and critical in the process of urbanization - as the proposed methodology is critical delineation.¹

3. Seeing through aerial photographs: A historical framework

Aerial photography as a challenging representation tool unveils a new understanding of the relations between land and sea, in other words, a tool to grasp the spatial formation of the urban edge. Aerial images can be conceived as historical evidences to the evolution of waterfront. Within this approach, the images provided by aerial photographs are rendered in a way Ulus Baker would call an “image that generates opinions” (Baker, 2016) and open way to consider images as the driving force in generating inquiries and questions. The position of aerial images beyond the documentation of research, allows a discussion of a shared ontology with the viewer and generator of these images. For the study of urbanization, the paper argues that images become potent agents, at least, as important as textual narratives. Monitoring the waterfront transformations initiates a research from the world of images, and generates questions equally digested in the theoretical conversations of urban transformation. Briefly, aerial photographs have become driving agents of the practice of the research.

The use of aerial photography, as a vertical dimension, allows a gaze oriented to both land and water. One of the possible ways is to look at these photographs and follow the coastline

changes. Aerial surveillance of cities was a technology initially developed for military reconnaissance. They were linked to “practices of memory and forgetting”, as tools of collective memory, as well as tools of surveillance and exploration in military context (Deriu, 2006, 2007). Further, with the advance and diffusion of technology, satellite images were opened to public access by worldwide map companies like Google Earth. Meanwhile the evolution of GIS in public use turned satellite images into a source to read geographic zones and war geographies with public access (Kurgan, 2013). Aerial photographs have started to be used to monitor the shifting climatic zones and boundaries. In case of socio-political conflicts, aerial imaging witnessed a spatial change of the borders that demarcated climatic zones or state territories (Weizman and Sheikh, 2015). Recently, aerial photographs are used in critical media studies regarding landscapes of memory. The media studies methodologically alter material and digital realms -brought by aerial surveillance of military functions (Schuppli, 2017). They provide photographic evidences of warscapes to provide evidences for the cases which short-comings of international judicial institutions (Weizman, 2018). The militarized intensity towards aerial view uses tools of geospatial monitoring to monitor humans, like immigrants crossing borders (Weizman and Sheikh, 2015).

Paradoxically, high resolution photographs are adapted to corporate with utilitarian functions like efficient engineering and planning of construction sites. For engineering or urban design purposes, private companies provide high-resolution photographs of private properties for betterment of work-flows. Drones fly over development projects for the commercial use of the images as promotion and advertisement of development projects.

Delving into depth of aerial surveillance history brings up new terminologies that can be re-evaluated in the monitoring urban transformations by the public eye. As a term, “Evidence in Camera” was

the name of the periodical magazine published during the World War II by air military intelligence in England (Deriu, 2007). In the magazine, European cities, neighborhoods and industrial sites were viewed before and after bombing. Its circulation was limited to military circles and some images were used in public newspapers as war propaganda. For Deriu, aerial images often are regarded as abstract, artificial and detached tools of space which fall short in triggering an ethical response of the act of “bearing witness” yet they also have potential of making historical record. The aerial images of ruinscapes became witnesses to historical traumatic moments of “mass ruination” (Deriu, 2007). The distance of the aerial photograph was a work of “disembodied gaze that normalized the scale of devastation by its distancing from the ground”. It is important to note that these photographs were agents of ethical response to the act of bearing witness to war but they were also concealed from the public eye.

This is why, departing from evidence in camera, the use of aerial imagery directs the dimension of time in reverse. In camera (gizli celse as used in Turkish), is a term used in law to indicate that the cases are closed to the public. It is used for the trials held in private chambers without participation. Therefore, in a city where spatial transformation is obscured, operational decision making processes are distanced from the public participation, construction sites are hidden behind walls and panels, would it be assertive to say that the transformation of urban space is actually held in camera?

