

Mediterranean Port City Identity: The Walls of Galata and their Spatial Impacts

By Elif Ceren Tay* & Yasemen Say Özer[±]

The Galata Region, located southwest of the Bosphorus, has developed as a harbor settlement since ancient times. With the establishment of the Genoese settlement in 1267, it became an important center in the trade network between the Mediterranean and the Black Sea, maintaining its port identity until the 1950s. The area was surrounded by walls that conformed to the natural topography, serving both defensive and commercial functions, and the city gates connected the port and urban fabric. During the zoning works in the 1950s, the walls were expropriated, and the construction of wide boulevards significantly altered the urban texture. After the 1980s, the relocation of industrial zones from city centers and transportation infrastructure projects led to the weakening of Galata's port identity, while coastal interventions after 2011 and the construction of the Golden Horn Metro Bridge largely erased the remaining traces of the walls and gates. This study examines the relationship between the walls and gates in Galata and trade, as well as their impact on urban form, within the framework of the fringe belts theory based on a morphogenetic approach, using historic maps and field observations. The port area boundaries have been defined starting from Karaköy Square along the coast up to the Golden Horn Metro Bridge. The historical development of the port function has been analyzed in four phases: establishment, expansion, specialization, and regionalization. Each phase provided the basis for the reshaping of fringe belts in parallel with the transformation of the urban form. To reveal the spatial reflections of these processes, the 1858 d'Ostoya, 1905 Goad, 1944 Schneider-Nomidis, and 1970 Arnould maps were comparatively analyzed. The analyses show that the fringe belt structure in the Galata port area has been shaped according to historical, physical, and functional breaking points and that city walls and gates played guiding spatial roles in these transformations. As a result, the fringe belt structure of the Galata Region represents a unique morphological example within Istanbul's polycentric urban development model, embodying both continuity and change.

Keywords: Galata Region, Galata City Wall, Istanbul, Port City, Historical Maps

Introduction

Throughout history, ports have established complex relationships with cities as global networks that shape the circulation not only of goods but also of social, cultural, and intellectual phenomena (Hein 2011, Xu et al. 2025). This interaction

*Research Assistant, Yildiz Technical University, Faculty of Architecture, Department of Architecture, Turkey.

[±]Associate Professor Dr., Yildiz Technical University, Faculty of Architecture, Department of Architecture, Turkey.

has transformed port cities into complex urban areas shaped by unique social dynamics, changing environmental conditions, and continuous flows of people and materials (Rossetto et al. 2021). The relationship between the port and urban form dates back to the very beginning of settlement and directly influences the form of the city. Hoyle (1989) addressed this relationship through the concept of the port-city interface, pointing to the existence of a transitional zone between port activities and the urban fabric. Over time, industrialization, globalization, and planning policies have significantly transformed the interactions within this interface (Hein 2011, 2016, 2018, Schubert 2018).

Galata has been an important port settlement throughout history, both regionally and internationally. Galata Port, operational from the—as far as is known today—7th century BC until the 1950s, has played a central role in terms of trade and diplomacy for centuries. The port's spatial configuration was shaped by the geographical location and topographical characteristics of the region, hence considerably impacting the built form of the city. Under the influence of Genoese commerce, Galata adopted the characteristics of a Medieval Mediterranean city and was encircled by walls as a necessity of this identity. But the fast urbanization that happened around the world between 1950 and 1980, along with neoliberal policies, made the Galata Port dysfunctional and eventually disappeared. Consequently, the port-connected urban fabric underwent significant changes.

The aim of this study is to examine the formal structure of the walls and gates in Galata, a port city, and their impact on the urban space through historical maps and on-site observations, as well as to document their current condition. In this regard, the study is based on the historical-geographical approach situated within the discipline of urban morphology. The study looks at how the city has changed over time by using the term of the fringe-belt, one of the characteristic analytical tools of this approach, which is a key tool in understanding urban shapes and layouts.

Literature Review

Urban morphology is a specialized field that examines the elements that constitute the form and physical fabric of cities, the conditions under which these elements come together, and the processes of formation, change, and transformation of urban form along with their actors (Kropf 2017). This field analyzes the origin, form, layout, function, and architecture of the built environment within a historical process, revealing the spatial transformation of cities over time and the social, cultural, and physical impacts of this transformation (Conzen 2004, Madanipour 1996). The Urban Morphology Research Group (1990) defines urban morphology as the study of the physical (or built) fabric of urban form and the people and processes that shape it (Marshall & Çalışkan 2011). At the same time, urban morphology, which evaluates the different layers of the city from past to present, contributes to a better understanding of the current urban structure and supports the development of spatial foresight for the future (Oliveira 2024).

The theoretical framework of urban morphology is based on three fundamental

components: form, resolution, and time. Form defines the ratio of built to unbuilt space in the built environment and the spatial relationships between these elements, while resolution encompasses various analytical levels ranging from the building scale to the regional scale. Time allows for understanding the evolution of urban spaces within historical processes (Moudon 1997). In this context, comparative urban studies enable the evaluation of similar or contrasting phenomena in different contexts, allowing for a more comprehensive analysis of specific places, events, or situations (Ward 2008, Rossetto et al. 2021). Especially in the case of complex structures such as port cities, urban morphology provides significant insights into understanding the impacts of port activities on urban development by juxtaposing seemingly incomparable urban forms and development processes (Rossetto et al. 2021).

The historical-geographical approach has been adopted as a fundamental principle in Conzen's studies on urban morphology and enables the understanding of the evolution of urban form within historical processes through conceptual tools such as the morphogenetic method, cartographic (map-based) representation, and terminological precision (Arat 2022). This approach also makes the comparative analysis of the formal development of cities possible. It argues that urban form is composed of the integration of patterns at different scales and levels of permanence. The urban structure is shaped by the combination of the two-dimensional city map—comprising streets, blocks, plots, and building plans—with the three-dimensional configuration of the building fabric and the multi-layered composition of land use. This composition creates similar morphological units or character areas within the city, and these gradual, interwoven transitions are regarded as the spatial expression of the city's historical development (Ünlü 2018).

The historical-geographical approach is based on the method of producing and comparatively analyzing maps to understand the shaping of cities throughout historical processes. This approach uses terms like "fringe-belt," "burgage cycle," "morphological region," "form complexes," "morphological frame," "morphological period," and "morphotope" to analyze and compare maps (Arat 2022). Since the Galata port area is separated from the urban settlement fabric by the city walls functioning as a line of fixation and displays a spatial configuration distinct from the residential area, the term the fringe-belt has been adopted as the main analytical tool to examine the transformations occurring within this interface.

