



An Evaluation of the Urbanization Process of Galata (İstanbul) in the 19th Century Through the Maps of Huber, d'Ostoya and Goad

Merve Özbay Kınacı*, Nuran Zeren Gülersoy**

* *PhD Student, Graduate School of Science, Engineering and Technology, Urban and Regional Planning PhD Program, Istanbul Technical University & 85.merv@gmail.com*

** *Faculty Member, Department of Urban and Regional Planning, Istanbul Technical University & zeren.gulersoy@gmail.com*

İstanbul underwent great changes to its urban texture as a result of the period of westernization that took place in the 19th Century. Beyoğlu and Galata, which represented the occidental and cosmopolitan face of the city, were among the settlements most influenced by these changes. This study aims to examine the spatial effects of these changes through the integration of old city maps of Beyoğlu and Galata with modern Geographic Information Systems (GIS). The maps of G. d'Ostoya (1858-1860), R. Huber (1887-1891) and Charles E. Goad (1904-1906) are the documents which are used in this context. The maps have been coordinated with GIS software and the items (such as buildings, roads, empty spaces) which they included as raster data have been transformed into vector data to make comparisons and superpositions possible within the GIS environment. Thus, the transformation of urban space can be revealed, and conclusions about how Galata was exposed to changes in the 19th Century can be drawn.

Keywords: urbanization, historic urban fabric, 19th century, geographic information systems, old city maps, İstanbul, Beyoğlu, Galata

Introduction

Urban development of İstanbul in the 19th Century was guided by social and political events such as deep-rooted administrative reforms, comprehensive urban legislation, economic and educational innovations as well as post-war agreements. During this period, the urban texture of the city also went through several essential transformations as a consequence of new regulations stemming from responses to natural disasters such as fires and earthquakes. In this context, this paper focuses on the spatial changes that took place in Galata, which is located in Beyoğlu County in the western part of İstanbul. The goal of this study is to use comparative data acquired from old maps and modern GIS methods to reveal the changes to Galata.

Methodology and the Originality of the Study

The methodology of the study includes two main steps. The first consists of a study of the literature regarding Galata's situation in the 19th Century. The second involves the process of putting forward the changes made to the urban fabric through the use of old maps. In this step, firstly, the maps of G. D'Ostoya, R. Huber and Charles E. Goad, were coordinated. Then, the elements of the urban fabric (roads, buildings, building blocks etc.) were transformed into vector data using ArcMap 4.1 software. Thus it is possible to make schemes for these three maps and to compare them with each other.

As a result of this comparison, together with the help of information provided by the literature, the spatial changes that occurred in Galata were examined under two titles: "Changes in the Road Scheme" and "Changes in the Urban Texture". Thus, conclusions can be made about the scope and dimensions of the urban change, and also the effects of different processes on these changes that took place during the 19th Century.

The difference between this study and the others which have aimed to examine changes in urban textures is that its scope includes quantitative analysis and comparisons as well as a study of the literature. Within this scope, changes in the urban space are open to inquiry via vector data on GIS databases. These inquiries can be presented with different visualization techniques, and can be examined through thematic maps (schemes).

Galata in the 19th Century

Galata had been a settlement for Turks, Greeks, Jews, and Galatians throughout the centuries. In the mid-19th Century, the western and northern borders of Galata, which were by then dense residential areas, were set by the city's ancient fortifications. However, because of the increasing population, the settlement spread beyond the walls. As the Ottoman Empire surrendered to the economic hegemony of the European States during the Westernization



Era, Galata became the first region to host western merchants and to respond their needs.¹ As a result of the commercial agreements signed with the dominant European States in 1838, mainly England, large commercial retail enterprises and banks developed in Galata, and Karaköy in particular became a lively central business district.²



Figure 1: *The existing location of Galata and its environs* [Google Earth Aerial Photo: Accessed April 15, 2018]

