

## ARTICLE / ARAŞTIRMA

## Expression of Arts-Driven Social Co-presences in the Beyoğlu's Spatial Culture

*Sanat Aracılığı ile Bir Arada Olma Durumları ve Beyoğlu'nun Mekânsal Kültüründeki Yansımaları*iD **Güzin Yeliz Kahya**

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## ABSTRACT

The clusters of arts that are organically developed by the compatible location choices of art organizations are considered as such urban areas that social co-presences are generated. They are, thus significant catalysts for the enhancement of urban vitality. This paper examines this argument through exploring the location choices of art organizations in placing their art events in Beyoğlu, Istanbul. Along with the location pattern of art events, the focus of paper is the configurational attributes of Beyoğlu's urban network through which the art events impact on and are impacted by pedestrian use of urban space. The method addresses the locations of art events as places of art-driven social co-presence, and the pedestrian movement as the force that holds the events in a networked structure. Analyzing Beyoğlu's street network configurationally, the paper quantitatively presents the urban network's potential effect on pedestrian movement, and highlights the modes of urban space uses that can be possibly emerged through the natural pedestrian movement in Beyoğlu. The approach reveals the aspects of spatial processes that would generate social effects in the urban experience of art events in Beyoğlu.

**Keywords:** Accessibility; art events; Beyoğlu; pedestrian movement; social co-presence; spatial culture; street network.

## ÖZ

Kentlerde farklı sanat organizasyonlarının keşişen yer seçimleri dolayısıyla ortaya çıkan sanat mekânlarının oluşturduğu kümelenmeler, kentlerin sosyal canlılığı için önemli yerler olarak kabul edilmektedirler. Bu makale bu argümanı İstanbul Beyoğlu'nda sanat organizasyonlarının sanatsal etkinlikleri düzenlerken seçtikleri mekanlar üzerinden analiz eder. Bir taraftan sanat etkinliklerin yerlerini haritalarken, makalenin odağında hem etkinliklerin etkisinde, hem de bölgedeki yaya kullanımı etkisi altında ele alınması gereken Beyoğlu sokak ağı konfigürasyonu vardır. Metodolojik olarak, tespit edilen tüm sanat etkinlik mekânları bir sosyal bir-arada olma durumunun aktif yaratıcıları olarak ele alınırken, mekandaki yaya hareketi bu etkinlik meskenlerini ilişkilendirerek ağsal bir yapıya dönüştüren mekanizma olarak ele alınır. Makale Beyoğlu sokak ağının konfigürasyonunu analiz ederek, sokak ağının bölgedeki yaya akışına potansiyel etkisini ortaya çıkarmakta, bölgede yaya akışına dayalı ortaya çıkan mekânsal kullanımlara vurgu yapmaktadır. Bu yaklaşımla, makalede sanatsal etkinliklerin kentsel deneyiminde mekânsal süreçlerin sosyal olanı biçimlendirmedeki rolüne dair çıkarımlar yapılır.

**Anahtar sözcükler:** Erişilebilirlik; sanat etkinlikleri; Beyoğlu; yaya hareketi; sosyal bir-aradalık; mekanın kültürü; sokak ağı.

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## I. Introduction

Clustering is considered one of the most salient features of the artistic networks' spatial organization in contemporary cities. There is dominant tendency to idealize the value of these clusters as a source of capital accumulation, cultural innovation and social inclusion in cities (van Heur, 2009). It is the fact that various clusters emerge from these networks in contemporary cities. Sticking to them in the context of economic accumulation regime and mode of regulation however, entails the risk of losing sight of the actual complex and multiple situations in the development of art-driven social copresences in cities, and obstacles to see the role played by the multitude of actors in the production and maintenance of artistic networks. Revisiting the micro-level social copresences maintained by art events in urban space can be useful when understanding and rethinking the notion of spatial organization of artistic networks. Tackling art events also assists in updating and adopting the urban space to the cities' constituents and their diversity.

Art events that took place in Istanbul over the period between Jan 2011 and Jan 2012 is analysed with this purpose. The paper takes account a list of art events, including visual and fine arts along with performative arts-based events that were actively organized by art organizations in this period in the Beyoğlu district of Istanbul. These art events are approached as programmatic labels assigned to urban locations by various types of art organizations. In this respect, it can be said that the art organizations have intended to engage in the public at place through their event programmes. Indeed the programmatic contexts that were assigned to the events seem to be decisive on who were the participants and what their experience of social co-presences was. Today urban locations are also becoming multi-functional places, housing diverse activities and events. This form of programmatic transformation embedded in space would place great value on the formation of social co-presences and interactions in Beyoğlu.

At the same time, this research addresses the nexus between built environment and natural pedestrian movement in Beyoğlu to ascertain how built form attributes contribute to rendering the location patterns of art events more or less lively and inclusive. In other words, the underlying assumption is that urban space has capacity to reproduce and alter social situations in cities. Drill down to the street level in Beyoğlu, a more diverse and often-anonymous social co-presences can be observed. The natural pedestrian movement in the area, in particular, have capacity to foster social co-presences in many ways: unintentionally, informally, through tacit, diffuse and unconscious knowledge, and so forth. The streets of Beyoğlu seem to leave as much as undefined grounds for improvisations and unintentional social co-presences (Kubat et al., 2001). This may be relevant for the fact that the art

organizations mostly placed their art events in proximity aid to involve in community life through engaging the opportunities for random encounters among pedestrians in the area.

Although the role cultural or artistic quarters in the process of urban change in the urban context of Istanbul is extensively studied (e.g. Yardimci, 2005; Enlil et. al., 2011), there is lack of attempts linking the cultural capital of Istanbul with the spatial capital of urban areas where art-driven urban activities are localized. The focus of the paper is to construct an aggregate state of art events that were placed along with the street network of Beyoğlu by art organizations to illustrate how the art-driven 'social copresences' benefit from the 'spatial culture' of the Beyoğlu urban area. Social co-presence is simply a possibility of interactions inherent in distribution of people and groups in space. The consistent ways in which social practices happen in a particular space (be it architectural or urban) may configure what space syntax research has termed 'spatial cultures' (e.g. Peponis 1985; Hillier 1989; Hillier et. al. 1996; Hillier et al. 1996). The geometrical and syntactical differences in built environments seem to be expressions of what space syntax research calls differences in spatial culture. The paper asks for if this state of aggregation represents such a local condition that impacts on social copresences and also impacted by the Beyoğlu's spatial culture of social copresences. This contributes to the translation of the manifold art events into the variables of urban form, and thereby to make them informative and supportive to explore how the arts-driven social copresences are expressed in the Beyoğlu's spatial culture.

