

483

PASSAGES AS ‘URBAN NICHE’

A COMPARATIVE RESEARCH ON THE COGNITIVE AND MORPHOLOGICAL ASPECTS OF PASSAGES THROUGH SPACE SYNTAX THEORY AND COGNITION

DENİZ CABADAK; MEHMET EMİN ŞALGAMCIOĞLU

ABSTRACT

Spaces, designed or non-designed, has both morphological and cognitive characteristics. Sometimes they are overlapped onto each other, whereas sometimes the cognitive characteristics lead totally the opposite side than morphological characteristics. In this paper, this situation will be examined. The urban scale is chosen for the examination, as it is the display scale of the daily life of a city. The urban niches are the main focus point of the paper.

‘Urban niche’ defined as the spaces in the urban area that provides personal space to people, in the areas that are causing environmental stress due to crowding. ‘Urban passage’ is proposed as the physical equivalent of ‘urban niche’ in city scene. Further questions will be examined through the paper: Does the location/orientation of the passage affects their usage? Do configurational aspects affect the everyday usage?

Being a metropole, having more than 5-6 central points and having ‘crowding’ problem as the main problem of the daily life of the city, make Istanbul, the most suitable city for the examination of the ‘urban niche’ that defined before. For the case study, 2 passages in Istiklal Street are selected: Avrupa Passage and Hazzopulo Passage. Istiklal Street is a backstage for an intense pedestrian flow most of the time and these two passages have certain characteristics in all the passages on the Istiklal Street for their functions, cognitive aspects, architectural configurations and the usage frequencies. The configurational characteristics of these passages and their interrelation with Istiklal Street will be examined. After the observation and on-site analysis, the morphological results and this observation data will be overlapped and interpreted in the frame of configuration – movement – attractors perspective. In this research, the analysis of the movement of pedestrians both to and through the passages, and space usage will be investigated by the data collected on-site observations. The passages will also be analysed with ‘University of Michigan’ licensed ‘Syntax 2D’ software in order to get the syntactic values. The syntactic and observation data will be used comparatively.

In conclusion, the features that affects the frequency of pedestrians in the passages will be examined in this study. Two passages will be compared through the morphological - configurational characteristics and cognitive characteristics by using syntactical analysis and on-site data collection.

KEYWORDS

Space Syntax, Cognition, Urban Passages, Istiklal Street



1. INTRODUCTION

The basic form of being in the city is being in a street. The relation between the city and the citizen is mainly being tied in the street. ‘Street’, with all its components, acts as a stage that creates a background for the ‘everyday life’. A citizen feels the tangible and intangible features of the city in many ways and react as a response to them as explained in environmental behavior theories. For an inhabitant of a city, the city that he lives in, had really important effect on his life. Because, most of the inhabitants are in relation with the city more than half of their time. As Lefebvre mentioned in ‘Critique of Everyday Life’, there are three types of time span in everyday life; free time (leisure time), required time (work time) and constrained time (travelling time, time for bureaucratic formalities). Urban spaces are mostly used in ‘leisure time’ or ‘constrained time’ of people. In big cities, people are spending so much time for transportation and for the stuff that they should do apart from the mandatory or required things; so that it causes the constrained time to be the major time span of the life of a urban citizen. So that it can be said that the relation between the city and citizen mostly held in urban scale in their constrained and leisure times, mostly in such a big city like Istanbul. Gehl (1987) also stated a parallel thing to Lefebvre that for a space to be full of life, that should be a space which creates an environment suitable for passive and basic common interactions such as salutation, playing instead of obligatory activities. Also as stated by Alpak et al (2018), people do not decide to spend time at a point that has no function but spending time, stopping, idling around is generated by time with the bounds that the one feels with the space. This is parallel to the territory concept in spatial theories.

In the urban scale, urban niches are the main focus point of this paper; which defined as the spaces in the urban area that provides personal space to people, in the places that create environmental stress due to crowding: Passages. Passages are a debate point for a long time; Benjamin (1999) examined the 19th century passages generated in Europe in ‘The Arcade Project’ by means of architectural, sociological and political aspects and Geist (1989) concentrates on a similar issue for the arcades in Europe and America as the classic references on this subject. But, in this study we will concentrate on the passages in Istanbul which has a different history than Europe and America in both cultural and architectural ways. Therefore, it would be better to recall the studies concentrated on this area. There are many dissertations upon the history of the passages in Istanbul on one hand (Ozkan, 2005) and for the refunctionality of them on the other hand. Garip et al. (2013), concentrated on the passages on Istiklal Street by comparison of the arcades on the basis of user behaviour-configuration. Passages are taken as “urban niches” in this study; for the niche concept there are also many studies however, just a few is relative to the concept that we use here; Yavuz (2005), explained the ‘niche’ term in various classifications and definitions from different aspects. Alpak et al. (2018) concentrates on the outdoor space niches by means of the niche possibilities on two main shopping Streets of Trabzon.

