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Article

The holistic view of urban space method: Examination of public spaces around Kadıköy Marmaray stations

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ABSTRACT

This study focuses on the development of a 7-criteria examination method for understanding, analyzing, mapping, and interpreting urban space, and the testing of the method in the area around Marmaray Kadıköy stations. Within the framework of the study, based on the need for a method that enables the understanding and analysis of urban space, 7 research criteria were created that include the holistic data of the city. These criteria aim to obtain holistic data by combining the plan level and urban form data of the urban space, the three-dimensional perceived (experienced) data of the space, the relationship of the historical process with economic, political, social, and spatial dynamics, and mapping techniques. This method, called the "holistic view of urban space," allows data to be brought together, mapped, and multiple readings and inferences to be made while experiencing and researching urban space. In the study, carried out with the qualitative research method, theoretical information is brought together with the thematic analysis method and associated on the matrix. By associating the concepts on the matrix, the "holistic view of urban space" method is obtained. The data obtained after the field examination are analyzed with 7 examination criteria, and a mapping study is carried out. The analysis criteria make it possible to collect data at eye level and at plan level and to interpret them by associating them in the analysis of the urban space. The criteria allow deepening the information by elaborating the collected data, as well as providing holistic information from a higher scale through induction.

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INTRODUCTION

The city is a complex structure, and the perception of the city is a complex, interrupted, and fragmented process (Harvey, 2009; Lynch, 2011). Public space can be defined as the natural and built environment in which the public can move freely. In its broadest definition, it includes all parts of the city between the dichotomy of built and natural-structured, public-private, internal-external, urban-rural (Carmona et al., 2008). In studies of urban life and urban form, researchers have created concepts and scales to improve the quality of urban life. While some definitions, such as the 15-minute city, the sustainable city, the smart city, the slow city, and the resilient city, contradict each other, others may overlap. For example, compact urban

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This article is based on ongoing phD dissertation which aims to propose a methodology for the study of public spaces and to test it around Marmaray stations by Özgün Özbudak under supervision of Prof. Dr. Ömür Barkul at Yıldız Technical University, Department of Architecture.

design emphasizes pedestrian life, while sprawling cities may encourage the use of vehicles as settlements that are far from each other (Jaroszewicz et al., 2023). With advances in technology, the growth of cities, and the invasion of vehicles into cities, the emphasis on public spaces and what their 'good' qualities should and can be is becoming increasingly important (Aydınsoy & Ötküng, 2021). In order to create and maintain good urban public spaces, it is important to act with a holistic view by identifying the current situation, past traces, problems, and positive features. What is meant by a holistic view is that in the process of analyzing urban space, the ruptures created by economic, political, and social dynamics in the historical process, the pattern of urban space on the plan level, and the three-dimensional urban life should be treated together.

As a result of the lack of holistic management of spatial data transformed by economic, political, and social dynamics (Harvey, 2009), urban spaces are transformed into spaces that are incompatible with natural environmental features, incapable of creating their own identity, unrecognizable, lacking identity features, and copies of each other. Therefore, good urban spaces can be created by determining the analysis techniques in urban spaces before the decisions to be taken inside or outside the urban texture and by revealing the unique values of urban spaces (Çolpan & Akın, 2015). The open or hidden traces of historical process ruptures in space, the relationship between current life and the future, the impact of urban space on life are important elements that enable the understanding of the relationship between human and urban space.

Within the scope of the study, based on the need for a method that enables the analysis of the urban space in its entirety, 7 examination criteria including the holistic data of the city have been created. This method, called "holistic view of urban space," enables data to be brought together, mapped, multiple readings, and inferences to be made while experiencing urban space and conducting research on space. The method aims to reveal the historical ruptures in urban life and the data in layers in contemporary urban life, and to make them analyzable and holistic. The method is tested in the station environments of the rail transport system, which is one of the important transformers of urban space, namely around the Marmaray (Kadıköy) stations. Rail transport systems contribute to the creation and enrichment of urban space, bringing it to life with their dynamism. While railway transport creates urban spaces with the dynamism it generates, at the same time, the addition of different transport systems to the station points makes the nodes both stronger and more complex.

The research derives a new method from the theoretical knowledge through the method of thematic analysis, which is one of the sub-headings of the qualitative research method. The mixed method proposed in the study is a social and spatial analysis method created to study the form, quality, and social structure of the urban public space through mapping techniques, taking into account the historical ruptures (economic, political, social dynamics). This method is called "the method of the holistic view of urban space." It is aimed to analyze the social and spatial analysis of urban space with a mixed method created with Corner's (2011) mapping techniques by bringing together Jan Gehl's (2020) good city qualities for lively, safe, sustainable, and healthy cities, Oscar Newman's (1996) urban public space hierarchy, Kevin Lynch's (2011) legible city criteria, David Harvey's (2009) emphasis on the necessity of examining both concepts together.

Aims of the study;

- To create a mixed method that proposes to deal with the quality of space, the representation of space, the social structure of space, the perceptual characteristics of space,
- To make the urban public life, which is the result of human interaction with the space, visible through the method and to make it available as design data,
- To provide an overview of the problems and possible solutions in the use of urban public spaces that are intensively used in daily urban life through mapping,
- To create a holistic view between the upper scale (urban macroform) and the human scale and to create a cycle from the upper scale to the human scale.

It is believed that with the "method of holistic view of urban space" created in the study, the following contributions can be obtained in the studies of public space:

- The holistic data of the urban space can be obtained and the urban space with all its data can be easily analyzed,
- To be able to relate apparently unrelated features through a holistic view and to make multiple readings,
- To reveal the data hidden in the layers of urban life.

In this context, by analyzing the urban spaces around the stations, both the old stations and the newly designed urban spaces around the stations, an attempt is made to create a perspective for the existing and future urban spaces, which are assumed to be of great importance in the daily lives of the city's people.

Theoretical Background

This section of the study presents a literature review that constitutes the method of a holistic view of urban space. The chapter consists of the concept and characteristics of public space, economic, political, and social dynamics, the nature of urban public space, and the representation of urban public space.

The Concept and Characteristics of Public Space

Public spaces are urban spaces, a common ground

that brings people together for purposes such as daily activities or collective ceremonies (Erdönmez & Akı, 2005). Madanipour (2003) defines the most fundamental distinction between private and public as the distinction between a person's inner world and the outer world. While the mind is a space that can be opened or hidden from other people at will, it is also shaped by the influence of the outside world. Therefore, the private sphere of the body and the public sphere of the external world intertwine and shape each other (Madanipour, 2003).

Newman (1973) defines urban space from public to private:

- Public space,
- Semi-public space,
- Semi-private space,
- Private space.

The idea is that these spaces should be designed in a hierarchy (Figure 1). He argues that these spaces are not separated by sharp boundaries and that they influence each other in terms of their use and life.