The outline of the paper is as follows. First, the paper evaluates a cluster-oriented description of Istanbul's art scene. Secondly, it introduces methodological approach, and then research methods and empirical data on aggregation of art events in the Beyoğlu urban area during one-year period between Jan 2011 and Jan 2012. This section follows with unpacking how the aggregate state of art events from morphological dimension and presents the findings derived through spatial analysis. Lastly, the findings are discussed in terms of the implications they generate. By taking this route, the paper concludes with the argument formulating a physical design perspective that should involve in current urban and cultural policy and planning practices dealing with the existence and survival of art clusters.

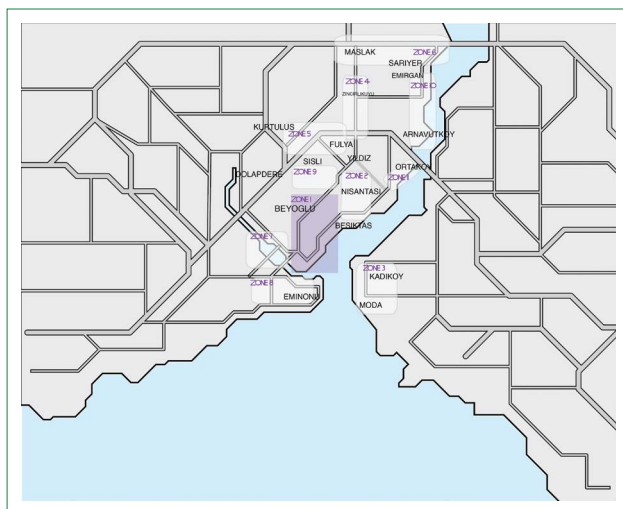
## 2. Istanbul with Clusters of Artistic Networks

In cultural and urban policy studies, much emphasis is put on the role of art clusters in fertilizing creative lifestyles in cities (Wedd et al. 2002; Zukin and Braslow, 2011; Gornostaeva and Campbell, 2012). The diverse aspects of the presence of artists in urban space including their places of residences, their work, their social life, and their cultural and non-cultur-

al consumption are highlighted (Dzialek and Murzyn-Kupisz, 2014). Drawing insights from economic geography, some cases, for example, New York (Zukin, 1989; Zukin and Braslow, 2011), London (Green, 1999; Wedd et al., 2001), Paris (Vivant, 2009), Berlin (Heebels and van Aalst, 2010) and Toronto (Ley, 2003), verify that the location choices of different forms of art organizations mostly exhibit some overlapping aspects. These studies present that art organizations generally seek for cheap and affordable spaces for living and working in the inner city, historic and post-industrial neighbourhoods, and prefer to nest in neglected buildings (Cole, 1987; Green, 1999; Ley, 2003; Lloyd, 2004; Vivant, 2010; Zukin and Braslow, 2011). There is, indeed, a clear tendency among them to cluster in close locations. Some studies (Gordon and McCann, 2000; Pratt, 2000) focus on the advantages for creative communities of being located in clusters. On basis of these approaches, clusters are central in the development of artistic networks. Artists seem to heavily rely on an intimate social interaction with other cultural workers, art professions and the urban localities. These urban areas, thus, appear as quarters, streets or neighbourhoods in which unique forms of social interactions structured.

In many ways similar to the above-mentioned issues, Istanbul's artistic networks have tended towards clustering at neighbourhood level. In different periods of history, there have been different driving forces attracting in and pushing out art-related activities to some particular neighbourhoods in the urban core of Istanbul. Some urban areas have appeared as vital and vibrant parts of the city since they have provoked aesthetic experience of art-related urban activities. They have, however, sometimes lost their vitality, and remained secret and hidden away from the urban life that has caused a great sense of repulsion and distress. Either the peak of their visibility or the loss of their importance in the context of urban scene was sometimes prompted by public authorities. Further to that, some public policy interventions were planned and developed for enhancing cultural production and consumption in some periods of history.

The process of self-organization in artists' communities is meaningful in the development of the clusters of artistic networks in some urban areas in Istanbul. Subsequently, from the 1990s onwards with new relations and new dynamics for cities, there were increasing newly introduced active agents in Istanbul's cultural scene. The social entities have keenly self-organized to form new artistic and cultural formations, and to establish their particular physical urban settings in the city. Art facilities and activities began to be either organized by the businesses connected to global networks or be initiated by the local artists attached to small-scale local or international groups. Rather than art and cultural centers that are prompted by top-down planning processes, the location choices that were spontaneously taken by various self-organized models



**Figure 1.** The urban areas that art organizations have clustered in Istanbul.

of art organizations seemed to be decisive in the development of these urban areas.

Demonstrating the state of clustering of artistic networks in a comprehensive sense is difficult, since there is no official statistical and survey data on artistic production networks. Relying on sources, like the art maps of Istanbul that were prepared by some art platforms, such as Artwalk Istanbul Project, Akbank Contemporary Art Map, Seismepolite Art Map, Tophane Artwalk, Figure 1 illustrates a general layout of urban areas that art organizations tended to cluster in Istanbul. These sources were analysed over a period of 2 years (between 2010–2012). Several urban areas were distinguished as the urban areas that were accompanied with the constitutive features of art clusters at city versus neighbourhood level. Among them, the Beyoğlu district had strong art concentrations with artists, their studios and the infrastructure supporting artists and the presence of art in the public space.

Regarding the preferences of the actors of artistic networks in being in the city centre of Istanbul in general, the accessibility of variety of public transportation vehicles, diversity, finance, and commerce in the Beyoğlu district would be some of fundamental driving forces for a long-standing intensity of art organizations. The other available advantages would surely be the relative attractiveness of the spatial capital that this urban area holds through time. Yet, the importance of these and other factors in determining the actors of artistic networks' choice of urban areas were seemed to overlap. In comparison to the other concentrated zones of arts in Istanbul, Beyoğlu presents many alternative spaces in range of price, historical and aesthetic quality. The historically attractive, physically degraded but economically affordable buildings can be found within its serpentine and hidden streets, but tied to the route of main transportation system of the city and easy accessible to variety of

public transportation destinations. Beyoğlu was seemed to have attracted the actors of artistic network whether mainstream or not, but seeking a place for artistic and cultural expressions in any case.