The Impact of Fringe-belts on Walls and Commercial Areas in the Historical-Geographical Approach

The concept of the fringe-belt is an analytical tool frequently used to analyze the historical development of urban form and has been diversified and reinterpreted in different cultural contexts in recent years (Ünlü 2012). When considered together with the analytical tools of the historical-geographical approach, it provides a strong theoretical framework to explain the formal structure of urban transformation processes.

This term elucidates both the processes of urban expansion and the enduring impact of historical barriers—particularly city walls—on spatial organization. The clear differences between areas inside and outside the walls show the historical layers of how cities are shaped, while the "closed fringe belts" created by the walls

help us see where things have stayed the same or changed in the city layout. Consequently, the examination of fringe belts in historical cities is an essential approach for discerning regions of spatial continuity and alteration (Arat 2022, Oliveira 2024).

Fringe belts are structural areas characterized by large and open spaces, shaped by factors such as environmental conditions, costs, and geographical advantages (Spolaor & Oliveira 2022). Their typical association with large ownership units determines the distinctive character of these belts within the urban fabric (Ünlü 2022). In this context, while the walls function as a boundary barrier surrounding the city, the area inside the walls is predominantly residential; the region between the walls and the port is characterized by commercial functions. In the study, the morphological distinction between these two functions is examined in detail by considering the port area as a fringe belt.

Methodology/Materials

The research examines the development of port activities in Galata from their inception to the present day within the context of historical turning points that influenced these activities (establishment, expansion, specialization, and regionalization) (Hein 2011, 2016, 2018, Schubert 2018) and comparatively analyzes the formal and functional changes occurring in the transitional zone between the settlement area and the port strip. This intermediate zone, separated from the walled settlement area and characterized by heterogeneous and coarse-grained structures with distinct functions, qualifies as a fringe belt. The comparative analysis focusing on the walls, city gates, roads, and related structures will be conducted to examine the fringe belt, providing a strong framework for understanding the formal transformations of the area. In particular, the periods after 1860, 1923–1950, 1950–1980, and 1980–2025 are critically important in terms of planning decisions, zoning practices, and transportation interventions that have shaped the formation and transformation of the fringe belt in Galata Port. Historical maps are used as primary sources for evaluating these processes (Conzen 1988, Knox & Pinch 2006).

A total of thirty-one high-quality maps of Galata, dated between 1776 and 2001, have been identified. From among these, four maps representing each historical period were selected (Table 1). The selection criteria included the maps' scales (1/2000, 1/1000, and 1/500), their basis in measured drawings, and their ability to reflect key spatial parameters such as the port strip, street-block structure, walls, and gates.

Table 1. *List of selected Maps*

Period	Year	The Map Name
Setting (Ancient Period-1800)	1858	Plan général de Galata Péra et Pancalti
Expansion (1800-1900)	1905	Plan d'assurance de Constantinople. Vol. II - Péra & Galata (24-45)
Specialization (1900-1950)	1944	Galata, topographisch-archaologischer plan
Regionalization 1950-2024	1986	J.-L. Arnaud ile P. Philippon 1970- Galata

d'Ostoya developed the Plan général de Galata Péra et Pancalti Map to meet the municipality's need for a cadastral plan in 1858–1860 (Figure 1a). The map, scaled at 1/2000, depicts the urban configuration prior to the Great Pera Fire of 1870 (Özbay Kınacı et al. 2021). The map also records the historical road network, including dead-end streets and the former coastline prior to any land reclamation, the demolition of the city walls in 1864, and later urban design initiatives. The insurance maps created by C. E. Goad in 1905, Plan d'assurance de Constantinople (1/600 scale), are significant as they illustrate the effects of extensive urban planning initiatives undertaken in Galata during the first half of the 19th century on the city's configuration (Figure 1b). The Topographic and Archaeological Plan of Galata, published in 1944 by Alfons Maria Schneider and Miltiadis Isaak Nomidis, documents the historical topography of the city (Figure 1c). The map records the general structure of Galata after the proclamation of the Republic and prior to the post-1950 redevelopment activities. The map titled 1970 Galata–Istanbul, on the other hand, reveals the physical transformation of Galata after the 1950s (Figure 1d).

Figure 1a. *d'Ostoya Map*



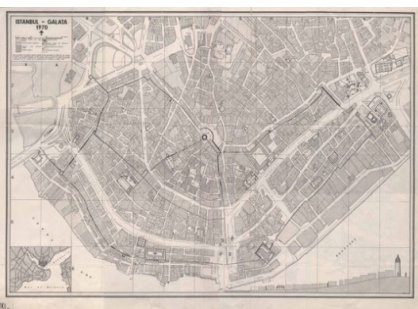
Figure 1b. *Goad Map*



Figure 1c. *Schneider and Nomidis Map*



Figure 1d. *Galata–Istanbul Map*



Source: SaltMap

For the analyses to be based on accurate qualitative and quantitative data, the selected maps must share the same coordinate system and measurement standards (Podobnikar 2009, Rumsey & Williams 2002). To evaluate the planimetric accuracy of historical maps, topographic measurement errors were first identified and then corrected in a digital environment. Historical maps in JPEG format were imported into AutoCAD and scaled using the Galata Tower as a reference point. The positions of the building blocks were considered fixed based on a contemporary map prepared through photogrammetric methods, and the historical blocks were aligned accordingly within the same coordinate system. Although efforts were made to preserve the

original characteristics of the historical maps, the presence of certain uncertainties should be acknowledged. All maps were finally transferred onto a unified metric coordinate plane and visualized using Adobe Photoshop. Maps are already included in the discussion heading as Figure 12.