Hereby, in this study, the focus point will be passages on Istiklal Street, Istanbul in the frame of niche concept and relational characteristics with user behaviours and socio-spatial situations.

2. NICHE – “URBAN NICHE” IN THE FRAME SOCIO-SPATIAL SPACES

As it is explained by Yavuz (2005) in dissertation of master, niche has three aspects: physical, psychological and social. In physical aspect, defined as a sub-venue of the largest scale; in social aspect, niche is the space that gives people sense of belonging and including in social relations; in psychological aspect, niche is the space that makes people feel hided, safe, comfort, etc. From this point of view, the niche concept supports the theories of privacy, territoriality, interaction and co-presence. Niche is defined by the space that it places within and with the relations in-between, as the ‘convex spaces’ in space syntax theory. It is defined as a sub-space of a space and there exist an interrelation between these two; encompassing and encompassed. If the niche is tried to be explained by the j-graph system, the depth will be low as most of the niches/passages are not divided to subspaces; most of the passages consist of one highly interactive space. Sometimes, this supports the usage and increases the interaction whereas sometimes it creates environmental stress by its overlapped character because of combining more than 2-3 activities in such small spaces and people do not prefer to spend time there.



Through this perspective, niche as the sub-space, passages could be defined as ‘urban niches’ interrelated with the urban system of the city. There is a mutual relation between the city and the urban niche. The encompassing one, the city, defines the frame and interrelated characteristics of the encompassed one; while the encompassed one, the urban niche, affects the surrounding through the spatial qualities that it has, in some examples, the characteristics of the encompassed one overflows to the surrounding .

Besides connecting two or more streets, passages can also offer living spaces in social, physical or psychological aspects. Urban niches - passages could be discussed in the frame of Kevin Lynch’s 5 element strategy; it can be in all moods: landmark, node, path, district or edge. If it is just connecting two streets, it can be a path whereas if the attractors inside is major than connecting function, it can be a landmark or district inside. As indicated by Özkan (2005), there are three contribution of the passage to the urban system; expanding the pedestrian surface (for Istiklal Street, the length of the street is nearly 1300 meters; length of the facing passages is 830 meter in total, which means a 63% increase of the pedestrian surface), cul de sac affect (clustered functions) and permeability. Clustered functions is addressing creating a landmark or district and permeability adds a feature, besides the path character, which is both configurational and sociological. Accessibility that provided by the passage let the pedestrian flow through and connecting two or more streets. This adds a sociological aspect for the secondary streets (especially in the example of Istiklal Street), as well, by providing an interaction between the users of two streets. Alexander (1977) also claims that the more the space is scalloped with activity, the more that space lives. Pockets of activities make people pause and get involved. In this case, the space could be a node or landmark but if there are no activities in the space, it could turn into an edge, border or path. This also addresses the clustered functions created by the urban passages.

History of passage is coming from ancient times up to now. The main era of the passage is the 19th century. In Paris, that period was a scene for a revival of economic and social life. Passages were playing a major role in this and a new building type was characterized: arcade, passage. Geist points out 7 characteristics for the passages: access to the interior of a block, public space on private property, a symmetrical street space, a skylit space, a system of access, a form of organizing retail trade, a space of transition (the passage is the transitional space in which movement takes place). These are mostly related to passages in Paris with covered top with glass roof and with trade functions inside. The situation in Beyoğlu is different, it obviously has impacts from this defined building type but some of these in Beyoğlu are much organically developed in the courtyards of buildings or between streets.

In 19th century, it was westernization and modernization time for Ottoman Empire. This tried to be done both in social life and urban life starting from Sultan and his surrounding. However, being a top-down application make it hard to be succesfull. On the oher hand, around Beyoğlu and Galata, bourgeoisie of minority was living and westernization is being held there instinctively (Kuban, 1998). Because of this, Galata/Pera district has many examples of these passages.