Trancik (1986), on the basis of the evolution of modern space and historical examples, explained urban design theories with three different interrelated theories. These are: Figure-ground theory, linkage theory, and place theory (Figure 2). When these theories come together, potential urban design strategies emerge.

Quality of Urban Public Space

Gehl (2020), summarizes the characteristics of a "good city" as dense urban fabric, short walking distances, pleasant routes, high levels of mixed-use, active ground floors, distinguished architecture, and meticulous detailing. He elaborates these qualities under four main headings:

- **Lively:** Places where more people walk, bike, and spend time in the city.
- **Safe:** Where people spend more time in the city because they can see and be seen by other people.
- **Sustainable:** Where pedestrian use, cycling, and public transportation are prioritized.
- **Healthy:** Where people's more active participation in urban life can be ensured through movement.

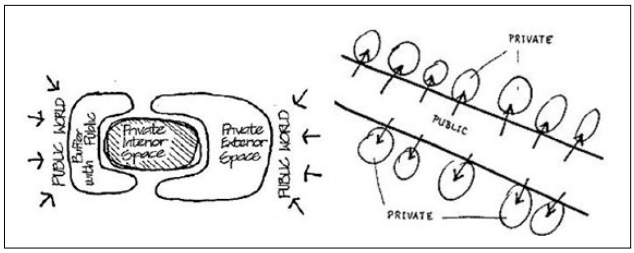

Figure 1. Diagram showing the sequence between private and public space in urban space (Newman, 1996).

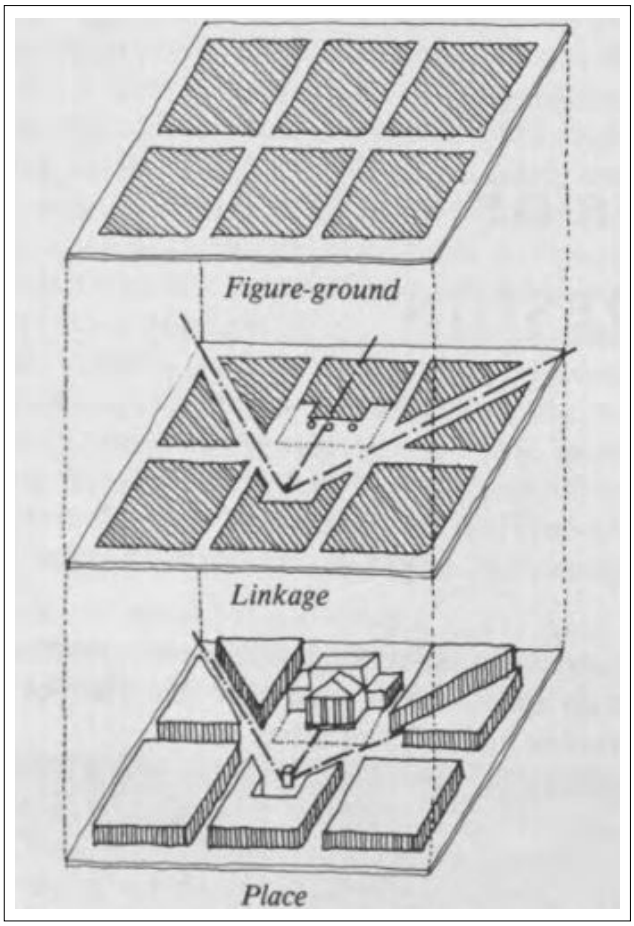

Figure 2. Urban design theories of Trancik (Trancik, 1986).

A city that has a simple form, a continuity of building types and use, a city that is unique in the city, a city with precisely defined boundaries, a city that is clearly merged with neighboring regions, a visually concave region with easily identifiable features is an imaginable city (Lynch, 2011).

The concepts of proximity, ecology, solidarity, and participation emerge with the proposal of 15-minute cities with an approach that emphasizes pedestrian and bicycle use by centering on the idea that the rhythm of cities should follow people, not vehicles, and that every square meter should be usable (Moreno et al., 2021). The prominence of vehicles instead of pedestrians, whereas humans have been prone to walking and walking speed for centuries (Jacobs, 2017; Gehl, 2020), the ability to make discoveries by walking, and the efficiency gained while conducting research (Wiley, 2010) are important components that can be addressed when examining urban problems.

Economic, Political, Social Dynamics

Until the 18th century, the dichotomous urban structure, such as center-periphery, urban-rural, started to unravel due to the increasing population and changing modes of production. Parallel to the change in the mode of

production, the cultural atmosphere has changed with the effect of modernism, and the meaning of place and space for people has changed (Salah, 2013).

In the early 20th century, the development of technology and increased production led to an increase in the scale of cities. The distances between buildings have increased, and instead of looking at the city as a texture formed by the coming together of buildings, it has begun to be viewed as separated buildings and the gaps between them (Jacobs, 2017; Gehl, 2020).

Tekeli (2009) divides the urbanization process in Türkiye into five periods: Ottoman Modernization before the Republic, the search for a planned economy in the Republican period, the populist modernity process between 1950-1960, the rapid urbanization of the 1980s, and the globalization period afterward. The traces of these processes can be seen in urban spaces, on buildings, and can help in the analysis of urban spaces by creating background knowledge.

The traces of these dynamics can be read in space during the urban experience. An urban fabric from the Ottoman period can be replaced by boulevards and squares that represent the modern cultural image of the Republic (Çalışkan, 2004; Çetin, 2012). Buildings and urban textures from different periods can coexist and intertwine with each other. The coexistence of differences strengthens urban memory and enriches urban life. For this reason, historical process breaks that affect social life emerge as important dynamics that transform spaces and show their traces in the urban space.

Representation of Urban Public Space

The quest to create 'good' urban space is a constant concern for designers. They have used mapping to reveal and simplify the complexity of the city through visual representation with graphical tools to understand its characteristics (Amoroso, 2010). Instead of a static representation, mapping refers to a practice in which the maker, the mapped place, and the product are produced, redefining and repositioning each other in the process (Şenel, 2014). In this context, maps always and inevitably include the behavioral and ideological orientations of the mapmaker, and studies on maps must take these orientations and their effects into account (Aral, 2018).

Corner (2011) presents mapping as an approach that shows the world in new ways by revealing possibilities and creating unexpected solutions and effects, and defines mapping practices in four groups (Figure 3).