Findings

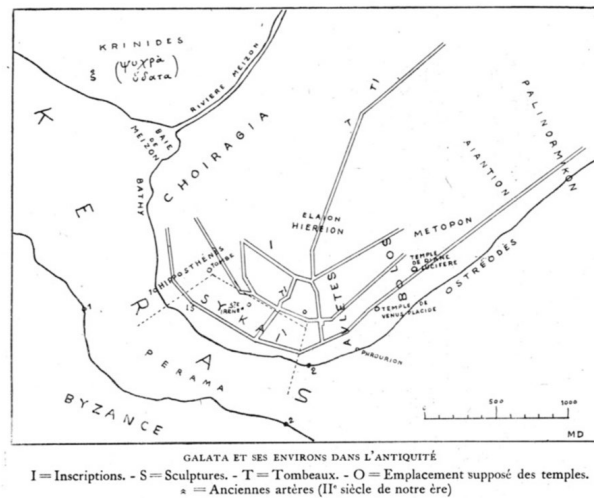
Galata is in Istanbul, at the northern entrance of the Golden Horn, southwest of the Bosphorus (Figure 2). Historically, it has served as a significant port settlement, both regionally and internationally. Its coastal access to the Golden Horn and the Bosphorus provided Galata with many natural piers, while the fan-shaped topography surrounding the ports along the coast allowed the settlement to expand along the ridgeline into the hills. Oliveira (2024) emphasizes that the First Expansion Area located in Galata's port zone possesses a strong spatial character largely defined by the presence of water. This area consists of small urban blocks composed of numerous parcels and continuous building frontages, as well as a variety of street and block patterns (Oliveira 2024).

Figure 2. *Location of Galata Region*



Source: Created by author 1 via Google maps

It is known that in Galata, in the 7th century BC, there was a port called "Hupote Suke," and immediately behind it a settlement called "Sykæ" (d'Alessio 1946, Herodotos 2006). Strabon (2000), notes the existence of a port at present-day Karaköy dock in 50 BC. The earliest urban representations from the 5th century suggest the existence of a settlement named Sykai in Galata, featuring a principal street with columns at sea level and a dock. This public route is currently referred to as Tersane Street (d'Alessio 1946) (Figure 3). Perşembe Pazarı Street, Mumhane Street, and Voyvoda Street coincide with the thoroughfares referenced in antiquity (Glysus 2007).

Figure 3. Galata in 5th Century

Source: *d'Alessio, 1946*

During the Middle Ages, Genoa emerged as a hub of international commerce, creating an extensive trading network that encompassed the Mediterranean, Aegean, Marmara, and Black Seas, while also founding colonies in the port cities within this network (Nicol 2000). The colony cities founded by the Genoese transformed the Mediterranean into a commercial center and a primary locus of cultural exchange. With an agreement made in 1267, the Genoese developed this trade network with their colonies in the Mediterranean and Black Seas, centered on Galata. During this period, Galata became an important transit point and a dynamic diplomatic center (Eyice 1969, Kuban 1996, Vasilev 1958).

Fortifications encircled Galata, as they did with several settlements in the Mediterranean area (Camiz & Verdiani 2016). The Genoese constructed a wall system in Galata from 1316 to 1453 to extend their colonies. The Genoese constructed the wall system based on remnants of walls erected in 296 and 528, adhering to the existing defensive lines (Kuban 1996). The initial privileged zone, enclosed by walls, encompassed an area beginning at the coastline and extended to Voyvoda (Banks) Street, including Karaköy Square (Eyice 1969). The wall gates of this period established a direct connection with Perşembe Pazarı and Tersane streets (Sağlam 2020). Consequently, we can regard these two avenues as the principal axis of the former urban structure. These streets serve as the principal conduits for Galata's commercial and transit network, owing to their connections with the ports.

The collapse of the Eastern Roman Empire in 1453 was a turning point for Galata, and the Genoese continued their economic activities under Ottoman rule as an autonomous commune under the name "Magnifica Communità di Pera" until 1805 (Akıncı 2021). Throughout this period, Galata preserved its commercial character, leading to the construction of inns and caravanserais in the area (Mantran 1979). During the 18th century, the density of commercial buildings, offices, warehouses, and shops on Voyvoda Street escalated, hence maintaining the region's economic significance (Akin 2002). In the same period, structures designed with the architectural plans and facades characteristic of European commercial buildings influenced the urban fabric of Galata.

Setting Period-(Ancient Age-1800)/1860 Plan Général de Galata Péra et Pancalti

The initial settlement of port cities concentrated on commercial edifices and open markets established directly on the ports or in their vicinity (Hein 2011, 2016, 2018, Schubert 2018, Rossetto Ribeiro et al. 2021). The Plan général de Galata Péra et Pancalti Map, produced between 1858 and 1860, illustrates the urban configuration of the Galata District, reflecting the port-trade requirements of that era.

Galata is a city characterized by walls and towers that bear traces of Mediterranean architecture. These walls both served a defensive function and formed a framework that organized the city's social and commercial activities. As the city developed, the walls likewise increased, and this growth facilitated Galata's dynamic and adaptable urban development. The d'Ostoya Map indicates that the walls along Bankalar Street on the southern boundary of the first expansion zone and those along Karaköy Street on the western boundary were omitted, while the remaining walls were fully retained. The d'Ostoya Map reveals the strong relationship between city gates, piers, and commercial buildings. Each gate is directly connected to the ports along the Golden Horn and serves as a central hub for key functions such as trade, customs, and population registration (Figure 4). The streets surrounding the gates shaped the built environment as designated areas for craftsmen and merchants. These roads, located between the residential area and the port zone, link the dense and compact built fabric with the more dispersed and small-scale commercial structures of the port. The proximity of the Kürkcü, Yağkapanı, and Balık Pazarı gates, in particular, contributed to both the high building density and the concentrated development of port activities in this area. The city wall, as a fringe-belt, creates a heterogeneous structure between the port and residential zones in terms of form, function, and density, whereas this heterogeneity diminishes around the gates. The gates play a significant role as physical and functional thresholds between areas with differing morphological characteristics.

Figure 4. *The Port Wall and Gate in d'Ostoya Map*



Figure 5. *The Kurşunlu Khan, Yelkenciler Khan, Galata Bedesten in d'Ostoya Map*

The Karaköy Gate, opening onto Karaköy Square located at the strategic junction of the Golden Horn and the Bosphorus, functioned as a significant transitional point between the port area and the residential fabric. Over time, this square became a focal point where trade and transportation activities concentrated. Following the international trade agreements of 1838, the construction of bank buildings in the area by Western countries initiated a process of spatial transformation in Karaköy Square; the demolition of the Karaköy Gate in 1857–1858 made the expansion of the square possible (Kafesçioğlu 2016, Okur, 2011) (Figure 6). Through the interventions of the Sixth Municipality Department (Altıncı Daire-i Belediye), the section where Karaköy Street reached the waterfront was transformed into a square, during which buildings such as Havyar Han and Komisyon Han were also situated around the square. Havyar Han represents an example of an organically developed traditional urban space, while Komisyon Han reflects the early modern architectural approach of the period. Today, Karaköy Square serves as an integrated threshold area that provides morphological continuity between two different expansion zones, characterized by homogeneous urban blocks and a coherent street layout.