For this research Istiklal Street is selected because of being one of the most dynamic urban spaces in Istanbul and it hosts many passages with various characteristics (Figure 1). Istiklal Street contains the opposing features together: calm-crowding, fast-slow, void-dense, flow-stable, smooth space –striated space etc. At some point, passages provide these contrary situations. For instance, a passage can create a void in the dense area; and a stable space just nearby the high flow of the street. “In Deleuze and Guattari’s terms, İstiklal Street can be considered a mixture of smooth and striated spaces. Smooth space is nonformal and amorphous. It is based on speed and movement, as opposed to striated space, which is the space instituted by the state apparatus. Organized around a center, striated space is defined, standard, and calculable. However, as the authors of A Thousand Plateaus clarify, these two spaces are not mutually exclusive: The two spaces in fact exist only in mixture. (Deleuze and Guattari 1987, 474). At one level, as a main road connecting two significant squares at both ends and one in the middle, İstiklal Street can be considered as a striated space. However, taking its cultural composition and surrounding labyrinthine street structure into account, it is smooth space par excellence...” (Baydar, 2006).

Istiklal Street seems like a linearly developed as a wide single street whereas it is a whole space that consist of sub-streets and sub-spaces. There is the main street (Istiklal Street) in center and many smaller streets are intersecting with it. These smaller streets are connecting the parallel two other streets to the main one. At some points passages take this task. Around Istiklal Street there are so



many passages, some connected to the main street directly some indirectly by means of expanding the pedestrian surface.

As ‘urban niches’, passages can be divided in three categories, urban niches that provide social niche, physical niche and psychological niche. For instance, Çiçek Passage is providing a social niche with the restaurants and the atmosphere whereas Markiz Passage is mostly providing a psychological niche due to containing Markiz Pastry. Markiz Pastry is kind of a symbol of old times of Beyoğlu so people who wants to feel that atmosphere comes here. All the passages can serve as a physical niche as all are covered and provides a sheltered space.

Within the case study, two urban niches are selected: Hazzopulo Passage and Avrupa Passage. Both of them are located around Galatasaray High School, the small square in the middle of Istiklal Street (Figure 2). These two passages are selected due to the configurational, morphological and cognitive characteristics. These two passages have both common and different properties. While Avrupa passage is 2 floored and has a straight plan geometry, Hazzopulo passage is 3 floored and displays a character between khan and passage with the plan geometry of strait path combining with courtyard. In this sense, Avrupa passage is built as a passage/arcade with all the features of 19th century passages with symmetric facades, glass roof, connecting two streets; but Hazzopulo passage formed much organically. Both are connecting two or more streets and both include the shopping activity. But Hazzopulo has services like café, etc in addition to shopping. As indicated by Ozkan (2005), today, upper floors of Hazzopulo is %50 empty, the part facing Meşrutiyet Street which was built as residential function and the condition is partially neglected while Avrupa passage is almost full and well-kept.

As it can be seen in Table 1, the cultural characteristics these two are differentiating from each other. Avrupa Passage was built in 1874, Hazzopulo Passage was built in period 1850-1871. Avrupa Passage hosted textile related shops, tailors, watch shop, shoe accessories at first, then shops selling button, belt, thread, tailors lively, serving for middle class come here; and after the restoration period up to now there are shops serving mostly for tourists; such as, antiquary, book shops, gift shops. So it was mostly upon textile and shopping. However, in the case of Hazzopulo Passage, there is a much sociological and cultural situation, which also makes it being still lively nowadays. As indicated in Hürriyet newspaper by Ersin Kalkan (2008), there is the print shop owned by Ahmet Mithat Efendi and the newspaper ‘İbret Gazetesi’ was being printed here by Namık Kemal. Then, Ahmet Mithat Efendi and Namık Kemal arrested here and sent to banishment. After this, Hazzopulo Passage became the meeting of Young Turks. While being a meeting point for political issues, also cultural issues was going on in Hazzopulo Passage. In 1869, a music shop opened in the second floor and in 1874, it became a music school for education of Turkish opera. After this, the space became the first chamber orchestra of Turkey.



