

From urban to regional transformation: rethinking Marmaray

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Abstract

The urban development of Istanbul within the course of the 20th Century contested its governmental borders and forced the governmental institutions to generate policies, plans and new governmental bodies. The troubled history of Istanbul's urban expansion in relation to its administrative borders points to a more problematic relationship with the designation of Istanbul's metropolitan area. The monocentric metropolitan approach fails to comprehend the complexity of the multi-scalar (inter-regional, intra-regional and supra national) hinterland relations of the polycentric urban agglomeration around Istanbul. This paper will draw attention to the regional formation around Istanbul; thereby testing the applicability of "region" as a more comprehensive model to understand the urban development of Istanbul as a conurbation that surrounds the Marmara Sea. While Istanbul becomes the Marmara Region, this paper will discuss the instrumentality and impact of the Marmaray project in the making of the region. The paper will first evaluate the urban theories on metropolitan models and regions. It will then analyze the impact of the Marmaray project while benefiting from a multi-scalar methodology. The contemporary multi-nodal urban region around the Marmara Sea will be analyzed in three primary formations: the existing urban centers of Istanbul, the peripheral nodes of Istanbul and the other urban centers around the Marmara Sea. The paper will end with a discussion on the necessity of interdisciplinary collaboration between policy makers, governmental and non-governmental agencies to lay the foundations of a sustainable development strategy in the Marmara Region.

Keywords: sustainable development, urban design, region, infrastructural development, Marmara, Marmaray, Istanbul.



1 Introduction

The Gezi events that took place in Istanbul in June 2013 crystallized the problems of the decade-long neoliberal urban interventions of the AKP government. Under AKP rule, Istanbul's population jumped approximately from 9 million to 14 million, the macroform of the city transcended the provincial borders and merged with the adjacent cities. This *hyperplasia* generated a polynuclear urban agglomeration around the Marmara Sea with a continuous urban corridor on the north eastern Marmara Shores. However, the governmental, representational and design challenges of the new scale have not been problematized by governmental institutions. While the urban interventions of the AKP has operated on a diverse set of scales, the infrastructural projects including the Kocaeli Bridge, the Northern Highway, Canakkale Bridge and the Marmaray project point to a scalar shift with emerging spatio-temporal relations. Among these projects this paper will primarily focus on the Marmaray Railway System because of its manifestation as a public transportation project. Hence, within the context of the Marmaray project sustainable development strategies for the future of the Marmara Region and, Istanbul in particular, will be discussed.

The Marmaray project is a 76.5 km long railway system that passes under the Bosphorus through an underground tunnel (fig. 1). The railway line follows the existing commuter line and links it with the regional railway. The idea of the project was derived from the 2006 Istanbul Environmental Regulation Plan. It connects two peripheral points of Istanbul, Halkali and Gebze, situated on the southern European and southern Asian parts of Istanbul respectively. The project decreases the transportation period to 105 minutes between these nodes [1]. This new connectivity points to a spatial restructuring within the Marmara Region. In order to understand this new regional configuration, a closer look at the urban growth pattern of Istanbul during the last century is necessary.

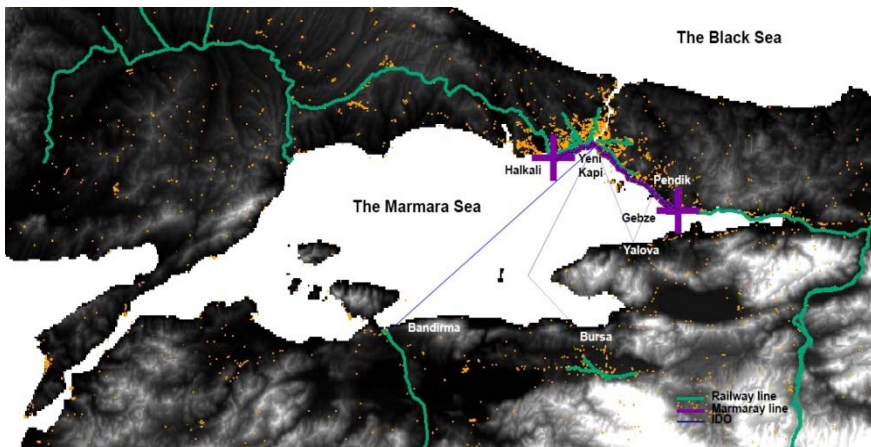


Figure 1: Marmaray project and the railway system around the Marmara Region.