Figure 6. *The Komisyon Khan, Havyar Khan in d'Ostoya Map*

Expansion Period (1800-1900)/1905 Plan d'assurance de Constantinople

The growth process of port cities is typically linked to the transformations initiated by the industrial revolution. Throughout this period, port-related activity encompassed industrial operations as well. Generally, there was an expansion of docks, piers, and warehouses. (Hein 2011, 2016, 2018, Schubert 2018). Moreover, numerous administrative bodies were instituted to guarantee urban governance, legislation was implemented, and extensive urban planning initiatives were conducted.

The 6th Department Municipality was the inaugural municipality founded within the Ottoman Empire in 1857, adhering to European principles. The 6.th Department Municipality's most drastic action was the destruction of the Galata walls. The Goad Map illustrates the damage inflicted on the walls following the decision to dismantle them in 1864. During this period, a significant portion of the outer walls and coastal walls was dismantled. Despite the physical disappearance of the walls, it is observed that the port area still exhibits the characteristics of a fringe belt. The small-scale, buildings positioned adjacent to the wall preserve the spatial continuity of this area and maintain its function as a historical boundary. The increase in larger-scale commercial and administrative facilities located behind these buildings indicates that this belt serves not only as a physical boundary but also as a functional transition zone. The dense construction concentrated around the gates demonstrates that these areas function as threshold points enabling transitions between both sides of the fringe, thereby revealing that spatial continuity is maintained through these thresholds.

Significant alterations on the Goad Map have occurred in the transportation infrastructure and roadways, accompanied by extensive road expansion initiatives. The region's organic road configuration, featuring several dead-end streets, has evolved into a design comprising two primary arteries oriented east-west, along with secondary roads linked to them (Özbay Kınacı et al., 2021). During this process, streets including Grande Galata Street (Grande Rue de Galata), Yorgancılar Street (Rue de Yorghandjilar), Yenikapı, Şişhane, and Büyük Hendek were established. Furthermore, Yüksek Kaldırım Street, linking Karaköy to the Galata Tower, has been renovated (Özbay Kınacı et al. 2021). Following the demolition of the city walls, a series of urban modifications were implemented on Mumhane Street (Orçun Kafesçioğlu 2016), with Gümrük Street and Mumhane Gate emerging as the principal access points along the former coastline. The Kurşunlu Mahzen Gate serves as the point where Gümrük Street and Mumhane Gate converge with the sea. Furthermore, the port in the vicinity was filled, and Rıhtımlar Street was inaugurated in the reclaimed space. The construction of the Galata Bridge commenced in 1845, coinciding with the rise in economic activities in Galata (Çelik 2016).

On the 1905 map, Kurşunlu Han, Galata Bedesten, and Yelkenciler Han retain their original architectural layouts and commercial purposes (Figure 7). Land reclamation along the shoreline led to the expansion of the pier areas, resulting in a more structured coastal character. This transition enhanced business operations in the region and stimulated new construction. Particularly in the region between Kalafatçılar Street and the coastline, the newly constructed edifices predominantly comprise warehouses and small commercial establishments. This scenario underscores the

significance of commerce and storage roles within the urban structure of the era, closely linked to the region's economic activities.

Figure 7. *The Kurşunlu Khan, Yelkenciler Khan, Galata Bedesten in 1905 Goad Map*



The bridge links to Karaköy Square. The location of the Komisyonu Han was altered due to new transportation infrastructure, resulting in the reconstruction of the building as a single level (Orçun Kafesçioğlu 2016) (Figure 8). In line with these developments, Karaköy Square has strengthened its connection with the port and has transformed into a more defined urban space. Although it possesses a homogeneous built fabric, its location on the boundary of the fringe belt places it in interaction with the surrounding heterogeneous textures. Through its connections with both the urban core and the reshaped waterfront, it functions as a permeable and transformative intermediary space within the fringe belt.

Figure 8. *The Kurşunlu Khan, Yelkenciler Khan, Galata Bedesten in 1905 Goad Map*



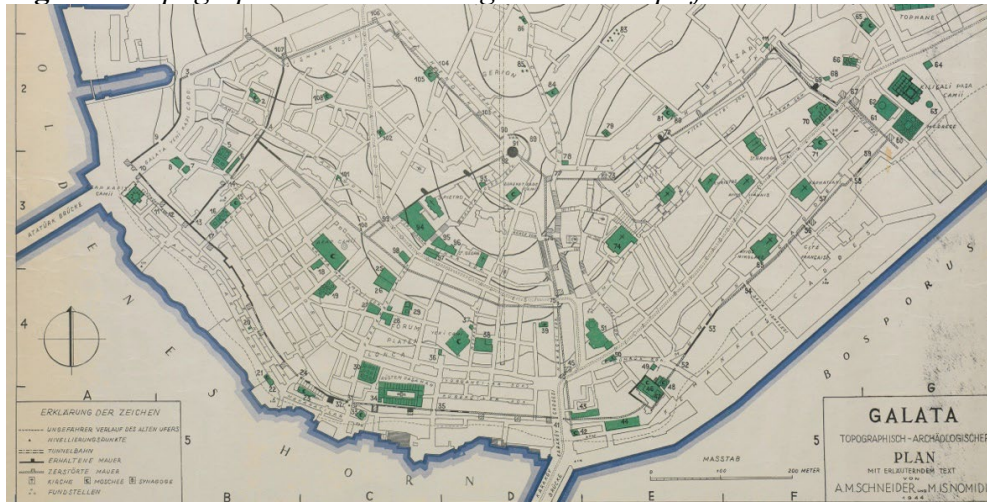
Specialization Period – (1900-1950)/1944 Galata, topographisch-archaologischer Plan mit erläuterndem Text

Throughout the specialization period, port facilities experienced substantial modifications to accommodate large cargo vessels, container ships, oil tankers, and transports for grain and ore. More substantial vessels necessitated seabed excavation and/or the establishment of extensive new piers to ensure enough water depth. In some instances, these new mandates necessitated the relocation of port activities from their original sites (Hein 2011, 2016, 2018, Schubert 2018).