The 'Beyoğlu' urban area, which in the daily jargon refers to the inner-city centre including the neighbourhoods along and among the İstiklal Avenue has, in particular, dynamically transformed at fast pace to respond the emerging demands of the forthcoming centuries in which global social and cultural currents were so central in the organization of art market and the foremost art patrons. It has been appeared as a place where practices of creativity, risk-taking and cultural development have occurred. Hence, it is not surprising that the Beyoğlu urban area among other parts of the city has remained in the forefront with its art related urban activities and lively artist community over the three decades. At the same time, the urban fabric of Beyoğlu's neighbourhoods has offered mix of art amenities corresponding to the range of tastes and interests—from highbrowed to lowbrow as long as being oriented with different factors attracting artists to live, work and socialize. Some drawbacks have also resulted in pushing the artists' communities out of some particular neighbourhoods in the district. Artist communities were drawn to the particular neighbourhoods of Beyoğlu by the availability of spacious and affordable places. However, with time, as these neighbourhoods attract middle-class consumer presences; and this has, in turn, led to a capital's search for profit in these neighbourhoods. It is observed that the artists' communities have started to move another parts of the district to find more affordable places. There is such a dynamic change that the art organizations have appeared and disappeared in, or dispersed through and packed in the Beyoğlu urban area.

In order to illustrate the clusters of artistic network affordability of the Beyoğlu urban area in different time periods since 1990s, Figure 2 offers a basic scheme showing the gradual development of the routes of amenity-rich areas and neighbourhood walkability. The 1990s have brought considerable economic renewal in the Beyoğlu urban area. The pedestrianisation of İstiklal Avenue in 1990 and the restoration of some historic buildings have accelerated domestic and foreign investments in the area (Arslanli et. all, 2017). As a result, land values increased and many manufacturing and storage areas (especially on higher floors) were converted to offices, coffee shops, multi-story department stores and cultural centers (Dökmeci et al., 2007). Following the significant rise of the richness of urban amenities would be a factor in a marked influx of artistic networks in the area since 1990s. The gradual shift in this urban area's walkability, on the other hand, would support the artistic networks to occupy locations for running their arteries, galleries and event spaces. While considering the fact that the artists have similarly invested in urban space and preferred close locations to inhabit, it is not surprising

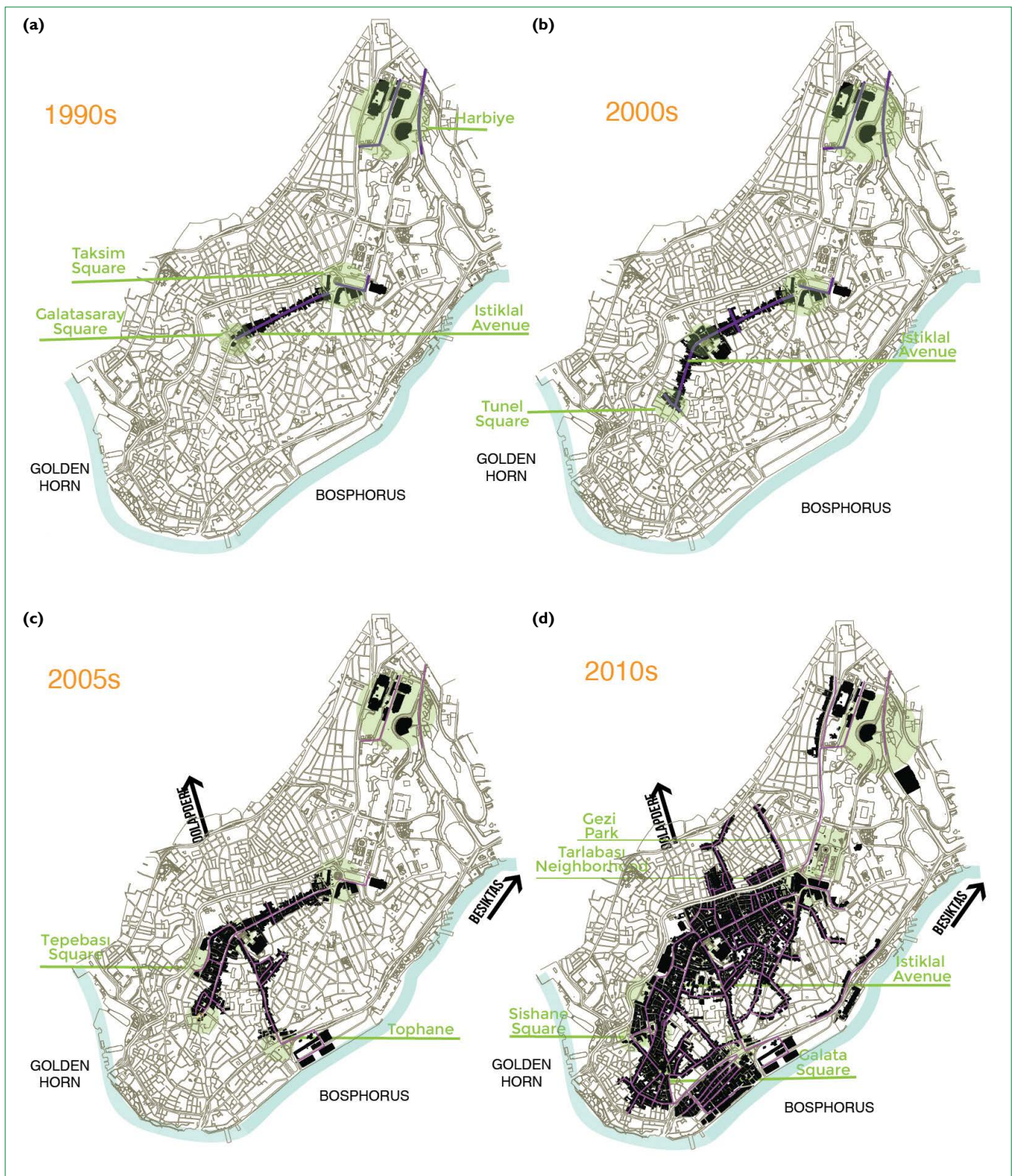
that the main routes and some streets in Beyoğlu allowed the spread of art spaces in agglomerative manner. In the resulted pattern in the beginning of 2010s, it can be said that the İstiklal Avenue, almost 1.4 km long pedestrian axis have appeared as a main carrier of the art organizations. While the vitality of avenue was expanding towards southwest end of the area, no fundamental shift in the central role of the avenue happened in this time period. Later on, it is observed that the art spaces increasingly concentrated and significantly flourished along the inner streets connecting to the İstiklal Avenue. Especially the backstreets connecting to the two small squares on the İstiklal Avenue began to be occupied for the purposes of art-related urban activities.