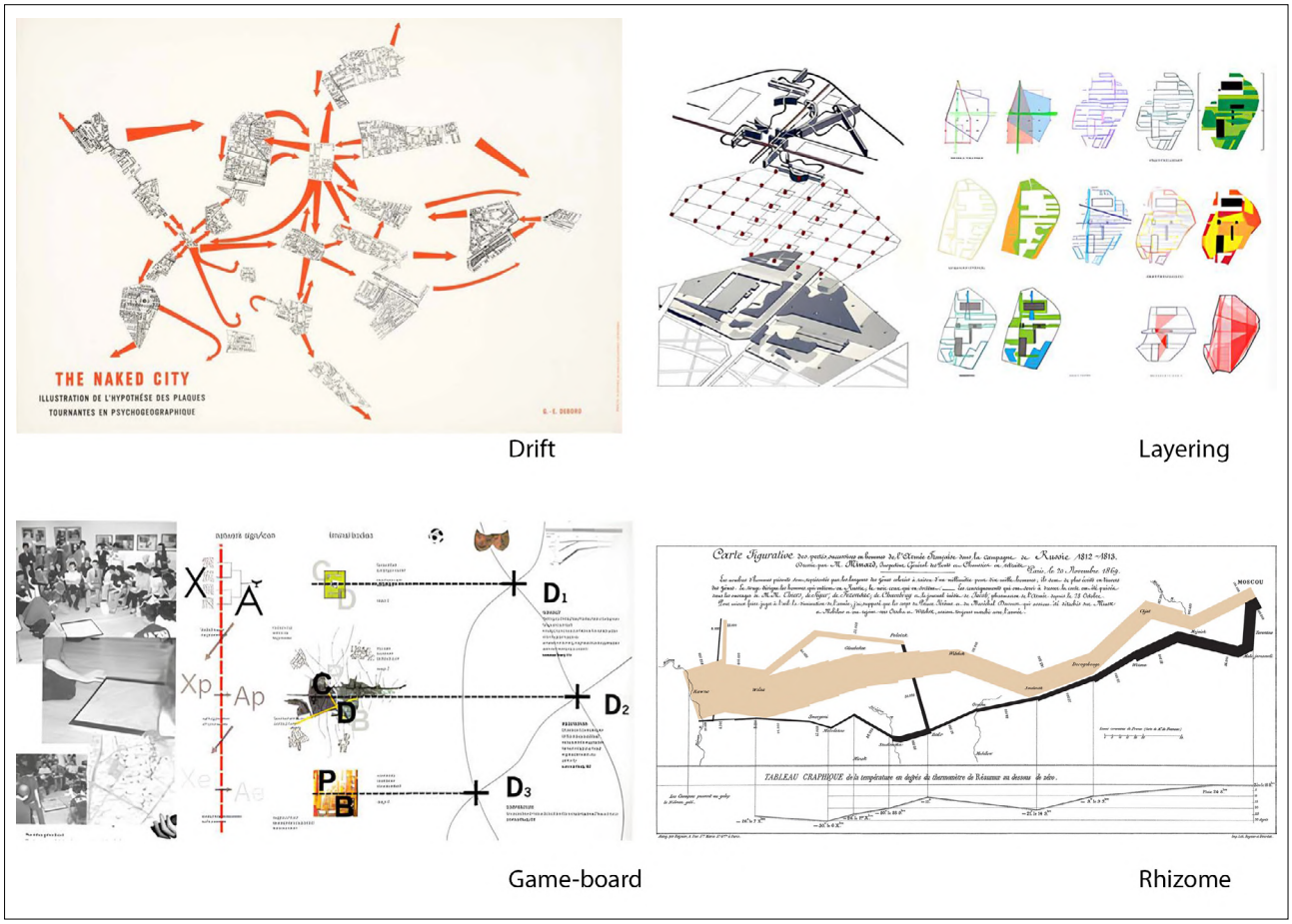

Figure 3. Mapping techniques (Aral, 2018).

Drift: It covers the expression of perceptual sub-areas on a route experienced in the city. Guy Debord, in his work "The Naked City," in which he maps his aimless wanderings in Paris, reveals that the map of the city formed in the mind is fragmented (Corner, 2011; Aral, 2018). As a critique of the modernist and holistic concept of the city of the period, these maps demonstrated that a fragmented map of the city was also possible for the expression of individual perceptions, momentary preferences, and experiences (Aral, 2018).

Layering: The superposition of independent layers to create heterogeneous life. It aims to produce multiple combinations of use and life for the future in an open-ended spatial construct proposed by the combination of different layers (Aral, 2018).

Game Board: The city is constructed as a game board, and the actors in the city take part in the formation process of the space as active players (Corner, 2011; Aral, 2018).

Rhizome: Mapping as a rhizomatic activity allows for new and open-ended relationships to be established through both inclusive and pluralistic, and flexible techniques (Corner, 2011; Aral, 2018).

Within the scope of the study, "Drifting" is used to represent drifting between stations, "Layering" is used to overlap the traces of the historical process in space, and "Rhizomatics" is used to bring these elements together.

A METHOD SUGGESTION FOR ANALYZING PUBLIC SPACES: A HOLISTIC VIEW OF URBAN SPACE

As a result of the literature review, the theoretical knowledge on the concept of public space, the quality of public space, and the representation of public space was summarized, and the research results were obtained. In the sources, data summarizing how a good city should be and what to look for to understand the city are listed in a matrix system. The first matrix was completed by placing dots in the boxes for views that are parallel and related to each other from the theoretical information (Figure 4). In the matrix study, there is a similarity between Lynch's (2011) and Harvey's (2009) emphasis on the interrupted perception of urban space and the concept of 'drift' theorized by Corner (2011), based on Guy Debord's work. Gehl's (2020) criteria for the quality of urban life are in parallel with other views, except for the view that urban perception is fragmented. Newman's (1973) urban public space hierarchy is related