In the 19th Century, Galata was subject to more urban planning activities than the İstanbul Historical Peninsula, and some innovations were also first implemented there.³ For his reason, many administrative organizations were first established in Beyoğlu-Galata.⁴ Within the borders of the Ottoman Empire, the first municipality to follow a European model was the Sixth Municipality which was founded in 1857 in Galata.⁵ There were also significant investments in transportation in Galata. These include the Galata Bridge, which took its final form in 1878,⁶ and the Tunnel connecting Karaköy and Pera which was constructed between 1871-1874.⁷

The process of rapid urbanization in Galata resulted in regulations being implemented by the Sixth Municipality. These dealt with the area's urban texture and included the demolition of the Galata Walls, the removal of the cul-de-sac, the opening of broader streets and squares, and the improvement of ruined areas.⁸ Apart from the urban projects implemented by the local government, there were also significant developments regarding the area's architecture. In the 19th Century, as a result of Galata and Beyoğlu being exposed to a considerable number of Italian workers and the unemployed, the construction of the masonry building stock became the work of Italian architects, master-builders and labourers.⁹

¹ Çelik, *19. Yüzyılda Osmanlı Başkenti Değişen İstanbul*, 34-35.

² Ortaylı, "Sanayi Çağında İstanbul."

³ Şehsuvaroğlu, *İstanbul'dan Sesler ve Renkler*, 134.

⁴ DİA, "İstanbul", 266.

⁵ İnalçık, "Galata", 352-353.

⁶ Çelik, 117.

⁷ Kuban, *İstanbul Bir Kent Tarihi: Bizantion, Konstantinopolis, İstanbul*, 360.

⁸ Çelik, 38-39.

⁹ Ortaylı, "Galata", 305-306.



Figure 2: Renate Schiele and Wolfgang Müller-Wiener. *A streetscape from the Rue Hendek (Büyük Hendek Street) ended with Galata Tower in the 19th century* [İstanbul: 1988]

Another situation that affected Galata in the 19th Century was its wooden housing stock and its vulnerability to the periodic fires that broke out. The biggest of these was the Beyoğlu (Pera) Fire of 1870 which caused the loss of 3000 buildings¹⁰, although the Galata region was less affected by this enormous fire than Taksim and its environs. There were several other major fires during the same period. These occurred on the outskirts of Galata Tower and Kemeraltı Street (1852), in Yüksek Kaldırım Street (1860), between Tophane and Galata (1874), on the northern sides of Galata Tower, around the Municipal building (1880s) and on the northern sides of Galata (1890s).¹¹ These fires brought about some major changes in the road scheme, urban texture and architectural features of Galata. Furthermore, the reorganization and reconstruction of the urban patterns damaged by these fires were made in accordance with new planning rules, and this contributed to the physical change and development of the Galata.¹² As a consequence, the urban texture of Galata underwent constant change throughout the century due to the impact of disasters, administrative arrangements and variations in its social structure.

Examining the Changes to Galata During the 19th Century

The method described in the first part of this paper will be used to examine the urban changes that took place in Galata in the 19th Century. In this context, the schemes obtained from the maps will be analyzed and compared with each other under two main titles: “The Changes in the Road Scheme of Galata” and “The Changes in the Urban Texture of Galata.” Thus, the arrangements and changes related to transportation can be put forward, and conclusions can be made about the changing situations of figure-ground perception and open-green space distribution.

Three maps were used in this study. Of these, the d’Ostoya and Huber Maps were drawn in the second half of the 19th Century, and the Goad Map was prepared at the beginning of the 20th century when the Ottoman Empire still provided continuity for mapping and planning activities. Particularly in the second half of the 19th Century, cadastral maps started to be prepared after questions of ownership increased in importance. Another factor regarding the increase in cartographical activity is the necessity of identifying the houses, and plots damaged by fire and those maps were beneficial in the matter of determining ownership and property lines after major conflagrations.¹³

¹⁰ Tekeli, *İstanbul’un Planlanmasının ve Gelişmesinin Öyküsü*, 47.

¹¹ Öncel, *Apartman Galata’da Yeni Bir Konut Tipi*, chap. 1.

¹² Özyurt, “19. Yüzyılın İkinci Yarısı ve 20. Yüzyıl Başındaki Yangınlar Sonrası Galata’da Kentsel Dokunun Değişimi ve Korunmuşluk Durumunun İncelenmesi”, 42.