Figure 1: Passages on Istiklal Street, Ümit (2014)

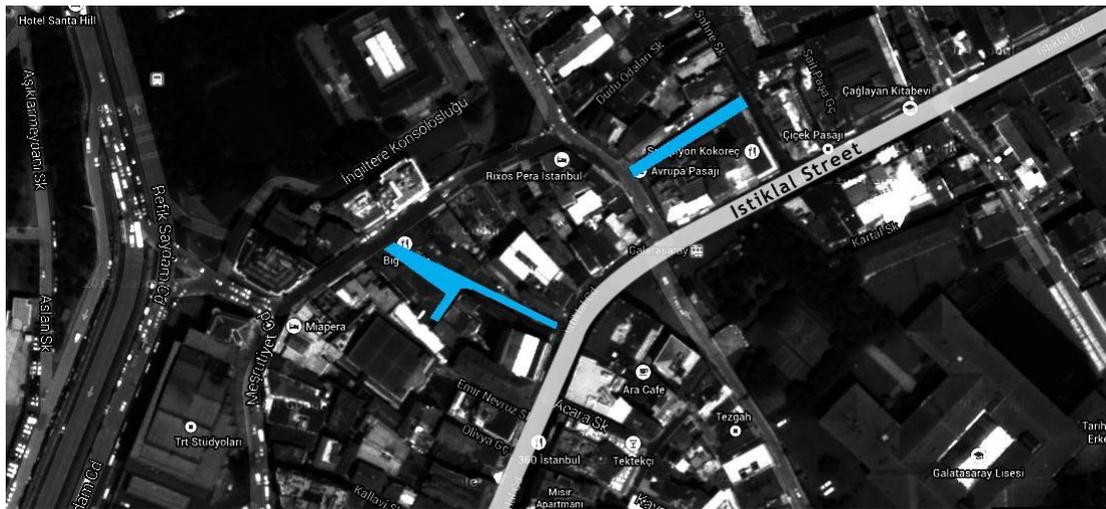
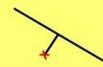


Figure 2: Location and orientation of Hazzopulo Passage and Avrupa Passage

Table 1: Features of Hazzopulo Passage and Avrupa Passage

	Hazzopulo Passage	Avrupa Passage
development period	1850-1900	1850-1900
number of entrances	3	2
accessibility		
corridor shape	straight - courtyard	straight
corridor length	105m	55m
roof	partially covered	glass covered
number of floors	3	2
ownership	Hacopulo from the foundations of Kamerhatun and Çarcis Church Foundations: Zahari Hacopulo's inheritors	Onnik Düz 1929- Turkish treasury, sold by the mediation of Emlak & Eytam Bank to several shareholders 2002- more than 10 shareholders
building status	1985- quite neglected 1997- fire damage 2003- amendments done for Mesrutiyet St. Façade	1989- 1994- restoration
use	Original: shops selling button, hat, thread shops; tailors, publishing house, music houses, art ateliers, upper floors housing, meeting place of Young Turks (Jöntürk) 1985- small production ateliers and shops 2002- textile related shops and ateliers 2008- ground floors, accessory shops, dress shops, book shops, other specialized shops; upper floors mostly empty and a few denture storages eat / drink / shopping	Original- textile related shops, tailors, watch shop, shoe accessories, etc. 1985- Shops selling button, belt, thread, tailors lively, serving for middle class 1989-1994 restoration period(empty) 1994-2008 Shops serving mostly for tourists; such as, antiquary, book shops, gift shops touristic shopping
emptiness	more than 50% empty	almost full
keep	partially neglected	well-kept

4.DATASETS AND METHODS

For the examination Hazzopulo Passage and Avrupa Passage, firstly both cases analyzed in urban scale; by means of their relation with surrounding and Istiklal Street and interrelations of spaces and pedestrians in and around the passages itself. In the urban scale there are two segments: creating an urban niche and expanding the pedestrian circulation area. As it can be seen in Figure 2, both of the passages are in the same surrounding in Beyoglu, nearby the small square on the Istiklal Street, nearby Galatasaray High School. However, as their orientation, Hazzopulo Passage is perpendicular and directly connected to Istiklal Street whereas Avrupa Passage is parallel and indirectly connected with Istiklal Street by the sub-streets.

At urban scale, syntactic analysis are done in order to see the mean depth, integration, circularity, isovist perimeter values of the entrances of the passages. In addition, on-site analysis are done upon natural observation. And these lead to the understanding of the morphological and configurational interrelation of the passages and Istiklal Street. The location of the passages and their relations with Istiklal Street can be seen in Figure 2. This plan shows a part of Istiklal Street which is the second central point (Galatasaray Square) and 3 passages (Hazzopulo Passage, Avrupa Passage, Çiçek Passage) around it.