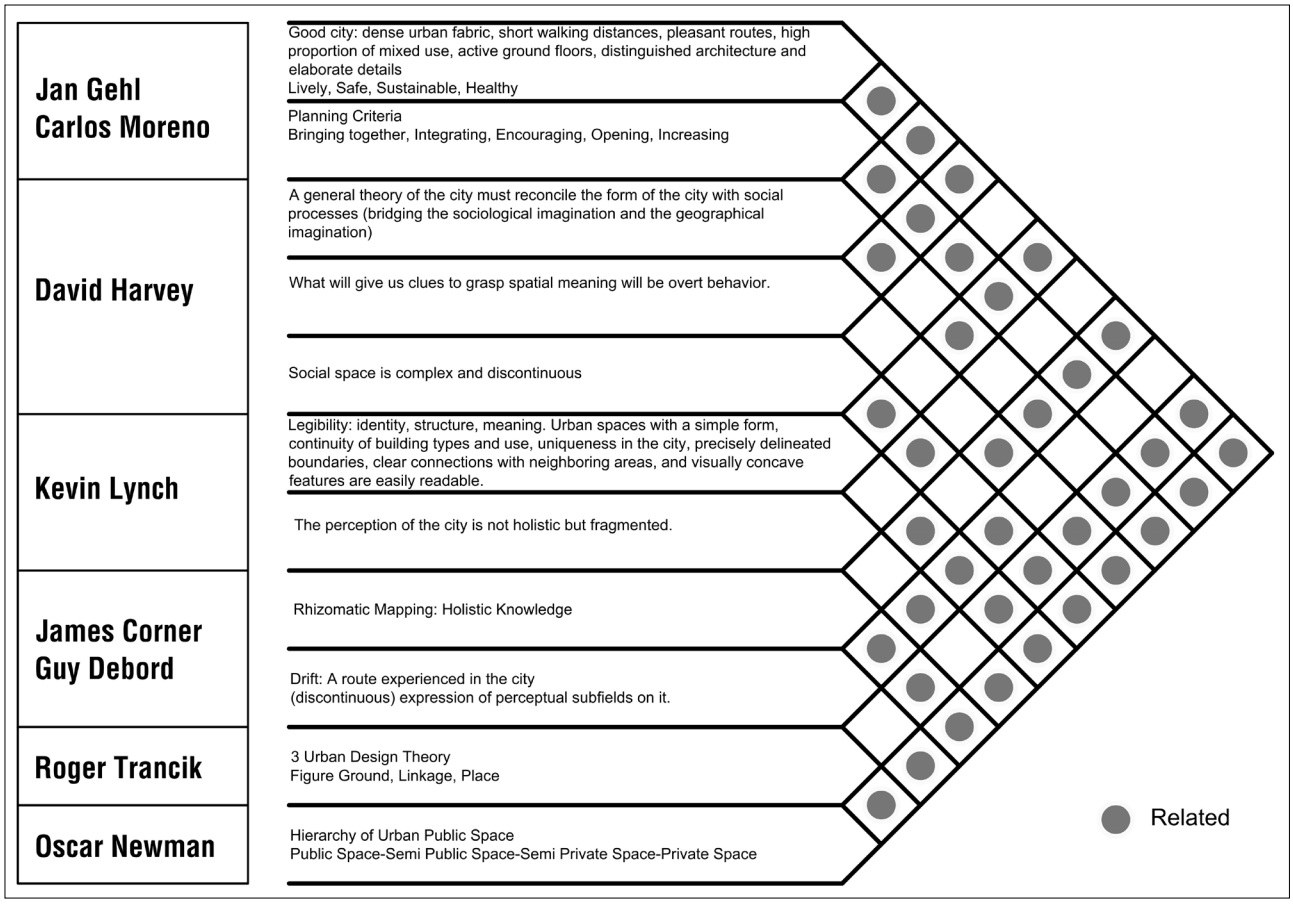

Figure 4. Associating the theoretical knowledge with the matrix study.

to all views and provides a general framework for urban public space design.

After determining the related or not related status on the upper scale, the concepts indicated by the dots were separated from each other by coloring. As a result of the colored markings, a keyword was given to the concept represented by each color. The keywords constitute the criteria for a holistic view of urban space. Each criterion represents important components of urban space.

Through the matrix study, the theoretical data are divided into parts, and their relationship with each other is revealed; the relationships obtained are brought together to reach the whole, in other words, induction is made.

The points marked with green color represent the image of the city, its permanence in mind, easy comprehensibility. The dark blue dots represent the meaningful relationship of squares and streets with each other in urban space, articulating with each other and encouraging the user to explore. Light blue dots indicate the relation between social life and urban space. The current data of public spaces and urban textures, as well as the reflections of the traces of the past in the space, are represented by yellow dots. The dots marked with red color represent that the urban space allows meeting compulsory needs such as going to work, school, shopping, etc., as well as non-mandatory needs such as spending time in the space, gathering together. Pink dots represent the relation between the space and natural environmental data such as topography, coast, river. The orange-colored dots represent the possibility of generating new ideas in the mind during and after the experience of the space (Figure 5).

With the matrix study, 7 criteria were obtained. These criteria are:

- Legibility
- Spine Formation
- Social Integration
- Having a Place in the City's Memory
- Responding to User Needs
- Harmony with the Natural Environment
- Allowing Creativity

Legibility: Easy to Understand, Persistence in Mind

In order for the public life of cities to be meaningful and legible, it is necessary to create short routes; these routes should be connected to each other by creating a meaningful hierarchy with stopping areas suitable for human scale (Gehl & Svarre, 2013; Gehl, 2020). The urban environment can become a definable and real place when it is clearly defined, and when urbanites connect with it meaningfully (Lynch, 2011).

For urban space to be legible, it should be easy to reach the desired destination; it should be free from complexity, the urban elements should form a meaningful sequence while coming together and enable the experiencer to move easily in the city; the space should be easily remembered after it is experienced, and a clear image should be formed.

Spine Formation: Drifting, Spatial Hierarchy

Lynch (2011) states that the perception of the city is not holistic but fragmented, Harvey (2009) states that social space is complex and discontinuous, and urban spaces are functionally separated from each other, with some users avoiding some spaces. These views align with Corner's

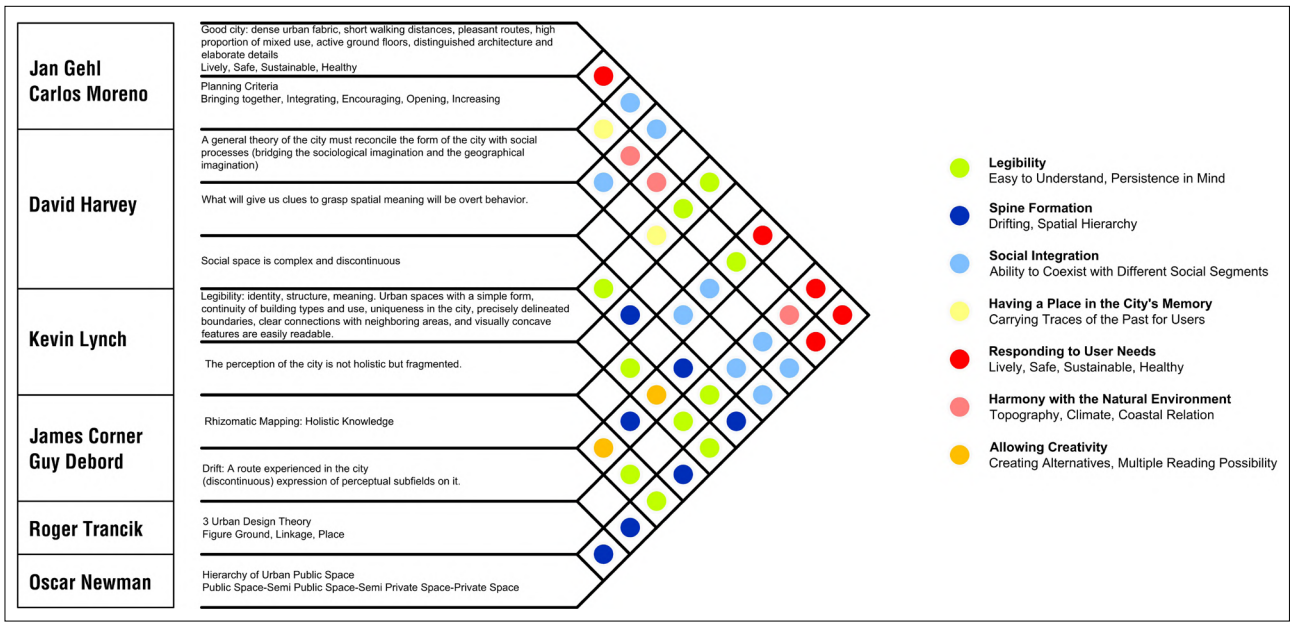

Figure 5. Criteria for the holistic view of urban space with matrix study.