¹³ Kayra, *Eski İstanbul’un Eski Haritaları*, 69.



The first map is the 1:2000 scale d'Ostoya Map. It is often considered more important because it was drawn during the period before the Great Pera (Beyoğlu) Fire (1870). It shows the area between Galata and Taksim, and contains details of the blocks, buildings and building materials. The d'Ostoya Map also includes monumental buildings such as towers, mosques, churches and embassies, and furthermore one can understand the road pattern and the distribution of the open and green spaces from this map.¹⁴ According to the d'Ostoya Map, wooden buildings were concentrated on the western side of Galata Tower and were the dominant element of that part of Galata's urban pattern. It also shows dense masonry buildings on the southern side of Galata Tower and an overall urban pattern determined by the ancient walls. Moreover, the road network contains a large number of cul-de-sac, and most of the buildings have gardens. The building density decreases and the amount of open-green spaces increases further towards the western side of the Tower (Figure 3).



Figure 3: G. D'Ostoya. *Map of the Galata, Pera and Pangaltı and the detailed study area*: [İstanbul: 2017]

Towards the end of the 19th Century, the 1:1000 scale Huber Map of Beyoğlu and Galata, dated 1877, was drawn.¹⁵ It contains details of buildings, roads, monumental buildings, trees, empty spaces and plots. This map was drawn for insurance companies rather than for urban planning requirements.¹⁶ However, it shows how the urban texture was influenced by the Great Pera Fire (and several smaller fires) at the end of the century, as well as the spatial effects of the Sixth Municipality's activities. When the Huber Map is compared to the d'Ostoya Map, it can be seen that most of the cul-de-sac had been opened and the transportation network had wider streets. Furthermore, by the time of the Huber Map, the ancient walls of Galata had been demolished, and the urban pattern inside the walls had been re-designed. Moreover, large squares had been opened in Şişhane and Karaköy, the building density had increased, and the shoreline had gained a different appearance due to new arrangements (Figure 4).

¹⁴ Dağdelen, "İstanbul'u Haritalarda Gezme: Atatürk Kitaplığı Harita Arşivi", 34.

¹⁵ Kayra, 69.

¹⁶ Tekeli, "Haritalar", 559.



Figure 4: R. Huber. *Map of the Beyoğlu and Pera and the detailed study area: [İstanbul: 2017]*

The third map examined in this study is the 1:600 scale insurance map of Beyoğlu and Galata which was drawn by Goad between 1904 and 1906. This map contains details about the urban texture such as buildings, building usage, construction techniques, materials, walls, windows and roof types, and includes both public and monumental buildings.¹⁷ The Goad Map contains almost the same road scheme as the Huber Map, but the wooden building stock shown in the d'Ostoya Map has been replaced by brick and stone buildings. Furthermore, the map indicates changes to the distribution of open spaces, urban pattern and the shoreline (Figure 5).

¹⁷ *ibid*, 559.



Figure 5: C. E. Goad. *Map of the Pera and Galata and the detailed study area*: [İstanbul: 2017]

The Changes in the Road Scheme of Galata

The most important and notable changes in Galata are those made to the transportation structure. The road texture in the d'Ostoya Map (Figure 6-a) is a mostly organic pattern that has lots of cul-de-sac. However, the Huber Map (Figure 6-b), has fewer cul-de-sac and shows a hierarchy regarding the road texture between main and other roads. On the other hand the Goad Map (Figure 6-c), shows a road scheme that consists of two main arteries in the east-west direction and secondary roads which are connected to them.

Due to the increased commercial activity in Galata, the need to expand the road network emerged, and investments to connect the settlement to the other side of Golden Horn were made throughout the 19th Century. During the reign of Sultan Mahmud II, two bridges were built. The first was the Unkapanı Bridge, which was built to connect Azapkapı and Unkapanı, and the other was the Galata Bridge, which was built in 1845. The original Galata Bridge was built with wood and served the citizens for 18 years. It was replaced with a wider wooden bridge in 1863 and finally in 1878, it was replaced by a permanent iron structure.¹⁸ It is possible to see the Unkapanı and Galata Bridges in the schemes of Ostoya, Huber and Goad Maps (Figure 6-a, 6-b and 6-c).