For the on-site analysis gate counts and time span analysis are done. A week day and a weekend day is chosen for these and analysis have been done for 7 minutes for each gate and district (for time span analysis). A week day and a weekend day are chosen in order to have complete results. As it is stated by Hillier (2009), every human movement is made up of two elements: to-movement (from origin space to destination space) and through movement (the spaces passed through on the way from origin to destination). To-movement is about the closeness or accessibility of spaces from all others and in space syntax theory equivalent of this is, integration. Through movement is the betweenness measure, called choice in space syntax theory. And this is a space to be chosen as part of a route between spaces and time spent here could be longer as the one would not directly pass from here. Time span analysis (Table 3) are on-site analysis of to-movement and through movement and divided in four sections: passing through (through movement), passing and window shopping (through movement), shopping (to-movement) and sitting (to-movement).

In Figure 3 the integration, mean depth, isovist perimeter and circularity graphics can be seen. The predefined area seems to be highly integrated mainly around the Galatasaray Square and along the Istiklal Street. Hazzopulo and Avrupa Passages are seen as less integrated places when compared to the street. It can be seen when looked to the Table 2&3 that in general all the frequency values of Hazzopulo Passage is higher than Avrupa Passage and if the results compared both in relation with each other, no significant results could be found. Because it is obvious that there are further reasons than configuration about the usage of these such as cognitive aspects, cluster affect (attractors), etc. So it would be better to evaluate them locally by relation of each in relation with Istiklal Street not with each other.

Integration is one of major terms in space syntax theory as it shows the interrelation of the spaces in configurational matter. As it can be seen from Figure 3, the highest integration is nearby the G2 at the entrance of Hazzopulo Passage and G3 also show higher integration values than G1 and G4. Here, it can be seen that integration and pedestrian flow are directly proportional as G2 is the one which has the highest pedestrian flow of all gates. However, for G3 this cannot be said when two passages compared in relation with Istiklal Street together. G3 shows directly proportional values when evaluated as the entrances of Avrupa Passage locally.

In Figure 3, it can be seen that mean depth values of G4 is higher than G3, it is verifying the gate count results in Table 2. According to these, in Avrupa Passage pedestrians mostly going in and out from G4 instead of G3. This could be because of the cognitive aspects as that street is much more functioned with several things and as a code on the minds as 'Fish Market' and 'Çiçek Passage'. These are two of the main things that comes to ones mind when he thinks about Beyoğlu. This cognitive leading could be the major reason of this situation between G3-G4 pedestrian flow.

Circularity values of Avrupa Passage is less than Hazzopulo Passage; as Hazzopulo has the courtyard and the geometry of the space converge to circle more than the linear geometry of Avrupa Passage. When Table 2&3 evaluated together, the observation analysis itself also giving some important data about the usage of the passages. G2 seems to be used also for coming in and out; it follows the syntactic results as the highest integration and circularity is seen nearby G2. It can also be said for G4 when compared to G3. According to the time span analysis, for Hazzopulo Passage, there are significant differences between the usage while for Avrupa Passage, the results are so similar to each other. For Hazzopulo Passage, main usage item is the sitting, passing through, passing and window shopping and shopping in a row.