(2011) concept of 'drift' derived from Guy Debord's work. Spine formation can be defined as urban space drawing the user between its spaces in a "good" way. During the movement from one point to another in the urban space, the spaces should be arranged in a qualified manner, articulating with each other to form a meaningful whole. While experiencing urban space, or drifting in the city, the harmonization of different parts with each other and the smooth transition from one to another can create a strong urban spine.

Social Integration: Ability to Coexist with Different Social Segments

In urban strategies, spatial decisions transform the social structure, and changes in the social structure shape the space. While making these decisions, the social welfare function—who will be affected, who will be harmed—should be taken into consideration (Harvey, 2009). It can be defined as the ability of different segments to coexist and form a non-exclusionary heterogeneous structure. It is the capacity of the urban space to accommodate individuals with different social characteristics without excluding them, not to appeal to a certain segment of society, and for individuals to feel that they belong to that place.

Having a Place in the City's Memory: Carrying Traces of the Past for Users

While historical urban textures reflect the social and spatial characteristics of their period, they can achieve this in an uninterrupted manner from the human scale to the upper scale. When the human-environment relationship is analyzed, a continuity in the process of renewal and adaptation can be seen (Arabacioğlu & Aydemir, 2007). The human being adapts to its environment and, on the other hand, creates a cycle by changing and reconsidering it. Şentürer (1995) states that people want to be in environments and spaces where past and present elements coexist and are reinterpreted. Urban space should contain layers of the historical process, and the features related to the process should be readable. The economic, political, and social dynamics and the ruptures in the historical process leave traces in the space.

Responding to User Needs: Lively, Safe, Sustainable, Healthy

According to Gehl's (2020) criteria for a lively, safe, sustainable, and healthy city, space should facilitate the essential needs of the city's daily life, such as going to work, shopping, and transferring from one place to another, while at the same time allowing for spending time, gathering, and resting. The ground floors in the area should accommodate many different functions within a 100-metre route, and the distances should be short and easily accessible. The height of the pavement, adequate lighting, and easy perception of pedestrian and vehicle separation make the space safe. With night use, it allows people to feel safe when they are in this place at night. Encouraging people to walk, cycle, and use public transport makes the space sustainable and healthy.

Harmony with the Natural Environment: Topography, Climate, Coastal Relation

Architecture and the city are in interaction with nature. A structure forms in nature; other structures are added to this structure, and a city forms. Then, this city transforms with the natural conditions (Özer, 2011). Urban texture should be in harmony with the components of urban geography such as coast, river, and topography, which constitute the natural environment data. In the process of articulating streets and forming squares, it is important how the relationship with natural environmental data is established. Urban textures in harmony with natural environmental data are easy to read and offer rich public life opportunities.

Allowing Creativity: Creating Alternatives, Multiple Reading Possibility

Among Henri Lefebvre's concepts of "spatial practice/perceived," "representations of space/designed," and "representational spaces/lived," the representational space, which is the lived space, contains the hidden images, meanings, and memories of life (Lefebvre, 2014; Aral, 2018). It enables the discovery of spatial features of the city that are hidden and pushed to the background, and the perception of different qualities when experienced at different times. The fact that urban space allows for multiple readings by offering fictions and relationships that will enrich the experiencer, and that it offers different options and routes by offering alternatives is important in terms of enabling the city to foster creativity.

Figure 6 shows the process of creating and testing the method in the study. The image shows the methodological perspective of the study from left to right.

The concept of public space, the quality of public space, and the representation of public space constitute the theoretical framework, with the researchers shown on the left. On the right, the stages of creating and testing the method of holistic view of urban space from theoretical knowledge are shown.

A HOLISTIC VIEW OF URBAN SPACE: ANALYZING PUBLIC SPACES AROUND MARMARAY KADIKÖY STATIONS

Cities have been changing with economic, political, and social dynamics since their existence. Although the main sources of these changes are technological inventions and innovations, administration, religion, finance, industry, and disasters are the main variables (Türkantoz, 2011;

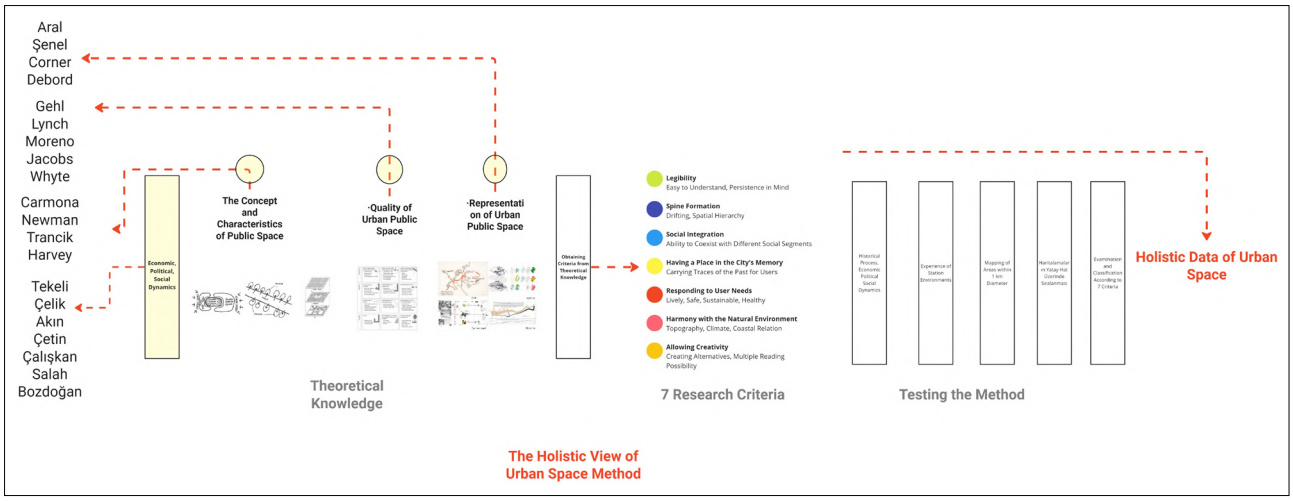

Figure 6. A holistic view of urban space.