2 A troubled history of metropolitan Istanbul: why has the metropolitan model failed?

While there has never been a general consensus on the definition of the metropolitan model it was a generally accepted term, especially in the first half of the 20th Century. The metropolitan model can broadly be defined as the functioning zone of the city delineated by the daily commuters. It was considered to be an assemblage of interdependent-specialized urban areas such as the downtown and suburbs. According to the metropolitan model, these functional zones as well as the urban area, overlapped with the administrative borders (Danielson [2]). Therefore, the metropolitan model defined urban growth as a decentralization process from a single city center (Bollens and Schmandt [3]). The urban development of Istanbul has contested the metropolitan model for two primary reasons: Firstly, the internal growth pressure of the city has always caused a mismatch with the administrative borders. Secondly, the fragmented geography of the Marmara Region – the water bodies and highlands that delineate and divide the territory – annihilated the possibility of an infinite growth stretching out from a single center and accelerated the emergence of conurbations.

At this point, a closer look at the contested history of Istanbul's urban growth with respect to its administrative borders is necessary. During the first half of the 20th Century the uncontrolled expansion occurred in the form of suburbanization. The residential neighborhoods of high income housing emerged on the eastern and western shores of the Marmara Sea, as well as along the Bosphorus by leaving undeveloped voids in between. One of the primary goals of the Prost Plan (1936) was to control sprawl by creating a coherent network. After WWII, the migration flows to Istanbul precipitated housing shortage and triggered the *gecekondu* formations at the municipal peripheries. As a result of the rapid post WWII development, the urban interventions of the era were outdated within a decade. In 1955, the municipal borders of the city extended from Florya to Kucukcekmece in the west and from Uskudar to Umraniye in the east (Tekeli [4]). The rapid expansion process also helped the peripheral *gecekondu* areas to gain legal status. In 1959, this transformation was followed by the invention of a legislative unit called, *mucavir alan* (adjacent area), which gave the municipalities the right to control the areas adjacent to their peripheries [4]. The number of peripheral municipalities was also increased between the 1950s and the 1980s. Subsequently a fragmented governmental structure emerged [4]. By a law released in 1972 the *mucavir alan* was transformed into *mucavir saha* (adjacent territory); therefore the pre-condition of adjacency to the municipal boundaries was annulled [4]. This expansion was followed by the decentralization of industry in the east-west direction in the 1980s (Tekeli [5]). Beginning from the 1980s onwards, these peripheral *gecekondu* settlement municipalities transformed into edge city conditions by composing sub centers that connected the adjacent provinces to Istanbul.

Under AKP rule, since 2002, Istanbul's population reached 14 million people while the urban footprint of the city in the east-west direction reached a span of 100 kilometers. The AKP embraced the metropolitan approach and supported the



“limitless city” leitmotiv which led to a series of conflicting policies and projects for Istanbul. The Metropolitan Municipality Law enacted in 2004 cancelled the municipal boundaries of Istanbul and provided the central municipality control over the whole provincial area of the city. The 2006 Istanbul Spatial Development Plan had an ecological perspective and aimed to protect the northern forests and freshwater systems of Istanbul. The lack of the administrative organizations to sustain the 2006 plan in relation to the neoliberal agenda of the AKP government restrained the plan. In 2009 the AKP government pushed the master plans aside and manifested a set of future projections for Istanbul called “crazy projects”, including numerous housing, shopping mall and mixed use developments as well as a canal project that connects the Black Sea with the Mediterranean. As a result, in the second decade of the 21st Century this urban agglomeration is again on the edge of another transformation.