Even the Beyoğlu urban area has been main figure in the development of cluster of artistic networks, however, due to the increasing land values and regeneration processes the artistic networks did not show stable clustering scheme in the area but instead have produced dynamic clustering tendencies in different time periods. This tendency is, in fact, on move farther east towards Şişli district since 2014. Figure 2 illustrates that the aggregation of artistic networks has manifested itself in dynamic deviation, which clusters of art were shifting, but not deviating from the vicinity of İstiklal Avenue during three decades. The tree-like pattern of clustering can be observed since the artists' communities have occupied buildings within proximate distances. For that, it is said that each cluster has bushed out from the other in a continuous manner rather spread evenly around the whole district.

The gradual functional shift in the Beyoğlu urban area throughout different time periods is very expressive (Fig. 2). Looking at twenty years period by 2010s, it is observed that the building stock of Beyoğlu was housing increasing numbers of art organizations ranging in arteries, art residences, studios and galleries; and Beyoğlu's urban fabric was responding to the demand in artists and art professions for appropriate spaces of socialization and networking, such as specific cafes, bars, squares, corners that can be crucial for creation of community. As a result, the artistic networks have literally put their spaces on the map of Istanbul ranging from the global-focused institutional art organizations to the younger, smaller and locally focused organizations, and made them part of Istanbul's civil life.

### 3. Methodological Approach

The paper approaches the clusters of artistic network from a perspective having morphological dimension. While the clustering of artistic networks is often explored regarding the social, economic and cultural drivers inform spatiality, it is underestimated in terms of the physical characteristics of built environment. This points to a general disconnect from physical design perspective to an introduced urban phenomena. This paper examines this urban phenomenon through



**Figure 2.** The gradual development of the routes and streets of amenity-rich areas and neighbourhood walkability (1990s–2000s–2005s–2010s).

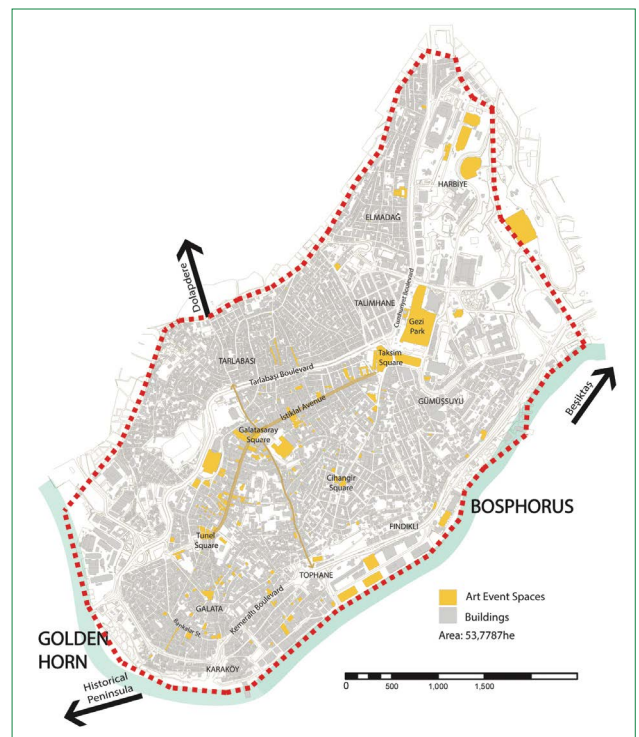
engaging in the object of urban planning and design practice, its buildings, plots, streets and squares. Positioning the street network of Beyoğlu as holding material agency assembling the locations of art events can allow natural pedestrian move-

ment along its network enable particular form of social co-presences at settlement scale. This attempt pushes the paper's argument forward in methodological ways to point the social role of urban space configuration.

Following this, the paper aligns itself with the view of Hillier and Hanson (1989) and space syntax rationale in which space organization is social as well as representing society. Space Syntax provides descriptive techniques for visualising spatial relations at level of connections between places. In particular, the three papers of Hillier and his colleagues (1996a; 2001a; 2001b; Hillier et al., 1993) are centred on the relation between urban network and movement. Movement along urban network is considered as mechanism of linking discrete locations as a network structure; and the urban network forms patterns of accessibility through urban space as it has systematic and independent effects on human movement. Respectively, urban network appears as a core urban element, strongly influence to the long-term dynamics of the whole urban system. As taking a rationale of intricate relationship between movement, locations and urban network, the paper suggests that pedestrian movement as a dominant form of mobility in the Beyoğlu urban area may potentially create networked patterns of social copresences between locations of art events. With a particular concern in identifying a specific mode of urban space use through considering events and pedestrian movement in a relationship, the paper sets location of art events against configurational attributes of street network. Hence, it aims to generate the spatial understanding of possible ways in which the art-driven social copresences benefit from the pedestrian-driven social encounters in Beyoğlu.

Pedestrian movement places great value on formation of random social encounters. Number of studies on walkability sustained by streets, streetscapes and buildings (e.g Southworth, 2005; Lund, 2009) offer a correlation between the increased quality of walkability and the potential for increased urban vitality through accidental and intentional social opportunities. The number of other studies, which were done under the umbrella of Space Syntax, show that the configurational character of urban form influences the pattern of urban mobility (Kohlsdorf, 1996; Hollanda, 2012). From this perspective, the spatial configuration of built form is strongly related to movement, encounter and avoidance. In 'Natural movement' (Hillier et al 1993), it was shown that the structure of the urban grid has independent and systematic effects on movement patterns, which could be captured by 'integration' analysis of the axial map. In 'Cities as movement economies' (Hillier, 1996b), it was shown that natural movement - and so ultimately the urban grid itself - impacted on land use patterns by attracting movement-seeking uses such as retail to locations with high natural movement.

This perspective is clearly applicable to the Beyoğlu urban area where the primary mode of mobility has been long before established as pedestrian one. The roads of intense vehicular traffic surround the area, but most of the inner streets are served to the pedestrians and separated from vehicular traffic. After reaching the Beyoğlu urban area via public or private transportation, trips from one place to another are occasionally made



**Figure 3.** Locations of the art events organized between January 2011 and January 2012.

on foot. In many parts of Beyoğlu, the streets are mostly used as extensions of indoor activities; and pedestrian movement crossing the streets combine commercial and everyday activities with the indoor activities. The strong interface between indoor and outdoor spaces offer relationships with the undergoing street life. The pedestrian use of urban space is as much fundamental element as the urban space uses that are embedded in a set of art events. This seems to potentially increase random social encounters. Indeed, it can be assumed that the social role of streets that is embodied through pedestrian movement can implicitly influence the quality of arts-driven social copresences in Beyoğlu. Further to that, considering that several art events are simultaneously happening at close locations, the arts-driven copresences would probably not restrict social interactions in the boundaries of art spaces; and the diverse interactions and communications would be expected.