Even though the spatial urban transformations of Istanbul are not comparable by the devastation of any ruination of war scapes, they are spatial witnesses to social, political and environmental impacts of projects altering the urban geography. When pulled back into the realm of collective memory and of the urban space, Istanbul’s heritage of aerial photographs can open ways to look at history not as a long gone nostalgia, but as a way of critically positioning the present practices of urbanization.

The photographs warp time in a nonlinear manner. The aerial images provide possibilities for a processing of responsibility that transfers through being witness to something or being part of it. This is a point of departure to reframe *evidence in camera* in the context of urban transformation. Despite the militarist technology, the urban transformation of Istanbul calls for a depiction under the themes of spatial witnessing and evidence.

The use of aerial photograph is founded on its immense role in urban planning and operations of urban demolishing. These photographs, visualizing Istanbul from the mid-1930s and end of the 1950s, represent the radical transformation in the coastal line in the urban center. The first master plan of the city projected by Henri Prost in 1937 actually was based on a year-long study on aerial photographs taken by the Turkish military (Akpınar, 2003). The photographs were not only a documentation, but also a direct design tool in the development of urban proposals in Istanbul.

Following massive urban demolitions of approximately 7,300 buildings in mid-1950s and the construction of a network of large boulevards, in the waterfront in particular, the very same photographs had become an eye-witness for the radical urban transformation and public memory. They unveil the loss of urban and architectural heritage (more than 1300 Ottoman registered buildings were demolished) (Duranay, 1960; (Akpınar, 2003,2014,2017).

In Istanbul, the aerial photographs were the spatial witnesses and evidence for the ad-hoc urban transformation of Istanbul in mid-1950s. Photographs not only visualize the radical change, but also an archival material to re-read the massive urban demolitions under the Premiership of Adnan Menderes between 1956 and 1959 and to develop a critique for the decade. Today, the aerial photographs of radical urban changes are seen from bird’s eye view over the construction sites along the coasts. The construction in Galata Port, Haydarpaşa, Kabataş, Kadıköy, Üsküdar, Yanıkapı, and the periphery, which will be monitored in the

following section.

4. Elevating from ground in Istanbul

Elevating from ground refers to a temporal and spatial mobilization. The temporal frameworks look at the transformation process through aerial photographs and introduce different scales of temporal conceptions. The mobilization in the space allows to see space from above as it floats by the viewer's eye. A panorama of the aerial photographs in Istanbul starting from the first flights in the beginning of the century until present time gives a spatio-temporal voyage. Looking at the coastal evolution through aerial photograph holds a twofold temporality -as underlined in this study. These concepts are found in the works of Fernand Braudel (1996) as the *longue dureé* and the *court dureé*. The *longue dureé* refers to a longer period of time, decades, centuries or millenniums that oscillate in a geological time or ecological lifecycle. It was coined as a conceptual and methodological approach that he used as a critique relating to historical evolutions which were in his view, could alter historical writing that focused solely on "great historical events and conquerors" (Op. cit.). Historical evolution required longer periods of investigation, in long duration, generating an evolutionary tempo. The condition of the *court dureé* - short duration - on the other hand refers to an event or a moment of daily life that renders it with a "journalistic gaze" that captures the event (Op.cit.). This corresponds to everyday "in the blink of an eye" moments as a journalist would capture during an event. In this context, aerial photographs can be seen as agents that give historical evidences in both of these contrasting timeframes.

In Istanbul, the first airborne photographs were taken via hot air balloon and zeppelin companies, which promoted military air vessels to Ottoman army in the turn of 20th century. In 1785, the first balloon that took off from Topkapı landed in Bursa.² Istanbul's panoramas previously taken from the Galata tower that were approximately 110m above sea level had not offered detailed