The troubled history of Istanbul’s urban expansion in relation to its administrative borders points to a more problematic relationship with the designation of Istanbul’s metropolitan area. What looks endless from the metropolitan perspective gains a different dimension, if observed from a higher vantage point. In terms of provincial area ‘overgrown’ Istanbul ranks as the 64th biggest province of Turkey out of 81 [6]. In other words, Istanbul is one of the smallest provinces of Turkey, clearly delineated by two water bodies (The Black Sea and the Marmara Sea) in the north and south, subject to an immense pressure of growth. The administrative interventions and initiatives established to control the growth always failed to comprehend the speed and the scale of the process and evaluate the geographical constraints. For instance, the primary objective of the policies on peripheral governance such as the *mucavir alan* (adjacent area) was to designate the metropolitan area of Istanbul and to develop a metropolitan governance system that would operate within the framework of the metropolitan area. The emergence of the peripheral municipalities, however, precipitated a fragmented structure and a unified metropolitan governance system was never established. When the 2004 Municipal Law was enacted, the city had already formed an industrial conurbation with the Izmit Province in the east. Despite these discrepancies, the persistence of the politicians to explain and to govern Istanbul from a metropolitan perspective has continued. This one dimensional approach has prevented the generation of policies, urban design and planning objectives, infrastructural investments, and future projections for a sustainable development model that can comprehend the complexity of Istanbul’s urban development with respect to its multi scalar hinterlands. For instance, in the Population Decentralization Map of Istanbul the distribution of the population percentages between 1990 and 2011 reveal the urban circumstance of *hyperplasia* within the urban landscape of Istanbul: while the population of Istanbul province doubled, the same settlement structure was maintained (fig. 2). The contemporary problems of this agglomeration such as the sprawl that splintered towards the north destroying the natural resources of the region; the externalities such as the pollution problems of the Marmara Sea; transcend the administrative framework of the metropolitan governance.



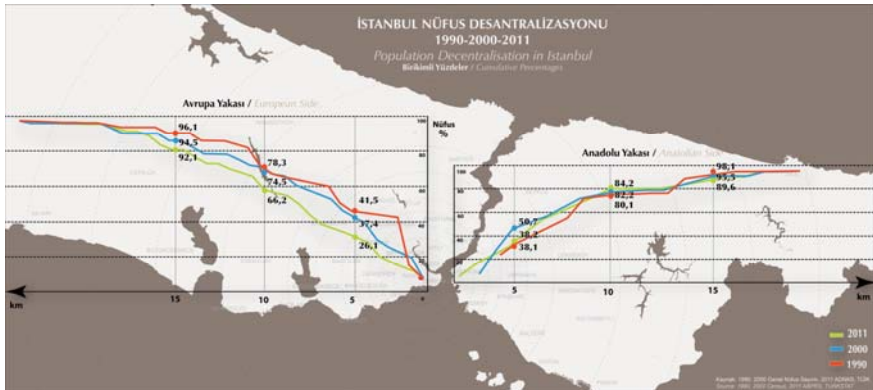


Figure 2: Population decentralization in Istanbul, cumulative percentages.