The expansion of the road network in Galata was not limited to the construction of bridges but also included projects which were implemented by the Sixth Municipality. The most radical of these was the demolition of the Galata walls and the design of new streets and settlement areas such as Yenikapı, Şişhane, Büyük Hendek, Boğazkesen and Galata Streets.¹⁹ The demolition of the walls also made it possible for the municipality to carry out some transformation projects. For instance, Mumhane Street, was one of the most dilapidated areas of Galata, but it was transformed into "one of the most beautiful streets".²⁰ It is also possible to observe all these changes in the urban space from the maps. In the scheme of the d'Ostoya Map (Figure 6-a), the walls of Galata are still standing.

¹⁸ Çelik, 117.

¹⁹ Tekeli, 78.

²⁰ Çelik, 95.



However the walls are not present in the scheme of the Huber Map (Figure 6-b), and there are new streets and settlement areas where the city walls stood. Although according to the scheme of the Goad map (Figure 6-c), a small part of the walls still remained, when this is compared the situation in the mid-19th Century (Figure 6-a) it is clear that most of the walls have disappeared. This is a consequence of the demolition activities which began in 1864.

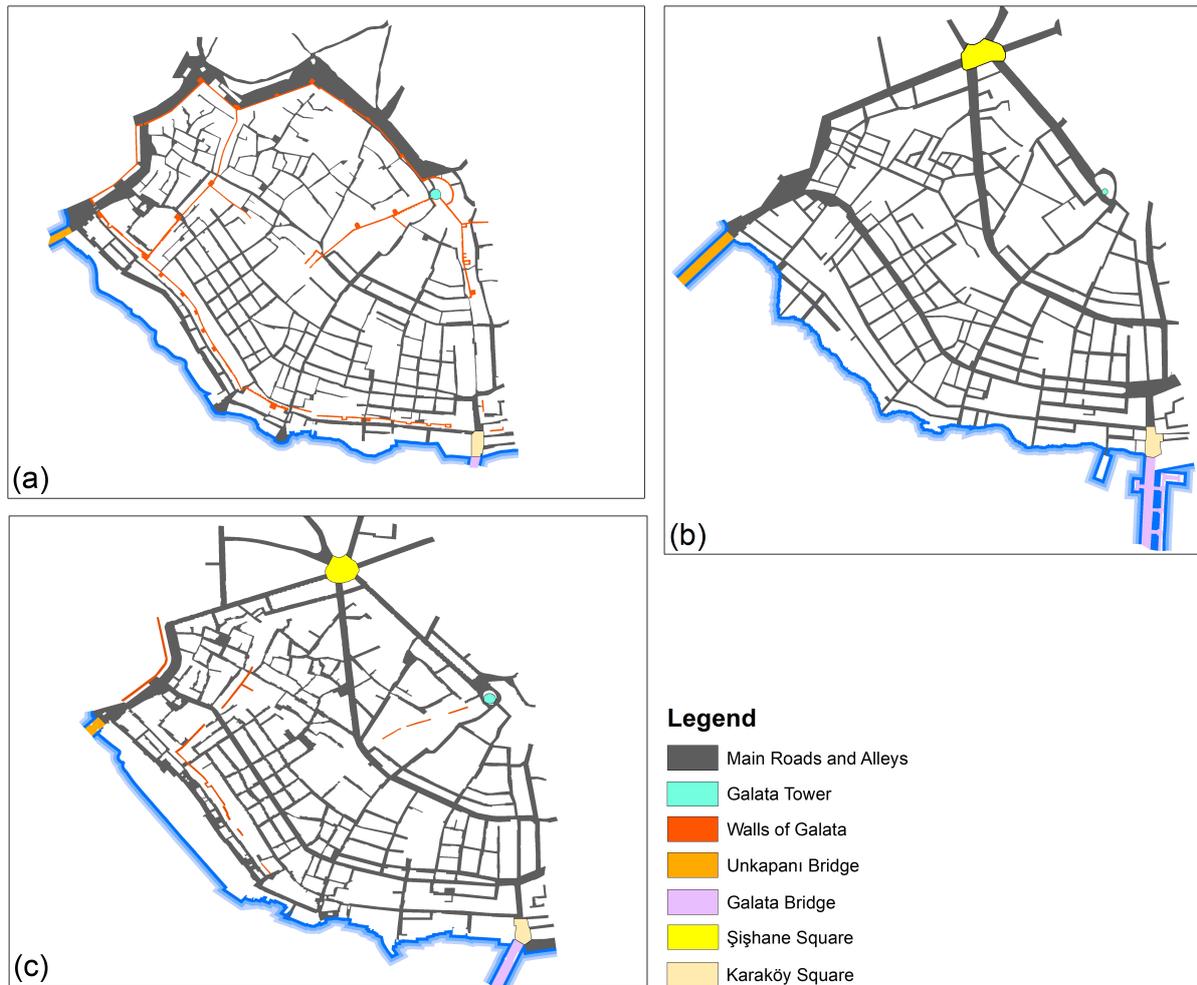


Figure 6: Schemes of Galata according to old maps using the methods integrated to Geographic Information Systems (ArcGIS 4.1 Software): (a) Ostoya Map, (b) Huber Map, (c) Goad Map

Another significant change affecting the road scheme and urban fabric in Galata was the design of squares which were implemented by the Sixth Municipality. The first one is Şişhane Square, a focal point located at the intersection of several main arteries which has a feel of European urban design projects, enhanced by the Sixth Municipality building which stood at its centre.²¹ Şişhane Square does not exist in the scheme of the d'Ostoya Map (Figure 6-a), but it can be seen in the scheme of the Huber Map (Figure 6-b). The final version of the square is shown in the scheme of the Goad Map (Figure 6-c).