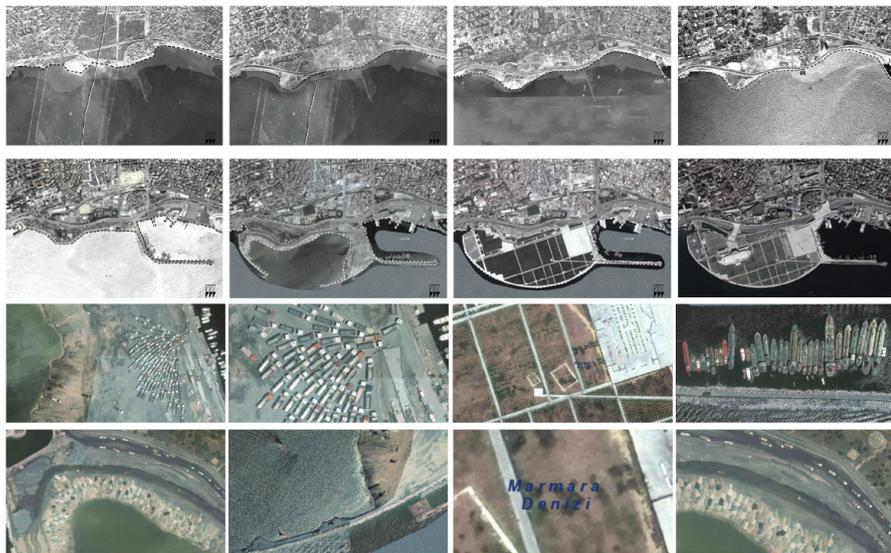
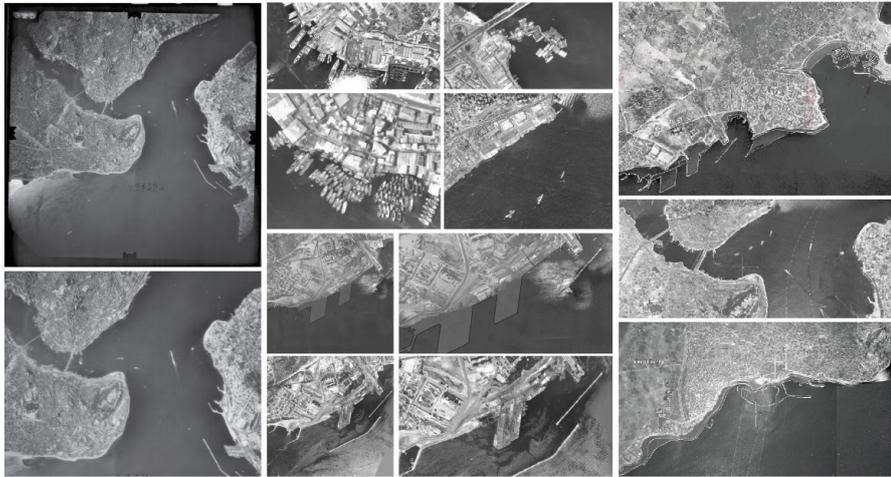
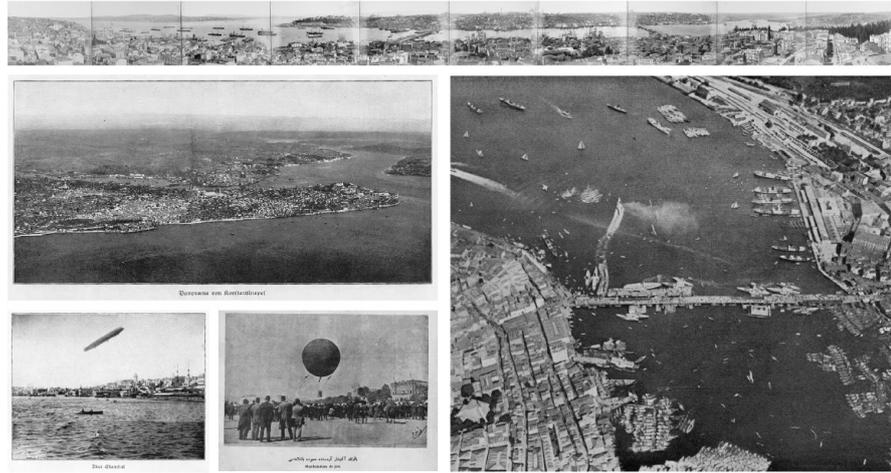
measures close to the ones from the hot air balloon and from the zeppelin. In the summer of 1909 several zeppelin flights took off from Taksim square.³ Photos taken from balloon or zeppelin offered vantage points no other tower or minaret could give until that time. It was the first time to see the city not from within but from its outside, up and above.