3 Evaluating the urban growth of Istanbul at a regional scale

Given the constraints of the metropolitan scale discussed above, this paper will posit “region” as a more comprehensive model to develop a relational understanding of Istanbul’s urban growth. The term emerged as the fundamental unit of geography, defining geographic areas with specific characteristics that separate them from their surroundings (Chorley and Haggett [7]). Macro specificities such as “the physical environment of microclimate, major soil groups, and biomes with the human dimensions of politics, social structure, and culture” are often used to define regions (Forman [8]). This explanation of uniform regions then evolved into nodal regions in the early 20th Century. The nodal region is best exemplified in Walter Christaller’s central place theory that asserts the existence of a regional city surrounded by a multi nodal network of satellite towns [9]. Simultaneously, Patrick Geddes developed the notion of “conurbation” that defines a multi centered urban cluster that stretched out into the geography [10]. In *Megalopolis: The Urbanized Northeastern Seaboard of the United States* Gottmann drew attention to the urban agglomeration that encompassed the primary cities of the United States such as New York, Washington and Boston [11]. Gottmann examined the land use patterns, economic structures and social interactions of the rapidly developing region where the urban-rural differentiation rapidly dismantled [11]. Around 1960 approximately 37 million people were living in Megalopolis; therefore agricultural land, suburbs, rural areas and industrial zones were highly intertwined [11]. In the 1980s and 1990s this polycentric model was further elaborated by The Los Angeles School of Urbanism, who benefited from regions to explain the networked, multi-nodal, polycentric and fragmented nature of neoliberal-global urbanization. Scott *et al.* [13] promoted the contemporary regional formations as the “motors of the world economy”. According to Scott [12], regions emerged as a result of the demand for national agglomeration economies and succeeded through Keynesian capitalism and Fordist modes of production. After the 1970s, regions integrated with the world

economy and became distinguished by their glocal-geographical features [13]. Today this formation is in perpetual flux under the sequential phases of decentralization and recentralization [13]. The governmental problems of the regions pave the way to a “highly fragmented chess-board of uneven development sprawling ever outward” [13]. These problems become more explicit in the global city regions of third world countries as these agglomerations become more privileged for rapid industrialization in comparison to other parts of the country [13].

The geographic connotations of the term “region” provide a possibility to situate the Marmara Sea as a geographic entity at the center of the Marmara Region’s urban history. The Marmara Sea is an inland sea that connects the Mediterranean and the Black Sea with the Dardanelles and the Bosphorus. This interconnectivity makes the Marmara Sea a hinge of political, cultural, economic and climatic transition between Asia and Europe as well as the Mediterranean and the Black Sea Worlds. As a result of the geopolitical advantages, perpetual demographic growth and urban development have always remained as the primary characteristics of the urban network around the Marmara Sea. Istanbul being the most well-known, the urban centers such as Bursa, Kocaeli (Izmit, Nicomedia) and Edirne benefited from the transitional nature of the Marmara Sea. Their hinterlands extended to Thrace, Asia Minor, as well as the Mediterranean and the Black Sea worlds. Istanbul, Bursa, Kocaeli and Edirne were the capitals of the civilizations that ruled the region in different periods. While Istanbul consolidated its condition as the primary urban center diachronically; the competition among other urban centers in the region such as Bursa, Kocaeli, Edirne, Tekirdag and Canakkale precipitated a flux of migration routes, goods, food and money with constantly shifting centripetal and centrifugal forces.

In the Republican Era, a preliminary regional planning initiative was released by the German planner Martin Wagner in 1935–1936 [14]. The plan primarily focused on the hinterland relations Istanbul established with other urban centers around the Marmara Region in terms of agricultural production, natural resource management, recreation, population distribution, recreational activities, infrastructural networks, modes of transportation and industrial development. Corresponding with the publication of the First Development Plan, the 1960s witnessed an interest in regional studies. A set of regional plans were established for the Marmara throughout the 1960s: The Eastern Marmara Preliminary Plan (1963), The Istanbul Industrial Master Plan (1965), The Istanbul Metropolitan Settlement Preliminary Plan (1965), The Thracia Socio Economic Development Plan (1966) and The Eastern Marmara Tourism Study (1966). Among these plans The Eastern Marmara Preliminary Plan (1963) by Tugrul Akcura presents a comprehensive understanding of the urban development dynamics of the Marmara Region [15]. The plan primarily focuses on the Eastern Marmara Subregion which forms the industrial corridor along the Northeastern shores of the Marmara Sea including the cities of Istanbul, Kocaeli and Sakarya. While the ratio of the Eastern Marmara Subregion’s area to Turkey’s was 3.2%; the ratio of the Eastern Marmara Subregion’s population to the country population was 11%. Approximately 20.8% of Turkey’s national income was created in the Eastern Marmara Subregion. The

plan anticipated the rapid development of the industrial corridor in the east and proposed sub centers around the Eastern Marmara Subregion to decrease the pressure of this rapid development on Istanbul and its environs.