#### 4. Data and Methods

The defined boundary of the Beyoğlu urban area covers 53.8 hectares around Istiklal Avenue. This urban area is chosen because most of art events are based in here –more specifically those informal and small nature that might be held by well established or emerging art organizations - along with its vital pedestrian movement pattern. The location data is gathered for 141 art events happened between January 2011 and January 2012; and 201 locations are assigned as illustrated in Figure 3. The data on art events is borrowed from the au-

thor's doctoral thesis research, which this paper is based on. Identifying the art events, the paper relies on art magazines, event calendars and websites about art in the city. Whilst the spaces range from museums to jazz clubs, and from theatres to open spaces, the events are curated as exhibitions, performances, concerts, artists' talks, openings, workshops and so forth. As some spaces have arts as their main programmatic function, others, such as churches, libraries, cafes, schools, abandoned buildings, parks and squares are temporary spaces that were used for the hosting of art events.

The aggregation of art events' locations during the identified time period is also meaningful as this period refers the snapshot of art-driven urban scene in Beyoğlu when the concentration of art events was high in Beyoğlu. In this period, being a European Capital of Culture in 2010 has played a catalyser role for fostering art and cultural events in the city. This programme had an impact that was not only felt in cultural sphere, but also in social and urban sphere – particularly in the Beyoğlu urban area since its historic culture has specific link to Europe's cultural features and values. During its implementation, this cultural programme has encouraged presenting such events featuring European artists, collaborations, co-productions, and exchanges between artists and cultural organisations across Europe.

On basis of the assigned urban locations in the map (shown in Fig. 3), the paper empirically analyses the spatial relationships between the locations that are configured by the potential pedestrian movement along with the Beyoğlu's street network itself. The strategy is identifying the possible paths of natural pedestrian presence through capturing the routes of walkable distances for each street in the network. These captured routes, in turn, are used to constitute the networked spatial relationships between the assigned locations. Further to that, the way in which the street network supports distinct distribution of accessibility is an important determinant of potential pedestrian movement among the locations of art events. It will be shown that the accessibility attributes of the street network create local street conditions for pedestrian movement in the urban area. In this regard, the measures describing the pattern of accessibility over the Beyoğlu's street network provides more complete insight about the urban space use that is potentially enabled by pedestrian movement. This allows examining how the street network itself generates a system of natural pedestrian presence in different parts of Beyoğlu, and thus alters modes of urban space use.

For that, the paper first employs GIS-based urban network analysis to generate reasonable pedestrian paths that potentially used by pedestrians and the locations of art events associating to these paths. The street network is represented as a line segments matrix, whose total segment length is 139 km, and whose total segment number is 2780. Four minutes

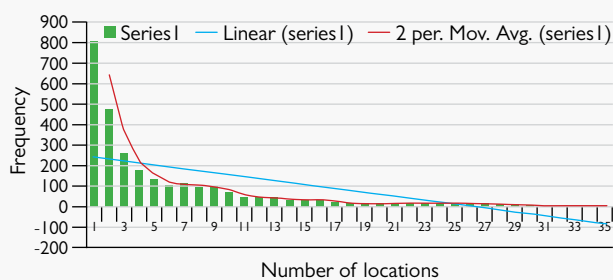
walking distance, which equals to 250 meters network distance (Supposing a walking speed of 1 meter per second as specified in the American Planning Association Planning and Urban Design Standards, 250 meters equals to 4 minutes) around the midpoints of each segment line on the matrix is mapped out, that means 2780 service areas for the locations are uniquely identified. The locations of art events that are associated to these service areas are then captured. In Table 1, the 2780 service areas are categorized based on the number of locations that are associated to them. This first step analysis was done with GIS software (ArcGIS), using the Network Analyst Module, Service Area Extension.

Second, the syntactic measures derived through Axial Map Analysis of Space Syntax methodology are used to predict on natural pedestrian movement in Beyoğlu. Expressing the structure of the Beyoğlu's street network as an axial map allow showing the pattern of streets and open spaces linking the building of the settlement, regardless of its degree of geometric regularity; and analysing the street network configurationally. Lines makes up axial lines represents the longest visibility lines for continuous movement along individual linear spaces; and they vary in syntactic values generating differences in natural movement locations. Measuring differentiation in these syntactic measures particularly captures the networked structures that would differ in their topology. For this, the paper derives differences in global and local integration and connectivity measures of axial map analysis. Integration value is topological measure of average depth of space to all other spaces in the system. Two indexes namely local integration (means to depth of space with limited step, such as radius: 3 means 3 steps away) and global integration (means to depth of place at unrestricted radius,  $r$  equals  $n$ , up to all steps away) can be applied in axial map analysis, respectively to depict local and global characters of spatial configuration. Hence, the locations in integration zone of the study area and some others more segregated become apparent. Connectivity value is local measure representing numbers of intersections along the length of axial lines, in other words connected axial lines, which is only one step away from the original line. Considering that these values correlates well to unforced human movement (pedestrian movement as well), it could be answered as if the locations of the events take advantage of the patterns of street connectivity and integration and, by inference, of exposure to high densities of background movement.

Third, the both measurements define accessibility \_ in space syntax in terms of streets while spatial interactions and links in terms of urban locations\_ are related through calculating the distribution of syntactic measures among the routes of walkable distances. The technique is as follows: The axial lines are converted to the points that qualifying the locations with syntactic measures. Each segment defining the street network is then associated to the closest points that hold syntactic mea-

**Table 1.** The categorization of the 2780 service areas within 0 to 35 locations of art events

Locations that are accessed within 250 meters walking distance	Number of segments in urban network	Percentage of number of segments in urban network
0	806	29.0
1	477	17.2
2	258	9.3
3	180	6.5
4	131	4.7
5	104	3.7
6	114	4.1
7	96	3.5
8	95	3.4
9	69	2.5
10	47	1.7
11	43	1.5
12	44	1.6
13	30	1.1
14	36	1.3
15	34	1.2
16	20	0.7
17	15	0.5
18	12	0.4
19	16	0.6
20	16	0.6
21	17	0.6
22	15	0.5
23	19	0.7
24	16	0.6
25	14	0.5
26	13	0.5
27	9	0.3
28	11	0.4
29	4	0.1
30	5	0.2
31	6	0.2
32	3	0.1
33	3	0.1
35	2	0.1
2780		



tures. It is then possible to ask for the distribution of syntactic measures among the identified routes of random walkers; and any differentiation can be identified based on their mean global integration, local integration and connectivity measures.