The photograph viewing the city from above the Marmara Sea towards the north was one of the first photographs to see the historical peninsula and its surrounding seas, the strait and the estuary by their all extents with eye. Captured frame was different from earlier panoramas, it imaged the city with its periphery, the city where it ends with its hinterland. With the strait towards the North, opening to the Black sea to the north, Istanbul seemed humbler and smaller within hills and geography (Figure 2).

Another flight was on March 19, 1918, a German zeppelin took off from Yesilköy and flew over strategic military sites along the coast.⁴ Over historical peninsula's monuments, Golden Horn shipyards, Ports of Galata and Haydarpaşa, İstinye and Tarabya Bay in Bosphorus where military shipyards and other military sites along its way were viewed.⁵ A shot from that zeppelin viewed the port at the mouth of the Golden Horn, Galata Bridge and the Quays of Galata and Sirkeci that were built a decade ago. The maritime space appeared busy with floating vessels, barges, *kayıklar*, sailboats, steamboats, vaporetos and cargo ships. And another shot was taken from a sailing ship showing the zeppelin flying in the sky over Istanbul as Galata tower and the port of Galata marked the edges of the silhouette on ground. For the first time in history, these aerial photographs had unveiled a new way of seeing the imperial capital. Started as military use, the zeppelin flights turned into touristic voyages in the 1930s⁶. Along the century, aircrafts flew over the city to shoot the urban landscape for planning and municipal purposes. Airborne photographs belonging to the years of 1946, 1966, 1970 and 1982 were taken from aircrafts. They were geo-coordinated to

² A brief history of hot air balloon aviation history in Istanbul can be found in the link: <http://www.airkule.com/yazar/balonculuk-tarihcemiz/338/>

³ One of the first published aerial photographs of Istanbul in a German journal *Rundblickaufahme von Konstantinopel & Bosphorus, Kaiserlich Osmanichen Ballonzug* can be found in the link: <http://www.hayalleme.com/istanbulun-havadan-cekilen-ilk-fotografлари/>



⁴ Op. cit.

⁵ This information is found in link: <http://www.hayalleme.com/istanbulun-havadan-cekilen-ilk-fotografлари/>. These were published in *Rundblickaufahme von Konstantinopel & Bosphorus, Kaiserlich Osmanischen Ballonzug 3.*

⁶ Military use of Zeppelins In 1930 zeppelin flights became more common for touristic voyages Yunus Nadi's "49 hours in air with Graf Zeppelin" (49 saat Graf Zeppelin ile havada). He narrated a voyage from Berlin across Europe towards Balkans. A prospective use of the zeppelin along with a prospective idea of other flights connecting Anatolian cities and Istanbul, which were never realized with the zeppelin.

Figure 2. Aerial photographs of Istanbul as monitored and montaged in this study (See endnote*).

planimetric photographs that are open to public access by the municipality.⁷ These aerial photographs appeared on web as maps, which are generated distorted shots from space, different from the airborne photographs with depth giving more distant gaze to the eye. Rather they are flattened as if they are satellite images with infinite perspectives (Figure 2).

High vertical image of the satellite view differs from an airborne photographic shot from an airplane; and from a shot from a zeppelin, and the panoramic shot from the tower. What these photographs make apparent clearly is the changing of the coastline in time. They play an important role in the visualization of urban transformation in Istanbul.