With the dismantling of the Soviet Union in the 1980s the historical hinterlands of Istanbul were reactivated and Istanbul gained a new opportunity to lay claim to a place in the league of global cities (Tekeli [5]). The development of Istanbul's urban region and its integration to the urban hierarchy in the Marmara Region was affected by urban, regional, national and global decisions. The completion of infrastructural projects such as the Bosphorus Bridges and peripheral roads, the decentralization processes precipitated by liberal policies, and the transformation of Istanbul into a financial center substantially changed the urban landscape in and around Istanbul [5]. The industrial sprawl from Tekirdag to Cerkezkoy and Corlu in the west and from Hereke to the Gebze Industrial Region and Babaeski in the east beginning from the 1980s, reveal the nodal points and sub centers in which the administrative borders dismantle [5]. The shifts in the migration patterns around Istanbul also support this sprawling structure. The changes in the population ratios seen in the district level map, created by Professor Murat Guvenc, clearly reveal that between 1990 and 2000 a higher rate of population increase occurred in the peripheral districts of Istanbul such as Cerkezkoy, Corlu, Silivri, Büyükçekmece, Umraniye, Kartal, Pendik and Gebze (fig. 3). The emerging urban formation is supported by real estate, transformation and education developments [5]. The peripheral nodes of this system are autonomous structures that transcend conventional terms like "suburb" and establish direct connections with global systems through new communication technologies [5]. Today, the Marmara Region's population has reached 21 million; therefore it comprises approximately 28% of Turkey's population. The deindustrialization of

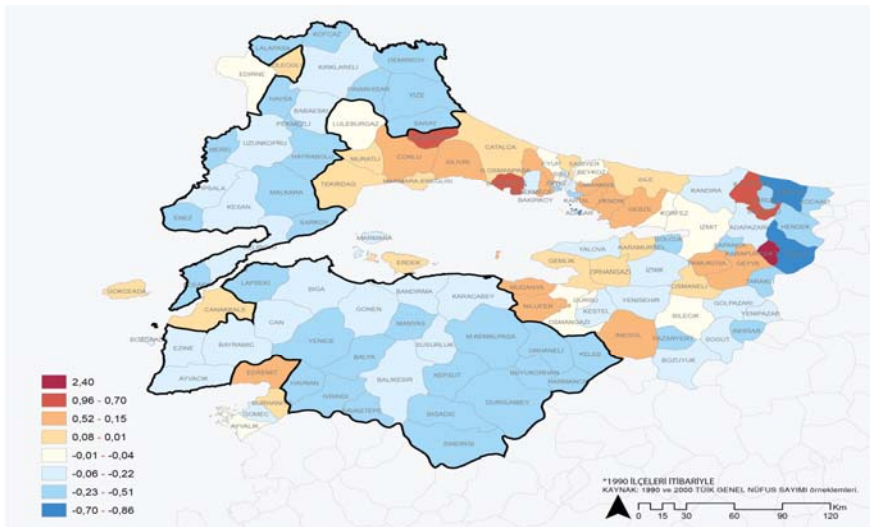


Figure 3: The changes in the population ratio at the district level map.

Istanbul's metropolitan area together with the industrial sprawl in the regional scale, creates a fragmented landscape in which industrial and agricultural land use and urban sprawl coexist with the historical landscapes of the region. This arbitrary land use distribution, especially the industrial sprawl, paves the way to serious environmental degradation around the primary geographic entities of the region such as the Ergene Basin and the Marmara Sea.