## 5. Findings

First, this section presents the locations of art events in the form of networked relations over the streets of Beyoğlu by the methods of GIS-based urban network analysis. The outputs are measurable walkable paths that are assigned to relevant line segments, named as 'the schemes of implicit accessibility-based spatial links'. Thereafter, the street network of Beyoğlu is analysed based on the differences in global and local integration and connectivity values derived through axial map analysis. Concurrently, the paper relates the outcomes of two analyses: the implicit network graph of spatial interactions to the explicit planar type of graph of street network.

### Schemes of Implicit Accessibility-based Spatial Links Between the Locations of Art Events

The first step calculation is based on the walkable network distances (service areas) for each identified location (mid points of each line in the line segment matrix) in the street network and the numbers of art events associated to these walkable network distances. The accessible art event locations within comfortably walking distance are fundamental rationale under this analysis. Here, the service areas derived through the network analysis are considered as possible pedestrian paths linking locations of art events and bring them into an interaction. Where possible, the pedestrian movement across these identified services areas would led to emerge different modes of urban space uses. As a result, this analysis provides a scheme to see the implicit spatial interactions and links between the locations of art events through the traces of random walking paths over the street network. Here, the uniquely identified walkable paths and the urban locations associated to them are labelled as 'accessibility-based spatial links' that have a potential to be enabled by the natural pedestrian movement in Beyoğlu.

Each accessibility-based spatial link refers the 250 meters long service area that extends as long as the turns of street network allows, and the locations of art events that are associated to the defined service areas. The result map shows that 250 meters network distance from each line segment's midpoint is achieved through variable number of turns along urban network, which goes up to 227. While Figure 4a illustrates the identified service area has 87 turns, the service area shown in Figure 4b has only 3 turns.

Figure 4c shows that the mean number of turns defining the service areas is 94.5, which means, rather than straight and long streets, short and angular streets are made up the ma-

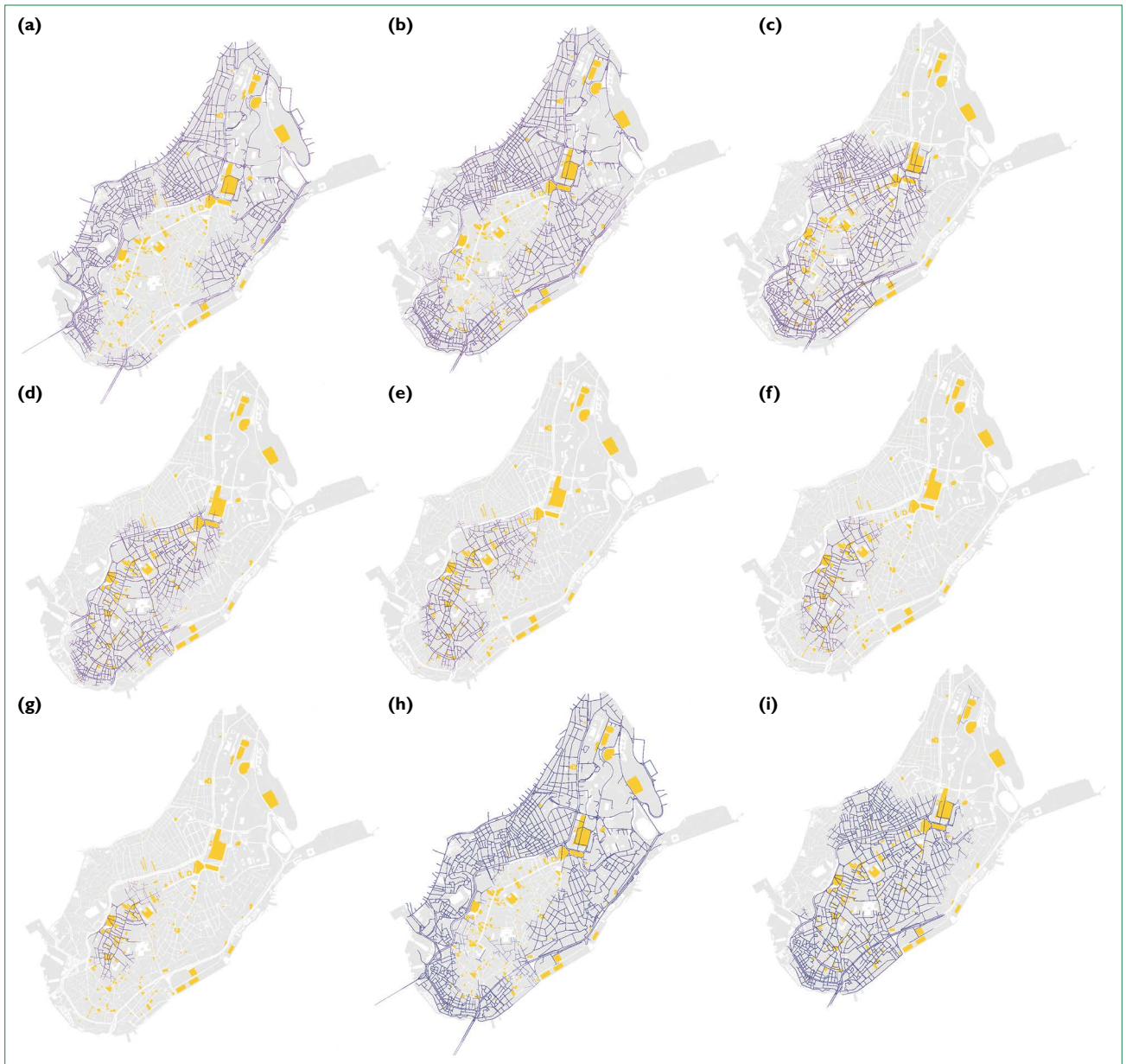




**Figure 4.** Calculation of 250 meters service area and the number of locations of art events that associates each service area (a) 250 meters walking distance with 87 turns (b) 250 meters walking distance with 3 turns (c) Distribution of number of turns defining accessibility-based spatial links (d) Correlation between number of turns and number of venues defining the service areas for each segments.

majority of Beyoğlu's urban network. Further to that, Figure 4d shows that the accessibility-based spatial links with 60 to 120 turns provides access to the highest number of locations of art events (between 20–35). Here, it can be said that the fine-scaled angular streets of Beyoğlu provide access to different directions, and thus to the variety of art events within four minutes. At the same time, the same figure shows that the mean number of art locations within the accessibility-based spatial links is 4.6, meaning that, most streets of Beyoğlu is never further than about 250 meters (4 minutes) walking distance from at least four locations of art events. And, the more regular, orthogonal and rectilinear street patterns do not afford to access more than four locations.