The declaration of the Republic on October 29, 1923, was a decisive turning point for the Republic of Turkey; radical political and socio-cultural transformations took place with the Republic. These reforms promoted the adoption of contemporary and scientific methodologies in urban planning research and established the foundation of modern Turkish infrastructure. In this context, Mustafa Kemal Atatürk assigned the responsibility of urban planning for Istanbul to French planner Henri Prost in 1936. Prost sought to modernize the city in accordance with the Republic's Westernization objectives while simultaneously prioritizing the preservation of its historical fabric. Prost's strategy was to maintain the operational integrity of the ports and industrial areas in Galata and the Golden Horn while endeavoring to link the two banks of the Golden Horn through the establishment of new squares and transit lines and to emphasize economic advancement. (Bilsel 2011, 2010, Aydemir 2008, Tekeli 2021).

Schneider and Nomidis' 1944 Topographic and Archaeological Plan Map of Galata (Figure 9) is a detailed monograph that illustrates the spatial impacts of the Prost Plan and the systematic urban planning techniques employed following the Republic's declaration. The map indicates that the outside and inner walls have been predominantly obliterated. However, the sea walls from the western boundary of the 1st Expansion Zone to the Galata Bridge have remained relatively intact. The section of the walls spanning from the Galata Bridge to the northwest, delineating the western boundary of the 2nd Expansion Zone, has mostly endured, but the structural integrity of the walls in other regions has been considerably compromised. Within these regions, one can discern only remnants and vestiges at specific locations.

The 1944 map indicates a substantial rise in building along the shoreline between the Atatürk Bridge and the Galata Bridge. In the area characterized by extensive construction, particularly along the coastline, small-scale warehouses and commercial structures situated between Kalafatçılar Street and Fermenciler Street have been razed, replaced by large-scale factories and industrial facilities. The areas that developed around the city walls can be defined as transitional zones that have undergone functional transformation with the expansion of the city center. While this belt, in which the walls act as a spatial boundary, delineates the limits of the old urban fabric, the modern and large-scale structures located beyond the walls represent the new dynamics of urban development. The proliferation of these facilities has limited access to Kalafatçılar Street, a main thoroughfare adjacent to the coast, for the ports. This situation exemplifies a transition process aligned with the Prost Plan's objective of maintaining the functional integrity of industrial zones. Conversely, Kurşunlu Han, Yelkenciler Han, and Galata Bedesten maintain their original architectural layouts.

Figure 9. *Topographic and Archaeological Plan Map of Galata*

Source: Salt Research, 2024

Regionalization Period – (1950-today)/1986-Istanbul-Galata 1970

Regionalization is the most recent phase in the growth of port cities, significantly influenced by pivotal transformations including globalization, containerization, widespread motorization, and the transition from coal to oil. These transformations have generated increased land requirements for the establishment of refineries and transshipment facilities. The advent of larger and more automated port terminals has displaced industrial operations and port facilities from urban areas. The regions at the interfaces of the historic port cities have emerged as appealing experimental zones for architects and urban planners (Hein 2011, 2016, 2018, Schubert 2018).

Post-1950, modernization efforts in Istanbul initiated the development of industrialization. The city's burgeoning population and the prevalent usage of motor vehicles emerged as significant factors of urbanization. During this decade, urban development projects were predominantly confined to road extension and traffic management (Tuna 2019, Tekeli 2021, Şahin 2015, Gül 2024). The map created by M. Papatriafantafilou and J. L. Arnaud (1986) illustrates the physical configuration of Galata in 1970 and depicts the impact of urbanization efforts from the 1950s on its urban morphology (Figure 10).

Figure 10. *The 1970 Istanbul-Galata Map (1986)*

Source: Salt Research, 2024

The demolitions associated with road construction in the 1950s inflicted damage on the extant sections of the walls, and the remaining portions of the seawalls have also been significantly dismantled. According to the 1970 Istanbul-Galata Map, the parts of the walls descending from the Galata Tower to the northwest and the parts located on the eastern border of the 5th Expansion Region and the northern border of Tophane constitute the last remnants of the walls. Only a minuscule portion of the Galata Walls remains in incomplete remnants and fragments.

The expansion of Tersane and Kemeraltı Streets, along with the establishment of Karaköy Square, constitutes significant modifications that stand out on the map. The expansion and convergence of Tersane and Kemeraltı Streets markedly diminished the built-up area ratio, with Tersane Street's width increasing from 7 meters to 30 meters and Kemeraltı Street's breadth from 7 meters to 21 meters. The newly constructed square that supplanted Karaköy Street encompasses an area of 11,000 square meters and is 80 meters in width. During this time, Karaköy Square evolved into a transport hub, and the inauguration of the Karaköy underpass in 1964 enhanced the square's role as a traffic junction (Orçun Kafesçioğlu 2016). Refik Saydam Street, delineating the western boundary of the district, and Maliye Street, linking Kemeraltı Street to the coastline, are newly inaugurated thoroughfares in this development. Furthermore, the roadway was expanded by eliminating the stairs on the Yüksek Kaldırım roadway to accommodate vehicular traffic; nevertheless, this expansion resulted in the street becoming too steep. This intervention led to the abrupt transformation of the historical street fabric into wide arterial roads and clusters of large-scale buildings located behind them. As can be observed through the map, the traditional fabric in Galata was fragmented under the influence of post-1950 modernization policies, and the historical character of the area was, in places, erased.

The map indicates the existence of substantial industrial facilities situated south of Kalafatçılar Street and Fermenciler Street. Galata Bedesten and Kurşunlu Han maintain their original architectural layouts, while Yelkenciler Han, although retaining its courtyard typology, exhibits a severe deterioration in its spatial arrangement. During the development of Karaköy Square, edifices like Komisyonu Han, Azize Police Station (Seyrüsefain İdaresi), Galata Pier, and Havyar Han were razed (Orçun Kafesçioğlu 2016).

Following 1980, the influence of global neoliberal policies intensified the deindustrialization of urban centers, prompting the relocation of port facilities to the city's periphery. This shift entailed the dismantling of industrial infrastructure in Istanbul and the transfer of port operations from the Golden Horn to Tuzla between 1984 and 1989. As a result, the industrial heritage along the Galata shoreline was gradually eroded, paving the way for new waves of capital investment in the coastal zone (Şen et al. 2024). The outdated industrial edifices in this fringe-belt region have become targets for urban redevelopment and new capital investments.