4 The agency of Marmaray in the making of the contemporary Marmara Region

The theoretical framework discussed above projects a series of opportunities to discuss the Marmaray project as an intervention to a complex system. The Marmaray project presents a set of opportunities as well as challenges to shape and reshape the Marmara region across scales. This condition demands a multi-scalar approach; therefore the contemporary multi-nodal urban region around the Marmara Sea can be analyzed in three primary formations: Existing urban centers within Istanbul's metropolitan area; Sub centers which emerged as peripheral areas and transformed into edge city formations; existing urban centers around the Marmara Sea and trans-national networks.

4.1 Existing urban centers within Istanbul's metropolitan area

Besiktas, Beyoglu, Eminonu, Uskudar, Sisli and Kadikoy districts compose the conventional center of Istanbul. These centers embody a mix of residential, commercial, educational and cultural activities (headquarters of predominant firms, distinguished universities, touristic attractions as well as cultural institutions). In terms of public transportation, these districts are already highly connected through bus, railway and ferry transportation. Between the 1950s and 1980s they witnessed an immense construction process [16]. Today their urban landscape is composed of apartment blocks and high rise buildings with very little public space left in between. The "urban transformation" laws and policies released after the 1999 Izmit earthquake were first implemented in the Fikirtepe neighborhood in Kadikoy and the Sulukule neighborhood in Eminonu, followed by forced migrations and land speculation. Subsequently, a construction boom began around Kadikoy and Besiktas, again via developers benefitting from the urban transformation law, which allows the demolition of existing apartment blocks for the sake of higher density. This process triggered a rapid increase in rents and intra city migrations. Two primary transportation hubs of Marmaray are located in Uskudar and Yenikapi in Eminonu. While the decision making process on the design of these public complexes were not participatory, the outcome project is of outdated urban design forms that fail to connect with the urban context. The 518,000 square meter land reclamation around the Yenikapi Marmaray hub is an especially highly controversial intervention that irreversibly changed the historical landscape of the Marmara shore of the Historical Peninsula. The current construction boom and uncontrolled rent increase may lead to a



decrease in the diversity of urban functions and eventually an unsustainable urban environment. However, it is also possible that emerging peripheral nodes may reduce the pressure on the center.

4.2 The subcenters emerged as peripheral areas and transformed into edge city formations

After the liberalization and neoliberalization processes that began in the 1980s the former suburbs and *gecekondu* areas of Istanbul such as Halkali, Florya, Yesilkoy, Zeytinburnu, Kartal and Pendik transformed into financial and commercial nodes. Within the continuous urban fabric around the Marmara Region, these nodes also act as hinges between Istanbul and adjacent provinces. These areas reveal an intertwined land use pattern of CBD and industrial functions besides new residential projects in the form of condos and gated communities. Within the context of the Marmaray project the existence of Sabiha Gokcen and Ataturk Airports around these nodes points to increasing connectivity and accessibility. As Marmaray enables integration with regional lines, these sub centers will become hinges of intraregional connectivity, complexifying the center-periphery relations.

4.3 The existing urban centers around the Marmara Sea and trans-national networks

As the urban expansion of Istanbul leapfrogged into adjacent cities such as Tekirdag, Izmit and Yalova, these cities, became the satellite cities of Istanbul's metropolitan region. The primary hubs of Marmaray not only strengthen connectivity via railway infrastructure but also open up a new set of transportation possibilities especially in terms of sea transportation in the Marmara Sea. For instance, the Yenikapi Station is also a ferry port with fast ferry trips to Bursa, Bandirma and Yalova with trip durations fluctuating from 75 to 130 minutes. The Akport Port in Tekirdag for Ro-Ro transportation integrates the Marmaray System with Gemlik, Bandirma, Karabiga, Biga, Derince, Trieste and Toulon ports around the Marmara Sea [17]. Despite the intraregional efforts to increase the connectivity of the Marmara Region in relation to the Marmaray project, the fundamental missing piece in the big picture is the Baku–Tiflis–Kars Railway line [18, 19]. After the construction of this railway line is completed, the Trans Asian railway project for cargo transportation (or the Iron Silk Road), which the Marmaray project composes a small part, will be completed [18, 19]. The Trans Asian railway line will provide seamless connection for cargo transportation between Europe and China.