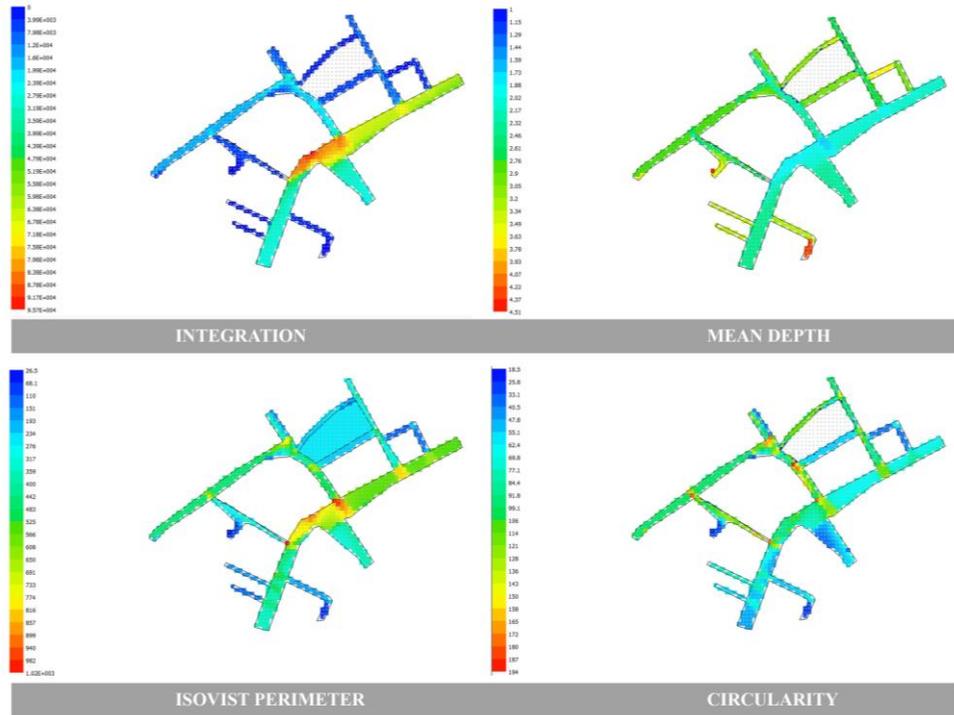


Figure 3: Syntax related results

Table 2: Gate counts and related parameters

	Gate Number	Gate Count				Number of entrances	Function
		week day		weekend			
		11.00	16.00	11.00	16.00		
Hazzopulo Passage	1	43	56	49	59	2	retail & food-beverage
	2	61	130	93	148		
Avrupa Passage	3	15	18	30	32	2	retail
	4	29	24	34	38		

Table 3: Time span analysis

	Pass through		Passing and window shopping				shopping				sitting X					
	week day		weekend		week day		weekend		week day		weekend		week day		weekend	
	11.00	16.00	11.00	16.00	11.00	16.00	11.00	16.00	11.00	16.00	11.00	16.00	11.00	16.00		
Hazzopulo Passage	31	34	68	38	14	31	27	20	18	15	25	17	44	105	92	118
Avrupa Passage	17	15	19	22	8	12	16	24	10	14	14	26	0	0	0	0



4. CONCLUSION

According to time span analysis, much more people go Hazzopulo Passage than Avrupa Passage. This could have several reasons about functions, cognitive aspects, economy, safety, etc. Avrupa Passage mostly functioned as retail shops, and mostly visited by tourists whereas Hazzopulo Passage functioned as cafes, retail shops and visited by both tourists and natives. In cognitive aspect, Hazzopulo Passage has an additive meaning for Istanbulians with Madame Katiah hat shop, the politic history of the passage and being kind of a symbol of ‘old Beyoğlu’ days. In Hazzopulo Passage, there



are many cafes and especially one of them called Mustafa Amca, mostly visited by the university students, young people besides the older who come here with cognitive reasons. For the place of Mustafa Amca there is another characteristic that makes this café special; there are stairs leading to the 3rd entrance of the Hazzopulo Passage which opens up to Panayia İsodion Church, and people mostly sit on these stairs. This creates a cognitive cluster and also functional cluster with cafes and shopping points and with the courtyard which acts as a district by means of Lynch's division and serves as a physical and social niche nearby the Istiklal Street, away from its crowding and stress. As it can be seen from Table 3, also in the week days Hazzopulo Passage is crowded as weekend. For Hazzopulo case time span analysis also display the main reasons of the frequency of the passage; sitting, passing through, passing and window shopping and shopping in a row. For Avrupa Passage all the data coming from time span analysis are similar to each other, do not display a significant difference as the services are limited by shopping. Hazzopulo Passage is used by people from different generations and socio-economic levels.

Tourists also see Hazzopulo Passage as the piece of the hidden values of Istanbul, a tourist viewpoint from a blog post explains it: "Perhaps our favorite spot of the day was in the courtyard found at the back of the narrow Hazzopulo Pasajı, which was packed with students drinking tea and playing backgammon. As soon as we emerged into this very cool corner of the city, we felt ourselves leveling up. Drinking tea in Hazzopulo advances you from Istanbul Level 3 (beginner) to Level 4 (novice)". As being the urban niche, the passage acts as a hidden place within the urban system of the city which is visited by the ones who already know there; for the new comers it is an unexpected place to be found in that dense street as a sub space.