Akın, 2012). The city of Istanbul has also been affected by the dynamics that shape urban spaces throughout the Byzantine-Eastern Roman Empire-Ottoman-Ottoman Republic of Türkiye process. The first urban fabrics, consisting of the Historic Peninsula, Üsküdar, and Kadıköy settlements facing the Historic Peninsula, have expanded by spreading first along the coastline and then toward the north in the historical process with economic, political, and social dynamics (Akın, 2012).

The settlement of Kadıköy dates back to 1000 BC. Until the advent of railway transport, Kadıköy comprised vineyard gardens and mansions of the courtiers along the coast, while to the north were the residences of agricultural families, with these areas connected by road networks. Before the railway was introduced, Kadıköy exhibited rural characteristics (Salah, 2013). One of the most significant developments of the 19th century was the migration of people outside the city walls and the establishment of sayfiye (summer resort) life in these areas (Çelik, 1996). With railway transportation, sayfiye life transitioned to suburban life with permanent residences. Historically, Kadıköy has evolved from rural-sayfiye-suburban to metropolis.

Kadıköy's main character derives from the road networks leading to the peninsula and the residential neighborhoods around it. In this system, between the northern Ziverbey road and the southern Marmara coast, urban textures with grid systems of irregular sizes are observed. While Bagdat Street forms the main axis of this system, the railway line integrates into this system according to the topography (Say & Özer, 2003).

There are nine railway stations in Kadıköy (Figure 7). The B2 suburban line was closed in 2013 and resumed service as Marmaray in 2019. Among these stations, Haydarpaşa and Kızıltoprak are not in use, Ayrılık Çeşmesi station has been newly added, and Göztepe station has been relocated. There are seven stations currently serving as Marmaray stations.

Within the scope of the study, the criteria are tested within a 1km diameter boundary circle around the Kadıköy stations. This distance was chosen because it can be easily walked in 15 minutes. After a 15-minute walk and site inspection around a station, the process was repeated for the remaining stations. The areas were mapped within a 1 km diameter and aligned horizontally. In Figure 8, the nine stations are listed horizontally, and the seven examination criteria are listed vertically. Stations in use are marked in blue, closed stations in gray, and stations added later in yellow. Green marks indicate the presence of an inspection criterion in the area; black marks indicate its absence. Notes taken during field inspections are displayed in the lower area. This rhizomatic mapping facilitates the correlation of information about the areas, allowing for a holistic reading.

Figure 7. Kadikoy mapping study and station points.

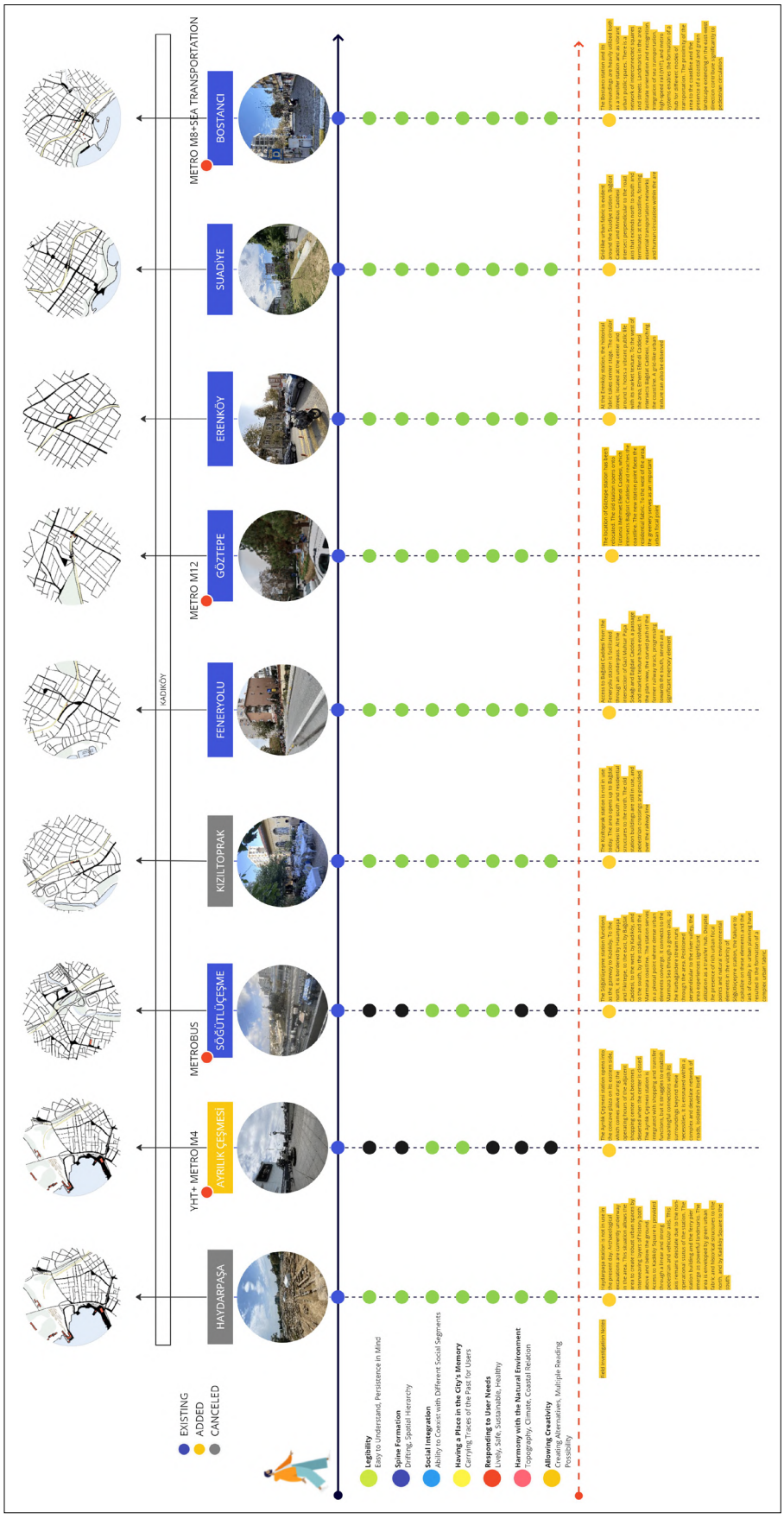

Figure 8. Marmaray Kadıköy stations rhizomatic mapping study.

After completing the mapping in Figure 8, the study was summarized with a holistic mapping study. Figure 9 shows that the green spots are concentrated around the old stations and their vicinities. Negative qualities (Ayrılık Çeşmesi, Söğütlüçeşme) emerge in the urban fabric, which is newly added and complicated by the intertwining of different transport systems, particularly around Ayrılık Çeşmesi and Söğütlüçeşme. This suggests that the quality of the urban fabric and public life around the old stations remains positive.