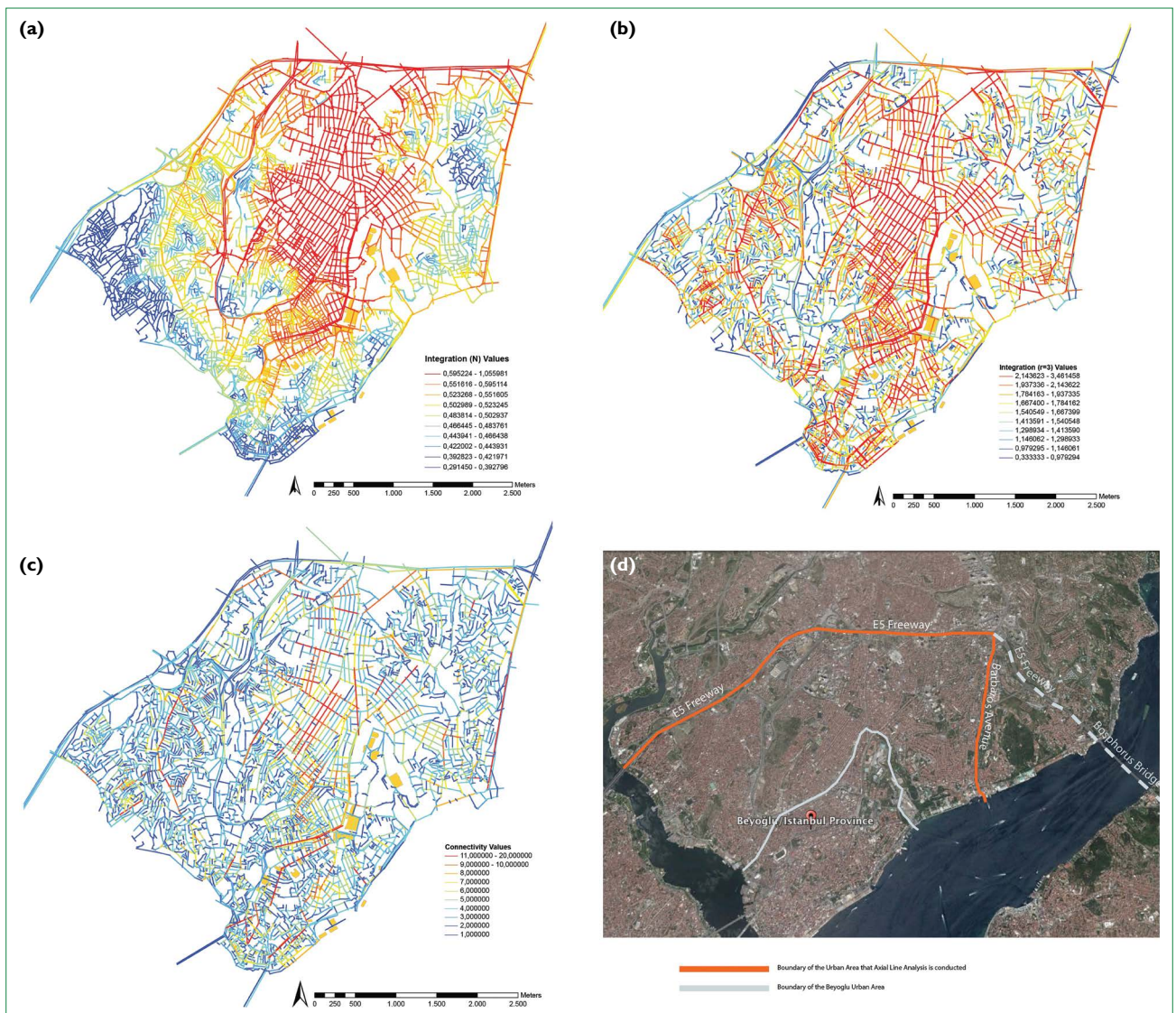
Looking at the spatial distribution of the schemes of accessibility-based spatial links in Figure 5, some implicit aspects of the ways that pedestrian movement can enable network structure among the event locations can be highlighted. In the periphery of Beyoğlu, the network structure is likely to expand over larger areas, but there is least number of locations that associate to these services areas (Fig. 5a, b). The networked patterns shrink in the centre, and associate notable number of event locations (Fig. 5c–g). Based on these findings, it can be said that moving inward from the periphery, the much the street network of Beyoğlu supports networked structure between the event locations; and there is more number of art events associating to these patterns. Alternatively, random walkers would more



**Figure 5.** Spatial distribution of the schemes of accessibility-based spatial links that associate to different numbers of art locations. In (a), no locations 'A'; In (b), 1–3 locations 'B'; In (c), 4–9 locations 'C'; In (d), 10–16 locations 'D'; In (e), 17–22 locations 'E'; In (f), 23–28 locations 'F'; In (g), 28–35 locations 'G'; In (h), 0–3 locations 'AA'; In (i) 4–35 locations 'BB' of art events are accessible within in 4 minutes.

spontaneously engage in the art events in the inner parts of Beyoğlu. To illustrate any balance in the distribution of services areas within least and higher numbers of locations, two schemes of proximity-based spatial links, the ones associating to 0 to 3 numbers of locations and the ones associating to 4 to 35 numbers of locations are visualized (Fig. 5h, i). Along Galatasaray Square, which is located in the middle of the Istiklal Avenue, the widest and spreading networked structure is identified, and the largest number of art events associate to it. On the southwest end of Beyoğlu, the shortest networked structure is identified, the least number of art events associate to it (Fig. 4b).

The outcome becomes an evident for the fact that the Beyoğlu's street network structurally enables accessible distances to the event locations, which is within technically considered as comfortably walkable distances. Here, the accessibility principle accounts for pedestrians to form urban spaces uses along street network through which the number of art events are close by. In the case of Beyoğlu, the increasing numbers of turns in the street network maintain accessible distances between the locations; and a pedestrian at anywhere on the street network is never too far from one or more of these locations and easily recognize concur-



**Figure 6.** (a) Visualization of axial line analysis of Beyoğlu according to the global integration (n) values of locations; (b) Visualization of axial line analysis of Beyoğlu according to the local Integration (R=3) values of locations (c) Visualization of axial line analysis of Beyoğlu according to their connectivity values of locations (d) The urban area the axial analysis is conducted.