Efforts to terminate industrial activity on the Golden Horn persisted until 1994, after which, in 1995, international initiatives were initiated to convert these regions into centers for congress, culture, and the arts. The evolution of shipyards and ports resulted in the recognition of these processes as a worldwide phenomenon (Butler 2007). Since 2011, urban interventions along the Galata shoreline and the Golden Horn area have underscored the impact of prior demolitions on spatial coherence. Although the Haliç Metro Bridge, completed in 2012, aimed to solve transportation challenges, it has permanently endangered the Golden Horn and Süleymaniye silhouette and damaged cultural heritage sites such as the Galata Walls. The demolition of industrial zones, the damage to the building stock caused by the construction of the Haliç Metro Bridge, the widening of Tersane Street, the opening of Refik Saydam Street, and the destruction of the built environment in Karaköy Square collectively led to a significant reduction in structures in the area between Tersane Street and the coastline. As a result, the balance between built and open spaces was disrupted, and open areas increased noticeably.

Discussion

The evolution of Galata as a port city has significantly influenced its social and economic framework as well as its urban planning methodologies. This evolution has become particularly apparent through fundamental urban components such as walls, gates, roadways, and structures. The swift transition observed in the region since the onset of the 19th century is directly attributable to the alteration of these elements.

The walls of Galata are significant edifices that embody the area's historical and defensive roles. Beginning in the mid-19th century, the 6th Department Municipality resolved to dismantle the walls, resulting in their significant destruction. The Goad Map illustrates the demolition of the walls subsequent to the decision made in 1864. The removal of the walls reconfigured Galata's intra-city transit and commerce, leading to the expansion of its transportation network and the development of new highways and trade zones in the surrounding districts. The 1944 map distinctly illustrates this alteration; a significant segment of the outer walls and coastal barriers was dismantled, although the walls surrounding the Galata Tower were mostly maintained. The losses incurred to establish new infrastructures and transit routes led to the deterioration of the region's historical fabric.

The city gates and transit infrastructure in Galata were crucial to the economic and cultural development of the area. In the 19th century, the efforts of the 6th

Department Municipality facilitated the transition from organic road textures to broader and more uniform avenues, and the dismantling of the city walls resulted in the establishment of new transportation arteries. The Goad Map illustrates this transition process and depicts configurations including Büyük Galata Avenue, Yorgancılar Avenue, and Karaköy Square. The expansion of Yüksek Kaldırım Avenue enhanced transit between Galata and Karaköy, while simultaneously accentuating the avenue's severe gradient. Following the renovation initiatives post-1950, the widths of Tersane and Kemeraltı roads were expanded, Karaköy Square was transformed into a transportation hub spanning 11,000 square meters, and the inauguration of the Karaköy underpass in 1964 enhanced the area's role as a traffic nexus. Nonetheless, these road widening initiatives altered the spatial configuration of Galata, providing merely surface remedies and modifying the solid-void ratios. Projects like the Haliç Metro Bridge post-2011 illustrate the conflict between modernization and the preservation of historic heritage. This transition process alters the historical identity of Galata and exposes the enduring impacts of urban interventions on its spatial and cultural fabric.

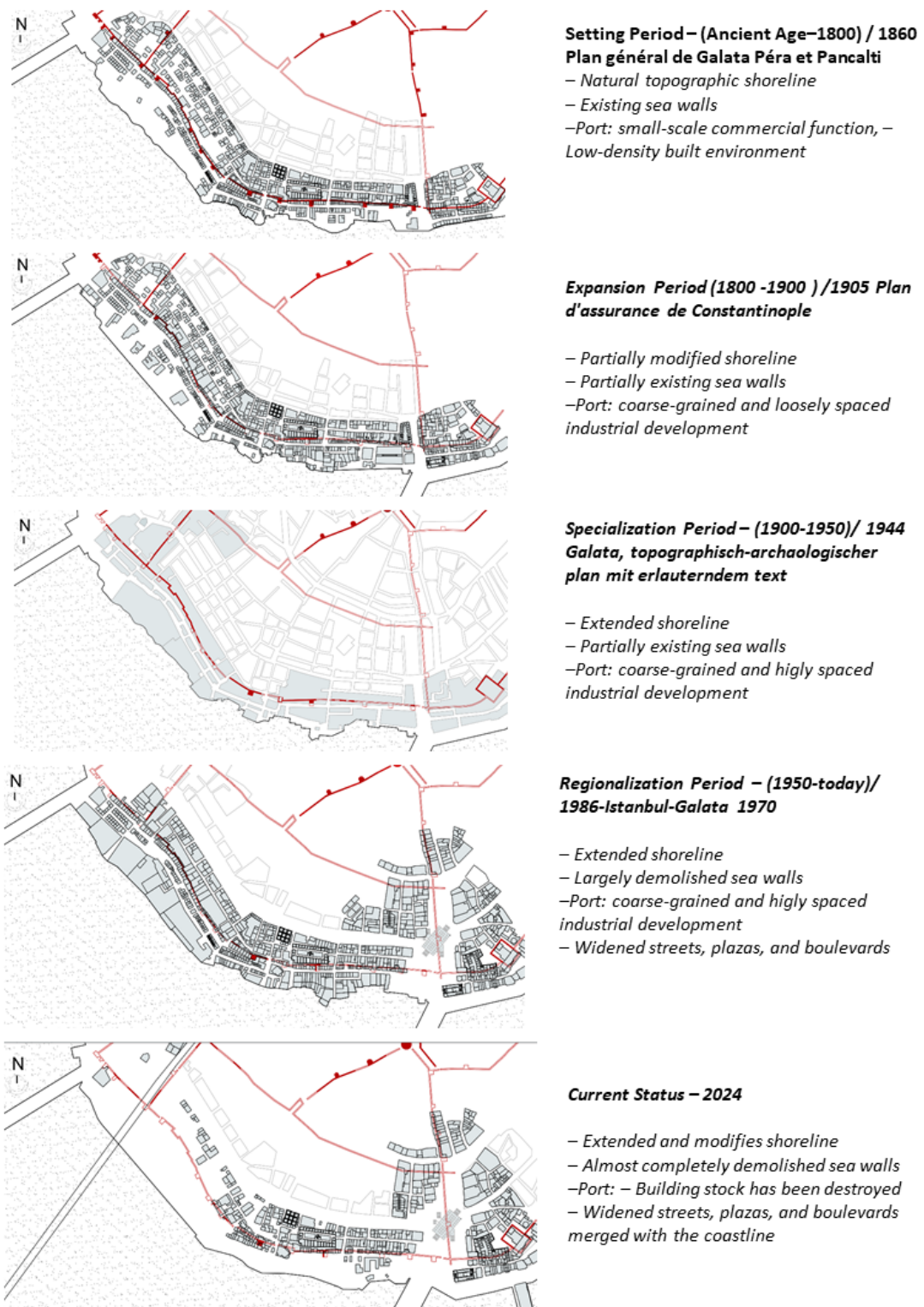
The edifices in Galata significantly contributed to the formal metamorphosis of the city. While the Galata Bedesten and Kurşunlu Han retained their original architectural layouts, Yelkenciler Han showed signs of spatial degradation. The 1905 insurance maps indicate that these edifices maintained their commercial roles, whereas other commercial constructions in the vicinity underwent swift transformations. The destruction of walls and the infilling of the shoreline resulted in the expansion of dock areas, particularly along Kalafatçılar Street and the waterfront, where warehouses and small commercial units proliferated, thereby enhancing economic activities. The transition is more pronounced on the 1944 map, as large-scale industrial complexes supplanted tiny commercial ones post-1950. Beginning in the 1980s, global neoliberal policies facilitated the relocation of industry from urban areas, resulting in the erosion of the industrial history along the Galata coast and the reconfiguration of the shoreline (Figure 12).