The aerial photographs give evidence to a large number of such moments when viewed with different levels of detail and scales. Close up views reveal more for the human scale and ongoing everyday life at the coast. These shots give moments of coastal structures under construction when looked at close range. They embed a sense of motion in themselves; the motion of the growing land space. One bears evidence to the moment when machines leveled the new coastal road from Üsküdar to Harem in 1990; another when the coastal parks were greened out of newly reclaimed land in Kumkapı. The moment when the second loading deck of Haydarpaşa was constructed for the new containers of the port in 1970 or when a swimmer jumped into the waters of Bosphorus in Tarabya from a newly expanded coastal deck or the car park at Sarayburnu at the entrance of the Strait in 1990 (Figure 2).⁸

In 2012, newspapers announced a 300-hectar new meeting area to be constructed on the coasts of Yenikapı by infilling waters of Marmara. The bean shaped infill was almost complete in less than two years of time at the southern shores of the historical peninsula. Satellite image showed the landfill that was under construction in the year of 2013, the moment when the construction trucks lined up, the moment that the excavation fill was poured into water. This aerial

photograph was the first when the public gaze over this project was visible (Figure 2).

The construction photographs that would be impossible to detect, see or fully cover by looking at it from the land, appeared (rendered visible) in the satellite photographs. The flat landfill occupied a place that cannot be seen or experienced from the everyday gaze. The growth of land towards the sea as horizontal dimension could only become visible by a gaze from above.

Aerial images, deliver a different message when the coastlines are delineated and juxtaposed. Delineation comes closer to the longer duration of geological time and unveils the unfixed geography of the waterfront of the land that once belonged to the sea space. It is equally important that the coastline has remained almost fixed at some parts. in this view following the coastlines. When observed at this scale, the coasts of the core maritime space belonging to Galata, Sarayburnu, and Üsküdar differ from those of Haydarpaşa and Yenikapı. Quays of Salıpazarı in Galata Harbor are presently under construction for the renovation of the cruise ship terminal and the coastal docks are being extended for new projects. Everyday encounters with waterfront already embody the daily rhythms of spatial deformations. Where these delineations fall too abstract, the unfixity is viewed in the close up views of the coastal landscape.

Cartographic delineation gives a longue durée view of the coastline dynamics. Aerial photographs are juxtaposed in historical layers and the coastlines are delineated as outlines of land and sea split, displaying how the coastline is appropriated. The coastline no longer refers to a fixity as for the case of metropolises in other coastal geographies of the world. Yet each act of coastal organization bears a grounded agency of its unique geography.

5. Drawing coastlines to monitor the process of urbanization

To bring the ends together, some positions can be depicted as an amalgam of the role of images with a theorization of urban transformation by following the “maps contouring

⁷ For aerial photographs by Istanbul Metropolitan Municipality: <https://sehirharitasi.ibb.gov.tr>.

⁸ The aerial photographs mentioned in this paper are from various online and archival sources as listed below. The “Panorama of Constantinople” by photographer Basile Kargopoulo, 1826-1886. (Wikimedia Commons); Panoramic view from Galata Tower and first Aerial photographs of Istanbul Aerial view of İstanbul From the sky over Marmara Sea, 1918.; Zeppelin over Istanbul, with Galata Tower, 1918. Deformation of the coastlines 1946, 1966, 1970 1982, 2017 between Galata, Sarayburnu, Üsküdar, Salacak; Haydarpaşa Limanı, Haydarpaşa Garı, Kadıköy, Moda; Zeytinburnu, Kazlıçeşme, Yenikapı, Kumkapı of the Historical Peninsula. (Aerial photo source IBB, delineations by the author) Satellite images Google Earth and Maps of Istanbul Metropolitan Municipality give most accessible top views for the years after 2000's.