Apart from the cluster affect and historic viewpoint, also, being connected to main street makes Hazzopulo passage, makes it a place of through movement because of the visibility for all the people who passes by Istiklal Street, as well. It opens it up to new comers and welcoming. For Avrupa Passage, this chance is less as not being directly connected to Istiklal Street and having a main street called 'Meşrutiyet' which leads to Pera district. As stated by Hillier (1993), attractors and movement can affect each other whereas configuration will not be affected by them and just affects them. In the passages, we can see the affects of movement and attractors to each other as it stated above. But spatial configuration has also impact on them. It is seen from the analysis that (Table 3), through movement is much stronger than to-movement for Avrupa Passage and to-movement is much stronger than through movement for Hazzopulo Passage. Avrupa Passage is mostly used as a shortcut between the fish market and parallel streets which are all perpendicular to the Istiklal Street. While Hazzopulo Passage is mostly used as a public space.



5. REFERENCES

- Alexander, C.** (1977). *A pattern language*. New York: Oxford University Press, pp.602
- Alpak, E. M. & Düzenli, T. & Mumcu, S.** (2018). Outdoor Space Niches, *Social Sciences Studies Journal*, 4-18 (1845-1851), Retrieved from https://www.researchgate.net/publication/325216934_SOCIAL_SCIENCES_STUDIES_JOURNAL-_ACIK_MEKAN_NISLERI_-OUTDOOR_SPACE_NICHES
- Baydar G.,** (2006). *Territories, Identities, and Thresholds: The Saturday Mothers Phenomenon in İstanbul*, pp.6
- Benjamin, W.** (1999), *The Arcades Project*, Belknap Press of Harvard University Press
- Eksi, O.,**“ 136 yıldır İstanbul’la birlikte değişmeye devam ediyor: HACOPULO PASAJI”
Hürriyet Gazetesi. 18 January 2008. Retrieved from, <http://www.hurriyet.com.tr/kelebek/136-yildir-istanbul-la-birlikte-degisime-devam-ediyor-hacopulo-pasaji-8043843>
- Garip, E. & Şalgamcıoğlu, M, E. & Kos, F.C. & Menderes, F.** (2013). A COMPARATIVE ANALYSIS OF URBAN ARCADES IN “İSTIKLAL STREET” İSTANBUL AND AN EVALUATION OF THEIR POTENTIALS OF USE, Proceedings of the 9th International Space Syntax Symposium. Seoul, South Korea:Sejong University, retrieved from <http://sss9sejong.or.kr>
- Gehl, J.,** (1987). *Life Between Buildings*, New York: Van Nostrand-Reinhold
- Geist, J.F.,** (1989, c1979). *Arcades, History of a Building Type*, translation: Jane O. Newman and John H. Smith, MIT Press
- Hillier B.** (2009) *Studying Cities to Learn About Minds*
- Hillier B.** (1996) *Space is the Machine*, Cambridge University Press, Cambridge
- Hillier B., Hansen J.** (1993) *Social Logic of Space*, Cambridge University Press, Cambridge
- Kuban D.,** Tarih ve Toplum Dergisi, cilt 10, sayı 59, pp.28-33, Kasım 1998
- Lefebvre, H.,** (2012), *Gündelik Hayatın Eleştirisi 1*, Sel Yayıncılık, İstanbul
- Lynch, K.** (1984). *The Image Of The City*. Cambridge: The MIT Press.
- Mike & Jürgen,** “The Historic Arcades of İstiklal Caddesi”, Retrieved from, <http://istanbul.for91days.com/2013/05/06/the-historic-arcades-of-istiklal-caddesi/>, 13 January 2019.
- Özer Ö., Kubat A.,** *Walking Initiatives: A Quantitative Movement Analysis*, 2007
- Özkan M.,** Transformation of the arcades in Beyoğlu, pp.270, 2008
- Salgamcıoğlu M.,** A Comparative Analysis of Urban Arcades in “İstiklal Street” İstanbul and Evaluation of Their Potential of Uses, pp.9, 2013
- Ümit, A.** “İstanbul: Benzemez Hiçbir Yer Beyoğlu’na”, Atlas, n:257, August 2014. Retrieved from, <https://www.atlasdergisi.com/kesfet/kultur/benzemez-hicbir-yer-beyogluna.html>
- Yavuz M.,** Mimaride Niş Kavramı, Temmuz, 2005