Galata's development serves as a microcosm of the substantial physical and social shifts experienced by Istanbul's port-city structure. It is a process that alters not just economic operations but also the social and cultural dynamics of the city. This procedure also illustrates the difficulties encountered in urban planning, the conservation of cultural assets, and the incorporation of contemporary life.

Conclusion

In conclusion, the Galata waterfront and its surrounding areas should be regarded as a significant site that preserves the characteristics of a historical fringe belt while reflecting the layered and dynamic structure of the urban fabric. The spatial transformations observed in this area not only reflect broader trends in the modernization of port cities but also highlight the inherent tensions between conservation and development.

Figure 11. *An Evaluation of the Fringe-Belt Evolution of Galata through Historical Maps*



Source: Created by Author 1

When considering the historical evolution of port areas, the transformation process up to the 1970 map largely follows a natural and expected trajectory. However, the urban planning and development policies implemented after 1950 severely damaged the built environment. The physical and functional continuity between Tersane Avenue—the main axis connecting the port and the inner parts of Galata since antiquity—and the shoreline has been lost. As a result, the area, which formerly held the qualities of a historical fringe belt, has turned into a largely vacant, fragmented, and characterless zone (Figure 11).

Future urban planning and conservation strategies should take into account both the historical value and the evolving functional roles of these fringe-belt areas, aiming to strengthen spatial continuity and reinforce Galata's urban identity. In this context, planning approaches that integrate historical form with contemporary needs—balanced and culturally sensitive—can serve as a guide toward a sustainable urban future that respects the past while embracing transformation.

Acknowledgments

This paper was produced from the PhD. thesis of the corresponding author, Elif Ceren Tay at Graduate School of Science and Engineering of Yıldız Technical University under the supervision of Assoc. Prof. Dr. Yasemen Say Özer.

References

- Çelik Z (2016) 19. Yüzyılda Osmanlı Başkenti Değişen İstanbul. İstanbul: İş Bankası Kültür Press.
- Özbay Kınacı M, Zeren Gulersoy N (2021) Evaluating nineteenth-century urbanization in the Galata neighborhood of İstanbul using the maps by Huber, d'Ostoya, and Goad, *Planning Perspectives*, 36(2), 393–409, DOI: <https://doi.org/10.1080/02665433.2021.187>.
- Akın N (2002) 19. Yüzyılın İkinci Yarısında Galata ve Pera. İstanbul: Literatür Press.
- Akıncı T (2021) *Galata, İstanbul'un 700 Yıllık Karakutusu*. İstanbul: Remzi Press.
- Arat MA (2022) *Strengthening the Conzenian method of morphological regionalization* (Doctoral dissertation). Doctoral Program in Spatial Planning, Faculdade de Engenharia, Universidade do Porto.
- Aydemir I (2008) İki Fransız Mimari Henri Prost Ve August Perret'nin İstanbul İle İlgili Çalışmaları. *Megaron* 3(1), 104–111.
- Bilsel C (2010) *İstanbul'un dönüşümleri": prost planlaması ve modern kenti yaratmak. Osmanlı başkentinden, küreselleşen İstanbul'a: mimarlık ve kent, 1910-2010* (s. 49-67). İstanbul: Osmanlı Bankası Arşiv ve Araştırma Merkezi.
- Bilsel C (2011) İmparatorluk tan Cumhuriyet'e İstanbul u Modernleştirme Projesi ve Prost Planı. *Betonart* 29, 43–48.
- Butler T (2007) Re-urbanizing London Docklands: Gentrification, suburbanization or new urbanism? *International Journal of Urban and Regional Research*, 31(4), 759–781.
- Camiz A, Verdiani G (2016) *Modern Age Fortifications of the Mediterranean Coast*. Firenze: Exhibition Catalogue, DIDApres.
- Conzen M (1960) *Alnwick Northumberland A Study In Town-Plan Analysis*. London: The Institute of British Geographers.