The second square implemented by Sixth Municipality is Karaköy Square, which was created at the foot of the Galata Bridge in 1858. It was created in response to the changes in Karaköy that were due to the increasing population and commercial activities. The square was intended to prevent confluence in the area and to facilitate police inspections.²² In the scheme of the d'Ostoya Map (Figure 6-a), it is possible to see the first instance of this square. The Huber map (Figure 6-b) shows the situation of the square at the end of the century, and the nearest situation to that of the present day can be seen in the scheme of the Goad map (Figure 6-c).

²¹ *ibid*, 59.

²² *ibid*, 91-92.



The Changes in the Urban Texture of Galata

The factors that led to changes in the texture of the Galata in the 19th Century can be grouped under two headings. The first is the area's intense urbanization, and the second is the destruction caused by fires. As a result of the rapid urbanization, the empty spaces in 1840 in Galata filled up in the 1870s, and the built environment expanded to the north and north-west in the early 20th century.²³ This situation can also be seen clearly throughout the schemes in Figure 7. According to the scheme of the d'Ostoya Map (Figure 7-a), large spaces and green areas are located in the northern and western parts of Galata. However, in the scheme of the Huber Map (Figure 7-b), these green areas are replaced by buildings, and there is a visible decrease in the number of empty spaces. The situation at the beginning of the 20th century can be seen from the Goad Map (Figure 7-c). According to this scheme, the built parts are more dense, and there are fewer open and green areas.



Figure 7: Schemes of Galata in terms of built environment and green areas according to old maps using the methods integrated to Geographic Information Systems (ArcGIS 4.1 Software): (a) Ostoya Map, (b) Huber Map, (c) Goad Map

The rapid urbanization of the 19th Century also affected Galata's shoreline. In this period, the warehouses of merchants, coffee houses, boat houses and some mansions existed along the Galata coast, but the dominant factor was the commercial activities of the Greek merchants.²⁴ It is possible to see the increasing construction along the shoreline from the schemes in Figure 5. In the scheme of the d'Ostoya Map (Figure 7-a), there is a small built-up area on the west side of the seashore near the Unkapanı Bridge, and the buildings are concentrated closer to the Galata Bridge. However in the Huber Map (Figure 7-b), the built-up area sprawls along both the western and the eastern parts of the shoreline. The most remarkable form of this situation is shown in the later Goad Map (Figure 7-c).