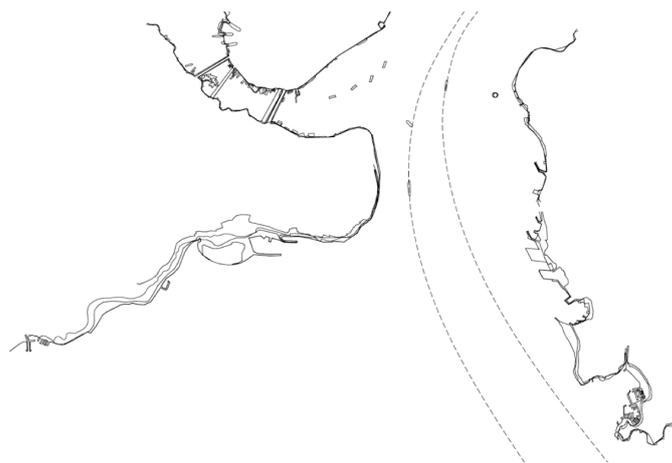


Figure 3. Juxtaposition of delineated coastlines of waterfront 1946-2017 (Graphic by the author).

the coastline” (Erkılıç & Akpınar, 2017). The changing of the coastal contour bears the evidences from the aerial photographs - as a shaping and reshaping process. Which in each operation is an engagement of humans with the nonhumans as a re-negotiation of spatial transformation. In this stance, it is possible to mark a translation of planetary space into a human-shaped geography, as the theoretical confrontations of urban and nature calls for a debunking of oppositions among humans and geography. By reviewing a possible translation of planetary space into a human-shaped geography, the theoretical confrontations of urban and nature calls for a debunking of oppositions among humans and geography. Aerial photographs bear evidence to monitor the shaping of the coastal space in Istanbul in the past century. When monitored in an expanded lifespan, developments (construction of infills, coastal reclamations, infrastructural installments, building of ports, coastal roads, transformation projects, marinas, car parks, bridges, tunnels, parks and demolishing of buildings) are all present in their gaze. Urbanization of Istanbul by its cartographies potentially alter the way we have conceived the world we live in as well as they alter our critical positioning towards urban developments. In this regard, photographs can be critical representational tools to question the transformations of the urban space.

The aerial photographs are beyond

simple representations of the city. They have become important archival material to represent the urban transformation of Istanbul. In this regard, the coastal evolution and change can be peeled off from the aerial photograph as archival records of history. In other words, aerial photographs are agents witnessing these changing lines where the land and sea materially become a record of history.

6. Concluding remarks: Towards a critical delineation of waterfront

Drawing coastlines to monitor the process of urbanization, in fact, paves way for a critical delineation of waterfront. With perpetual appearance of different photographs animated in time-space of the changing coastlines, the aerial photograph becomes an open-ended machine of generating questions. As the images decipher, waterfronts are heterogeneous coming together of material flows, displacements, constructions, demolitions, infills, excavations with objects, machines, transportation vessels, logistics which overall delineate a human presence in shaping the contours of water on earth.

The aerial photograph unveils historical evidences of how the actual urban space was shaped and re-shaped. Following the question of what can be unveiled and seen beyond the present compression of time; aerial photographs can become tools for both depiction and imaginary reconstruction of the waterfront. In this respect, critical delineation of waterfront is an action that claims to rethink on the water geography in the context of planetary urbanization. And, this critical rethinking process may pave way to a call of the right to the waterfront.

This representation challenges the boundaries between human and non-humans, as well as the boundaries that demarcate territories of water and land. Opening the archive for the aerial photographs requests entering inside the camera and to face what has already happened. Which is a questioning of how the coastal space in Istanbul has transformed, constructed, demolished

and reconstructed.

To conclude, the presented methodology as a way of seeing with aerial photography, is far from bringing in shorthand solutions, yet it is a commencement for more questions about the shaping process of waterfront. How, by whom, with what processes, and by what kind of agents was the waterfront shaped so? These agencies unfold further intertwined closure of humans and nonhumans. Regarding its unfixity, transformation and change, the coastline is shaped under a multiplicity of agencies. How can aerial photographs entangle with a critical gaze towards urban transformation and the radical coastal developments in Istanbul rises as a question to be discussed further towards a critical delineation of waterfront.

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- *For a complementary visual essay including the mentioned aerial photographs in this paper, please visit the video in the link: <https://vimeo.com/306541875>