After the holistic analysis of the line, the station environments were categorized according to their characteristics. Each station environment exhibits a distinct urban structure and social life. Some have become transfer stations with the convergence of different transportation systems, others are primarily residential, some are characterized by urban spaces surrounded by buildings with square-like features conducive to public use, others open onto industrial areas, and some are oriented around shopping centers.

The seven examination criteria are elaborated through mapping studies within a 1 km radius of the stations. Stations where the qualities according to these criteria are prominent are analyzed. In the mapping study, road networks are drawn in black, and building blocks appear as gaps created by these networks. Where the black lines thicken, the street texture transitions into squares, enhancing public life. The train line is depicted with a yellow dotted line, coastlines and rivers in blue, and green spaces in green. Old railway station buildings and historical city landmarks are marked in red.

Legibility: Although Haydarpaşa station is closed to use, when its surroundings are analyzed in terms of legibility, it creates a strong image (Figure 10). Haydarpaşa station is bordered by the station building to the east, the green texture to the north, the urban texture of Kadıköy to the south, the Marmara Sea to the west, and the silhouette of the Historical Peninsula. The station point is situated at the center of strong urban nodes. Moving towards Kadıköy Square along the linear axis from the station, the green texture transitions into the urban texture. During the pedestrian experience around the station, which is enveloped by diverse urban textures, one texture gradually transitions into another. This facilitates the perception of the parts of the image formed in different time periods and enhances memorability.

Ayrılık Çeşmesi station, located to the northeast, contrasts with Haydarpaşa in terms of legibility (Figure 10). It is challenging for pedestrians to perceive the surroundings while reaching the central points along a weak and complex axis. Departing from the square defined by the shopping center renders the area desolate, and the continuity of public life is disrupted.

Although Söğütlüçeşme station and its environs possess prominent landmarks, they exhibit negative characteristics in terms of legibility (Figure 11). The area constitutes an urban texture where transportation systems converge and become entangled, with the railway line and Kurbagalıdere acting as boundary elements. As the railway line extends overhead, it generates unused spaces beneath it. Kurbagalıdere flows underneath the site, remaining unnoticed. Consequently, the components of the image cannot be perceived and assessed.

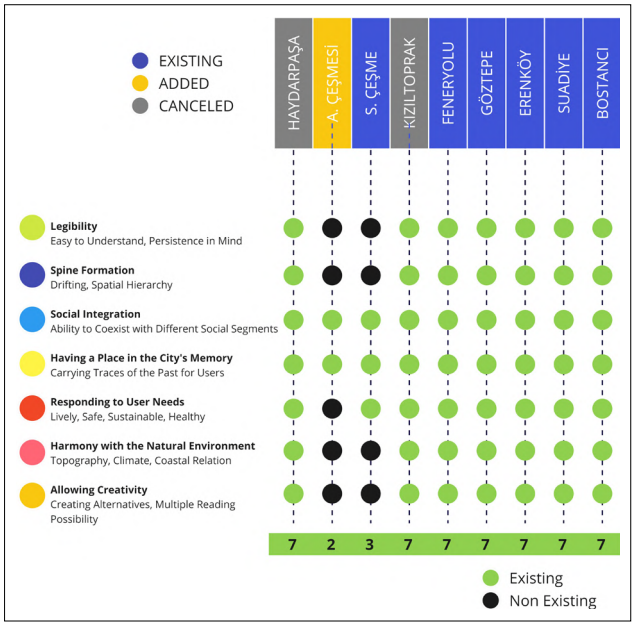

Figure 9. Marmaray Kadıköy Stations holistic mapping.

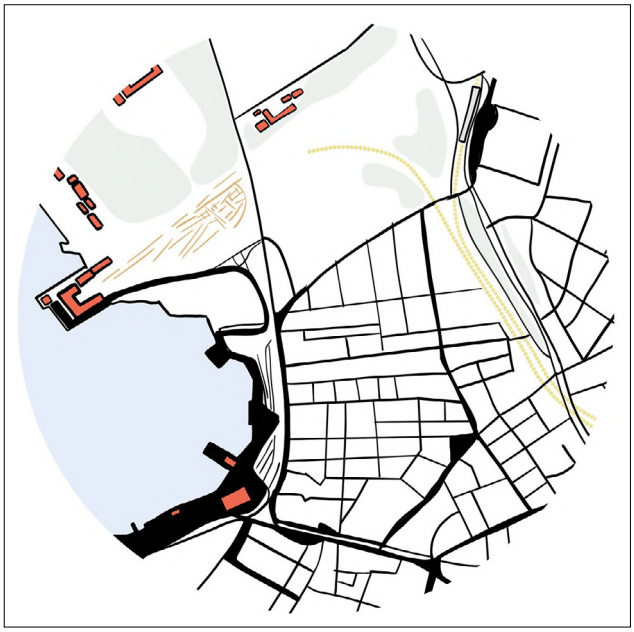

Figure 10. Haydarpaşa-Ayrılık Çeşmesi 1 km in diameter area mapping.

Figure 11. Söğütlüçeşme 1 km in diameter area mapping.

Spine Formation: Among the stations evaluated, Bostancı demonstrates robust spine formation (Figure 12). The arrangement of public spaces around the station guides individuals from one location to another, navigating them through the interstitial spaces. In Bostancı, urban spaces interconnect from north to south. Spaces broaden to form plazas, contract into streets, and then widen once more, delineating another plaza. This spinal configuration persists from the marketplace texture in the north down to the coastal line in the south.

From the north, the market is replaced by the square and the transport node, and then by sea transport and coastal use. The squares define strong rectangular public spaces surrounded by buildings.

Linear spine formation is observed in and around Suadiye station (Figure 13). The spine axis is formed in the north-south direction, between the Marmara coast in the south and Şemsettin Günaltay Street in the north. On this axis, buildings retreat and define small-scale squares and connect to each other.

The spine system formed in Suadiye is also strengthened by vertically intersecting important urban centers such as Bağdat Street and the coastline. Squares are formed at these vertical intersection points.

Figure 14 drift map shows the holistic spine formation of Kadıköy. There is a strong spine formation at Haydarpaşa and Kadıköy Square in the west direction, and this spine formation is interrupted towards the east where Söğütlüçeşme and stadium buildings are located. Kızıltoprak and Feneryolu station areas are connected to Bağdat Street by establishing a direct relationship with this street. Göztepe and Erenköy station neighborhoods form nodes in the north close to Fahrettin Kerim Gökay Street and vertical axes towards Bağdat Street and the coast. Around Bostancı and Suadiye stations, Fahrettin Kerim Gökay Street, Bağdat Street, and the coast are closest to each other, and a strong spine formation emerges.

Social Integration: Söğütlüçeşme station and its surroundings allow different age groups, genders, ethnic identities, and social lives to come together due to its proximity to Kadıköy. The fact that it is a transit center

Figure 12. Bostanci 1 km diameter area mapping.