- Conzen MR (2004) *Thinking About Urban Form. Papers on urban morphology* (s. 1932-1998). Bern: Peter Lang.
- d'Alessio E (1946) Galata et ses environs dans l'antiquité. *Revue des études byzantines*, 4(1), 218-238.
- Eyice S (1969) *Galata ve Kulesi*. İstanbul: Touring and Automobile Association of Turkey Press.
- Gül M (2024) *Menderes Dönemi İstanbul'unda İmar Hareketleri ve Arka Planı*. Büyük İstanbul Tarihi: <https://istanbultarihi.ist/325-menderes-donemi-istanbulunda-imar-hareketleri-ve-arka-planı>
- Gyllius P (Translator Erdeniz Özbay) (1997) *İstanbul'un Tarihi Eserleri*. İstanbul: Eren Press.
- He Z, Zhao P, Xiao Z, Huang X, Li Z, Kang T (2024) *Exploring the distance decay in port hinterlands under port regionalization using truck GPS data*. *Transportation Research Part E: Logistics and Transportation Review*, 181, <https://doi.org/10.1016/j.tre.2023.103390>.
- Hein C (2011) *Ports Cities: Dynamic Landscapes and Global Networks*. Amsterdam: Routledge.
- Hein C (2016) Port Cities and Urban Waterfronts: how Localized Planning Ignores Water as a Connector. *WIREs Water*, 3(1), 419–438.
- Hein C (2018) Oil Spaces: The Global Petroleumscape in the Rotterdam/ the Hague Area. *Journal of Urban History* 44 (5), 887–929.
- Herodotos (2006) *Herodotos Tarih*. İstanbul: İş Bankası Kültür Yayınları - Hasan Ali Yücel Klasikler Dizisi (Translator Müntekim Ökmen).
- Hesse M (2018). Approaching the relational nature of the port-city interface in Europe: Ties and tensions between seaports and the urban. *J.T.v.e.e.s.g.*, 109, 210–223.
- Hoyle B (1989) The Port-City Interface: Trends, Problems and Examples. *Geoforum; Journal of Physical, Human, and Regional Geosciences*, 20 (4), 429–435. [https://doi.org/10.1016/0016-7185\(89\)90026-2](https://doi.org/10.1016/0016-7185(89)90026-2).
- Kropf K (2017) *The handbook of urban morphology*. John Wiley & Sons.
- Kuban D (1996) *İstanbul Bir Kent Tarihi Bizantion, Konstantinopolis*. İstanbul: Tarih Vakfı Yurt Press.
- Madanipour A (1996) *Design of urban space: An inquiry into a socio-spatial process*. Chichester: Wiley.
- Mantran R (1979) *Mantran, 16. ve 17. Yüzyıllarda İstanbul'da Gündelik Hayat*. İstanbul: Eren Press.
- Marshall S, Çalışkan O (2011) A joint framework for urban morphology and design. *Built environment*, 37(4), 409-426.
- Moudon AV (1997) Urban Morphology as an Emerging Interdisciplinary Field. *Urban Morphology* 1 (1), 3–10.
- Nicol D (2000) *Bizans ve Venedik: Diplomatik ve Kültürel İlişkiler Üzerine*. İstanbul: Sabancı Üniversitesi.
- Okur E (2011) *Galata Surlarının Yıkılma Süreci. Master's Thesis*. Istanbul Technical University, Institute of Science.
- Oliveira V, Arat M (2023) *Conservation and change in planning practice: the method of morphological regionalization*. *urbe. Revista Brasileira de Gestão Urbana*, 15, e20230005.
- Oliveira V (2024) *Kentsel morfoloji: Kentlerin fiziksel biçimi çalışmalarına giriş* (T. Tezer, Trans.). Nika Press.
- Orçun Kafesçioğlu F (2016) 19. Yüzyılın İkinci Yarısından Günümüze Galata/Karaköy'de Kent Morfolojisi ve Yapı Türlerinin İncelenmesi. *İdealkent*, 7(18), 174-203.
- Podobnikar T (2009) Georeferencing and quality assessment of Josephine survey maps for the mountainous region in the Triglav National Park. *Acta Geodaetica et Geophysica Hungarica*, 44(1–9), 49–66. <https://doi.org/10.1556/ageod.44.2009.1.6>
- Rossetto Ribeiro R, Beloto GE (2021) Diagrams as a comparative tool to understand the

- territorial evolution of port city regions. *European Planning Studies*, 30(8), 1514–1528. <https://doi.org/10.1080/09654313.2021.1935493>.
- Rumsey D, Williams M (2002) *Historical maps in GIS*. In A. Knowles (Ed.), Past time, past place: GIS for history (1–18). ESRI Press.
- Salt Research (2024) *Salt Research Archive*. <https://archives.saltresearch.org>:
- Sağlam HS (2020) An interdisciplinary experiment for the urban morphology of Galata (Istanbul) and its surroundings during the Late Antiquity and Middle Ages. A| Z ITU *Journal of the Faculty of Architecture*, 17(3), 13-30.
- Schubert D (2018) *Ports and Urban Waterfronts*. e. b. Hein içinde, The Routledge Handbook of Planning History (s. 338–349). New York, London: Routledge.
- Spolaor S, Oliveira V (2022) Towards a progressive understanding of informal settlements: the contribution of the fringe-belt concept. *urbe. Revista Brasileira de Gestão Urbana*, 14, 1-18. <https://doi.org/10.1590/2175-3369.014.e20210353>.
- Strabon (2000) *Geographika*. "Antik Anadolu Coğrafyası." XII-XIII-XIV. İstanbul: Arkeoloji ve Sanat Press.
- Şahin C (2015) *İstanbul'un Cumhuriyet Dönemi Mekansal Gelişimi Vol.1*. Büyük İstanbul Tarihi: <https://istanbultarihi.ist/22-istanbulun-cumhuriyet-donemi-mekansal-gelisimi> adresinden alındı
- Şen B, Sarca HE (2024) Haliç Dockyards: Is “Limited Gentrification and De-industrialization” Possible? *Planlama* 34(2), 118–133 doi: 10.14744/planlama.2024.65148.
- Tekeli İ (2021) *İstanbul'un Planlanmasının ve Gelişmesinin Öyküsü*. İstanbul: Tarih Vakfı Yurt Publications.
- Tuna I (2019) 1950-1960 Yılları Arasında İstanbul'da Kentleşme ve İmar Faaliyetlerine Genel Bakış. *MSGSÜ Sosyal Bilimler*, 3(20), 393-409
- Ünlü T (2013) Thinking about urban fringe belts: a Mediterranean perspective. *Urban Morphology*, 17(1), 5-20, <https://doi.org/10.51347/jum.v17i1.2884>.
- Ünlü T (2018) *Mekânın biçimlendirilmesi ve kentsel morfoloji*. Türkiye Kentsel Morfoloji Ağı, 59–70. (Ünlü, Thinking about urban fringe belts: a Mediterranean perspective, 2013)
- Ünlü T (2022) Urban Fringe Belts: Roots, Developments and Prospects. *Journal of Urban Research and Development*, 3 (1), 4-15.
- Vasilev A (1958) *History of the Byzantine Empire*. Wisconsin: University of Wisconsin Press.
- Ward K (2008) ditorial: Toward a Comparative (re)Turn in Urban Studies? Some Reflections. *Urban Geography*, 29(5), 405–410.
- Whitehand J (2001) British Urban Morphology: The Conzenian Tradition. *Urban Morphology*, 5(2), 103-109.
- Xu J, Chen J, Zhao Q, Shi J, She S, Chen H (2025) The impact of port-city interaction on urban economic development: An empirical study based on coastal port cities in China. *Cities*, 159, 1-12, <https://doi.org/10.1016/j.cities.2025.105770>.