²³ *ibid*, 35-36.

²⁴ Şehsuvaroğlu, 133.



The changes to, and developments of, the urban fabric not only occurred due to the urbanization but also because of several enormously destructive fires. Since Beyoğlu and Galata had kept their wooden urban fabric until the mid 19th Century, the urban pattern experienced large-scale change and transformation processes after each fire.

As previously stated, 3000 buildings were damaged in the 1870 Beyoğlu (Pera) Fire which was the largest fire occurred in the 19th Century.²⁵ Apart from this great fire, many others also affected Galata. Dozens of houses and offices were burned on Yüksek Kaldırım Street in 1860, and a fire which affected the whole Kemeraltı neighbourhood broke out in 1865. The Galata Fire of 1874, which actually started in Tophane, affected Galata Street as well and destroyed more than 300 buildings.²⁶ Because of these fires, the urban fabric shown in the scheme of the d'Ostoya Map (Figure 7-a) changed in terms of the transportation network, building order and figure-ground situation. The Huber Map (Figure 7-b) shows new and wider roads, and new squares and blocks with open spaces. These radical changes and designs could only be undertaken in the aftermath of these fires.

The fires that affected Galata continued throughout the 1880s. As a result of a fire in 1887, the buildings, constructed on new plots between Büyük Hendek Sokak (between the Galata Tower and Şişhane Square in the east-west direction) and the Şişhane Square Municipality building was demolished. In 1888, the buildings on Şair Ziya Paşa Street (between Galata Tower and Şişhane Square in the north-south direction) were damaged by another fire.²⁷ In order to understand what kind of changes these fires caused to the urban fabric, it is necessary to compare the schemes of the Huber Map (Figure 5-b) and the Goad Map (Figure 5-c). It is possible to determine that although the main axes remain the same, there are changes in the routes of some alleys. In addition, in some affected areas, the roads have expanded, and small squares have appeared. Moreover, according to the scheme of the Goad Map, in some parts of the urban pattern, the configuration of buildings has turned to a more discrete form when it is compared to the scheme of Huber map. Another detail of the Goad map scheme is the appearance of fire hydrants located on the main roads, representing the fire prevention measures taken at the beginning of the 20th century.

Conclusions

Beyoğlu and Galata were the areas most effected by the westernization that occurred during the 19th Century. Galata became an important commercial centre during this period, and continued to grow in parallel with the development of Beyoğlu. It lead the field regarding administrative innovations, urban development, infrastructure and transportation implementations, and these developments accelerated its urbanization process. As a consequence, the urban pattern of Galata changed and transformed. The most prominent of these changes occurred in built-up areas and transportation links. The designs of new roads, settlements and squares, the construction of bridges, the arrangements of open-green spaces and the shoreline, together with the fires which broke out periodically during the century have been the main factors responsible for shaping the urban texture of the area.

The changes that took place in Galata's urban texture during the 19th Century can be revealed by using three maps which were prepared between 1850 and 1906, and GIS. The clearest conclusion to be made in this context is that Galata was subject to rapid urbanization in which the processes of change, transformation and reconstruction were intertwined. The urbanization that took place in Galata had both negative and positive aspects. Galata, which had a reputation as a commercial centre, became the centre of contemporary urban planning and design which produced a similar infrastructure and similar social services as European cities. Despite these positive effects, as a result of the radical arrangements and urbanization process, some historical structures such as the ancient walls were almost completely destroyed due to a lack of understanding of urban conservation. On the other hand, the urban pattern which originally had a less intense built-up area with more open-green spaces, evolved into one consisting of more adjacent blocks. Thus, both positive developments, which emerged through urbanization and improved infrastructure, and negative ones, in terms of conservation and effects on the natural environment, occurred together in Galata.

Disclosure Statement

No potential conflict of interest was reported by the author.

Notes on contributor(s)

Merve ÖZBAY KINACI is currently a Graduate student at Istanbul Technical University's Graduate School of Science, Engineering and Technology, Urban and Regional Planning PhD Programme. She completed her Masters

²⁵ Tekeli, 47.