5 Conclusion

Contemporary urbanization is a socio-spatial phenomenon which operates on a 'planetary' level; therefore follows non-linear phases of territorialization and deterritorialization (Lefebvre [20]). The enforcement of centripetal and centrifugal forces over the territory, as a result of urbanization precipitates an urban landscape of facilities, buildings and infrastructural networks under perpetual flux Rowe,



[21]. These push and pulls often materialize as processes of expansion or spreading out, intensification or the concentration and re-concentration of urban activities and recombinant revitalization [21]. Today there is also great effort to illustrate, analyze and represent urbanization as a dynamic formation by going beyond fixed spatial and societal models. These efforts are coming from many different angles such as urban geography, development economics, environmental and landscape histories, urban ecology, ecological urbanism, landscape urbanism and critical cartography.

While the geographic barriers the Marmaray project is about to annihilate, point to new spatio-temporal configurations in the Marmara Region, the project is still promoted merely as a public-transportation project. The lack of multi-dimensional urban development strategies obstructs the anticipation of urban transformation in macro, meso- and micro-levels in the Marmara Region with respect to the Marmaray project. This neglect primarily derives from the lack of any integration among decision makers, civil organizations and governmental authorities.

Despite the great effort around the 1960s and 1970s to develop regional strategies, regions remained as geographic and statistical units without any administrative representations in Turkey. The urban administrative structure based on the provincial level, is highly centralized in which the state can directly intervene in the urban administration through the governor (*vali*) assigned by the government. The Law 5216 released in 2004 and law 6360 in 2012 aimed to challenge this situation by up scaling the authority of the mayor from the metropolitan level to the provincial level [22, 23]. However, the anti-democratic interventions of other state organizations, such as TOKI and Kiptas prevented the democratization on the urban administrative structure. Today, a series of local authorities such as the Marmara Municipality Union, Regional Development Agencies, the Union of Historical Towns and several NGO's such as The Chamber of Architects and Engineers are seeking new modes of scalar integration and sustainable spatial production within the region. The lack of dialogue between these groups is obstructing any comprehensive future projections. Within this ambiguity, two bi-polar conditions can be discussed: The centripetal and centrifugal forces the Marmaray project will create can precipitate a dispersed mosaic of uneven geographic development, as well as a more sustainable distribution of urban functions in the regional level.

Returning back to the notion of non-linearity in contemporary urban formations, it should be remembered that, a perpetual intensification of, often desired, physical urban conditions such as "compactness, density, diversity and interconnectivity" reveal paradoxical behaviors and dilemmas. This often yields to undesired circumstances such as overcrowding, dilapidation, congestion and eventually environmental degradation. The non-linear development of urban forms is also highly intertwined with the sustainability of "urban society". Similar to Lefebvre's "Right to the City" which, in his own words, "can only be formulated as transformed and renewed right to urban life", Fainstein coins the term "the Just City" [24, 25]. While the term can be applied to different urban scales, in Fainstein's narrative "the Just City" is not the ultimate goal to be accomplished, but an ideal for the sake of a sustainable urban society. She constructs the notion



of “justice” by benefiting from three fundamental parameters “democracy, diversity and equity” [25]. This set of non-linear parameters exemplified above to measure the socio-spatial outcomes of urbanization can give guidelines to discuss the Marmaray Project in the remaking of the Marmara Region. A multi-disciplinary framework, participatory planning processes, with a set of parametric measures specific to the region can help to develop flexible pathways forward. Therefore, understanding how different urban functions, land use formations and urbanities coexist and co-operate in the Marmara Region becomes highly crucial to imagine possible futures.

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