Figure 13. Suadiye 1 km diameter area mapping.

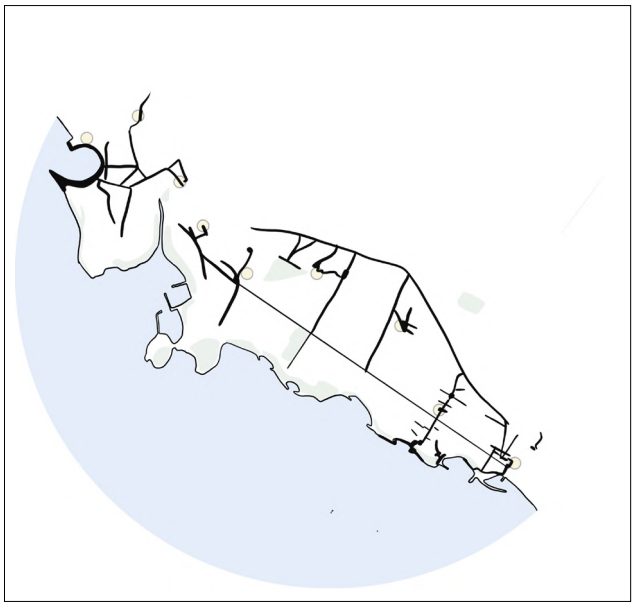

Figure 14. Kadıköy holistic spine formation and drift mapping.

and Kadıköy is a center of attraction allows people with different backgrounds to see and contact each other. Since this point is also the center of sports, arts, and activities, it brings together different functions. The coexistence of different functions enables the area to be socially enriched.

Having a Place in the City's Memory

Areas where historical environmental features are legible in urban spaces make users prefer these areas and want to be more present in the area. Haydarpaşa preserves its importance in the urban memory even though it is not currently used. Being the entrance threshold to the city in the past increases the importance of the area in the historical process. The fact that the station structure is one of the important urban images, as well as important points such as its integration with maritime transport, archaeological site, Kadıköy transportation axis, ensures that this area maintains its actuality. The spatial traces of Türkiye's economic, political, and social dynamics and transformation can be easily read in the area.

Responding to User Needs

When Kızıltoprak, Feneryolu, Göztepe, and Erenköy station areas are analyzed, it is seen that they are predominantly residential areas. These areas form neighborhood scale textures that meet the daily needs of people.

Kızıltoprak (Figure 15) and Feneryolu (Figure 16) stations have a close relationship with Bağdat Street with direct access, while Göztepe (Figure 17) and Erenköy (Figure 18) stations provide access via avenues extending in the north-south direction. In all four areas, there are facilities that allow both mandatory and optional needs to be met, making these areas full of life. At a distance

Figure 15. Kızıltoprak 1 km diameter area mapping.

Figure 16. Feneryolu 1 km diameter area mapping.

of 100 m, the coexistence of many different functions, active ground floors, and a lively bazaar life provide the criteria of fullness of life. Since business and residential buildings are located together, the spaces living day and night create safe environments. The urban texture that is appropriate for human scale and encourages pedestrian life strengthens the potential of these points to be healthy and sustainable. By observing people in urban spaces in these areas, it is seen that daily life movements such as going to work, spending time in urban furniture, shopping continue vividly.

Figure 17. Göztepe 1 km diameter area mapping.

Figure 18. Erenköy 1 km diameter area mapping.

Harmony with the Natural Environment

Traces of the natural environment can be read in current urban life. When the area is analyzed in a holistic manner (Figure 14), it is seen that the urban spaces developing parallel to the train line along the coast are shaped by establishing a relationship with the topography, coast, and green texture. Stations close to the coastal line (Haydarpaşa, Söğütlüçeşme, Bostancı) are shaped by river environments and coastal recreation areas. In the station distances away from the coast (Göztepe, Erenköy), it is seen that the altitude rises and access to the coast is provided by gridal urban textures. Bostancı station (Figure 12) and its surroundings are located in the centre of the river valley reaching the sea in the north-south direction. Söğütlüçeşme station (Figure11) is also located in the centre of the river valley in the north-south direction. These two stations are located in areas with similar geographical characteristics.

Allowing Creativity

The quality and quantity of urban elements in the public spaces around the stations make users want to visit these areas again. Qualified spatial formations also enable the formation of a strong urban image and allow the urban experience to be reconstructed over and over again in the mind. In this way, new relationship patterns regarding the urban space can emerge. Positive criteria in Bostancı station and its surroundings can create strong urban spaces. The formed spine allows different routes to be created so that the experience of the space can be differentiated each time.

CONCLUSION

With the method of a holistic view of the urban space created in the study, the areas were examined and mapping work was carried out. On-site examination, mapping, and evaluation of 9 station areas in Kadıköy were carried out according to the criteria. It is aimed to examine large-sized areas under equal conditions with systematic boundaries. These limits are to determine an area size of 1 km in diameter, to limit the inspection time to 15 minutes, and to repeat this for all station perimeters. Although stations such as Söğütlüçeşme and Bostancı are similar in terms of transfer function, it is seen that Bostancı station, which preserves the human scale and forms a strong backbone, is differentiated with this feature. Ayrılık Çeşmesi station cannot establish a relationship with the city except for shopping and transport functions. Since Haydarpaşa station is closed for use, it remains outside the urban life with its high potential. Feneryolu and Kızıltoprak stations enliven the daily life of the city due to their proximity to Bağdat Street and the coastline. Although the location of Göztepe station has changed, the old station area and the bazaar axis create spaces that easily meet user needs. Erenköy station opens to the bazaar area and creates an attraction area at a strong focal point, while spreading from this area to the surrounding area. Suadiye and Bostancı stations also create strong urban spaces at the nodes where the coastal and east-west transport systems converge. When the data obtained are evaluated, the following conclusions are reached for the method:

- The method enables understanding the holistic fiction of an urban area. It is possible to analyze the construction and social life of a dimensioned urban area at eye level and on the plan plane.

- The method of a holistic view of urban space enables the formation of urban public spaces and urban textures to be analyzed with background data.
- Holistic data is reached by induction. Partial data are brought together, and information about the whole is obtained.
- It can reveal the common or differentiating features of places that are distant from each other in terms of distance.
- It is possible to reproduce spaces through investigation and mapping. Through investigation and mapping, the hidden relationships between spaces, the prominent qualities of the space, or the qualities that are common with different spaces can be realized and revealed.

The study proposes a method to understand and analyze urban space in a holistic way. Through this method, which is called a holistic view of urban space, new studies can be carried out for purposes such as data collection in urban spaces and revealing the relationship between different urban spaces. In future studies where the method will be tried in different urban spaces, it is thought that different readings can be provided for urban spaces by changing the limitations such as the area diameter and the time spent in the area.

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