²⁶ Öncel, chap. 1.

²⁷ *ibid*, chap. 1.



at Istanbul Technical University as in the Interdisciplinary Urban Design Programme. Her primary areas of interest are urban design, urban conservation, GIS in urban planning and urban sociology. She has worked in the Istanbul Metropolitan Municipality Directory of City Planning as an urban and regional planner since 2009.

Nuran Zeren GULERSOY graduated as an architect from Istanbul Technical University in 1974. She received her master's degree and her doctorate in urban planning from the same University. Presently, she is a professor of the Department of Urban and Regional Planning at the ITU Faculty of Architecture. Her primary areas of interest are urban planning, urban conservation and urban design. She is a member of the ICOMOS National Committee, a Council Member of Europa Nostra and Secretary General of IPHS (International Planning History Society).

Bibliography

- Çelik, Zeynep. *19. Yüzyılda Osmanlı Başkenti Değişen İstanbul*. İstanbul: İş Bankası Kültür Yayınları, 2016.
- Dağdelen, İrfan. "İstanbul'u Haritalarda Gezmek: Atatürk Kitaplığı Harita Arşivi". *Journal of İstanbul's Culture and Art*, no. 13 (2012), 23-34.
- DİA (Türkiye Diyanet Vakfı İslam Ansiklopedisi)*. İstanbul: Ali Rıza Baskan Güzel Sanatlar Matbaası A.Ş., 1988.
- İnalçık, Halil. "Galata". In *Dünden Bugüne İstanbul Ansiklopedisi*, 349-354. İstanbul: Ana Basım A.Ş., 1994.
- İstanbul Metropolitan Municipality (İBB) Directory of City Planning Archive, 2017.
- Kayra, Cahit. *Eski İstanbul'un Eski Haritaları*. İstanbul: İstanbul Büyükşehir Belediyesi Kültür İşleri Dairesi Başkanlığı Yayınları, 2004.
- Kuban, Doğan. *İstanbul Bir Kent Tarihi: Bizantion, Konstantinopolis, İstanbul*. İstanbul: Türkiye Ekonomik ve Toplumsal Tarih Vakfı, 2004.
- Ortaylı, İlber. "Sanayi Çağında İstanbul". Accessed December 12, 2016.
<http://www.istanbul.net.tr/istanbulrehberi/yazilar/sanayicagindaistanbuli/98/1>.
- Ortaylı, İlber. "Galata". In *Türkiye Diyanet Vakfı İslam Ansiklopedisi*, 304-307. İstanbul: Ali Rıza Baskan Güzel Sanatlar Matbaası A.Ş., 1988.
- Şehsuvaroğlu, Haluk Y. *İstanbul'dan Sesler ve Renkler*. İstanbul: Creative Yayıncılık ve Tanıtım Ltd. Şti., 1994.
- Tekeli, İlhan. *İstanbul'un Planlanmasının ve Gelişmesinin Öyküsü*. İstanbul: Tarih Vakfı Yurt Yayınları, 2013.
- Tekeli, İlhan. "Haritalar". In *Dünden Bugüne İstanbul Ansiklopedisi*, 557-560. İstanbul: Ana Basım A.Ş., 1994.
- Öncel, Ayşe Derin. *Apartment: Galata'da Yeni Bir Konut Tipi*. İstanbul: Kitap Yayınevi, 2010.
- Özyurt, Ekin Deniz. "19. Yüzyılın İkinci Yarısı ve 20. Yüzyıl Başındaki Yangınlar Sonrası Galata'da Kentsel Dokunun Değişimi ve Korunmuşluk Durumunun İncelenmesi." MSc Thesis, İstanbul Technical University, 2007.

Image sources

Figure 1: Google Earth Aerial Photo, (Accessed April 15, 2018.)

Figure 2: Schiele, Renate and Müller-Wiener, Wolfgang. *19. Yüzyılda İstanbul Hayatı*, 16. İstanbul: Roche, 1988.

Figure 3, 4 and 5: İstanbul Metropolitan Municipality Directory of City Planning Archive.