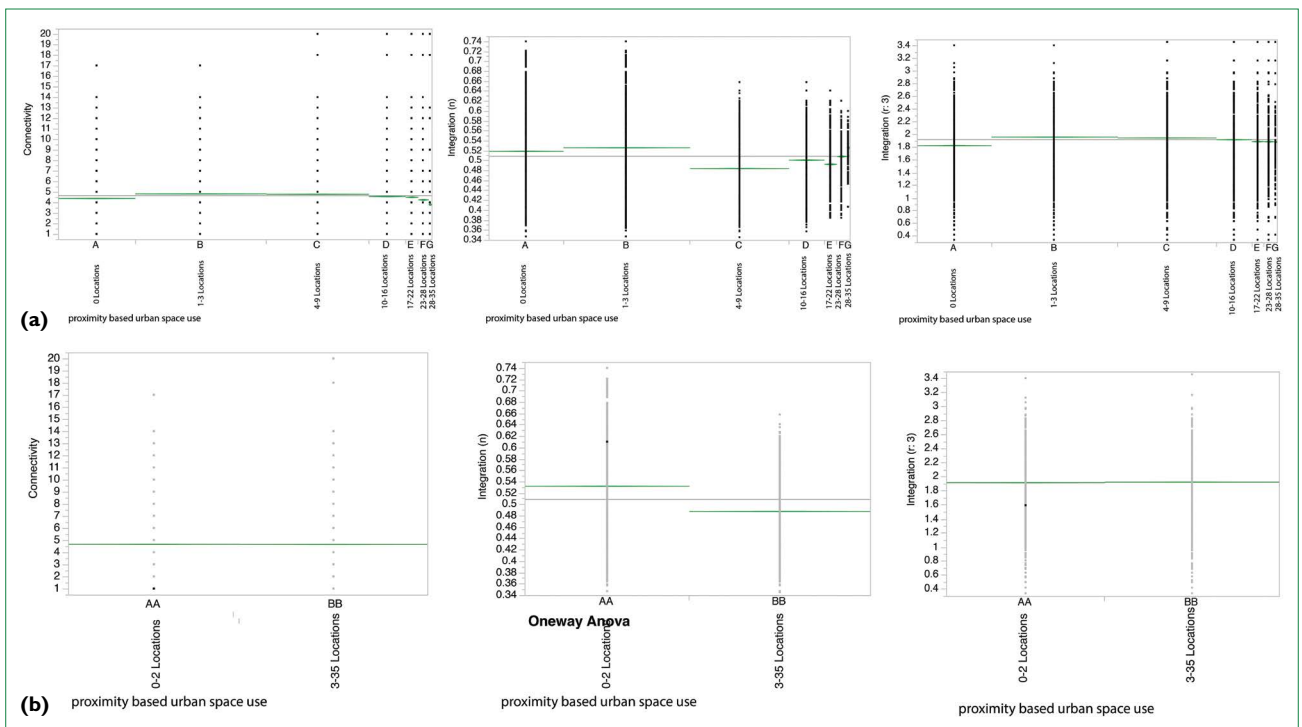
rent and multiple art events. The street network structurally makes discrete art locations into spatial interaction by the comfortably random walking paths. The trend towards accessibility-based spatial links associates a decreasing number of art events within 4 minutes walking distance from the inner to peripheral parts of Beyoğlu.

### The Accessibility Pattern of Beyoğlu's Street Network

As outlined above, as moving inwardly in Beyoğlu, the configurational and measurable attributes of street network more effectively support the networked structure among the event locations, and the art events bound to these identified patterns increases in number. The implication is that there is more room in the inner parts of Beyoğlu in which the pos-

sible random walking enable spatial interactions between the art events. Go one step further, the accessibility measures of street network suggests a further knowledge on the ways that street network support background human movement and unforced pedestrian presence.

The datasets used in this part were studied in my previous work on modelling human movement. The axial lines map of the urban area bounded by Istanbul E5 freeway and Barbarous Avenue (Fig. 6d) is used to present the patterns of accessibility that is formed by the Beyoğlu's street network. The axial lines map comprises 5829 axial lines and covers an area of about 1800 hectares. The axial lines are measured and visualized according to their syntactic measures, respectively global integration (n), local integration (r=3) and connectivity



**Figure 7.** Distribution of the syntactic measures for each scheme of accessibility-based spatial links in (a) Differentiation is identified among 7 schemes of accessibility-based spatial links (A, B, C, D, E, F, G); in (b) Differentiation is identified among 2 schemes of accessibility-based spatial links (AA-BB).

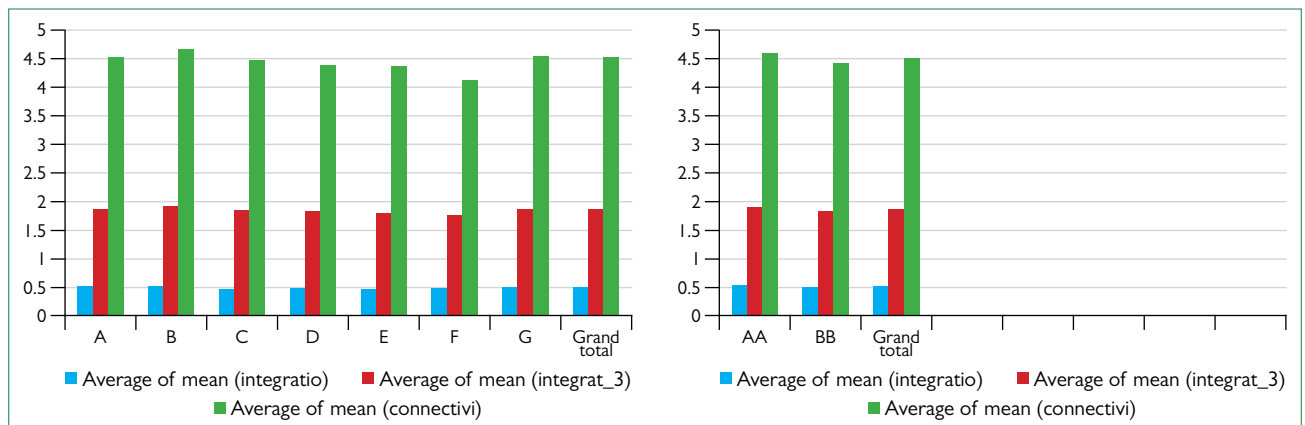
values (Fig. 6a–c). The axial lines analysis provides some basic insights about the exposure of the art events to the densities of background movement based on the measures of street connectivity and integration for each location in the urban network. Based on low correlation between global and local syntactic measures, the evidence implies that the street network of Beyoğlu is less intelligible, that is, the urban spaces' impact on people to make judgments on one space relationship to the entire system is low. It is derived that the locally connected few routes in the system correlate well to global integration value, but some of less globally integrated streets have relatively higher connectivity and local integration values. In the following step of the analysis, the evidence shows that the art events are associated with the more integrated axial lines, globally (radius  $n$ ) and locally (radius 3), and also with the more connected lines ( $n=6133$ ,  $F=27.4501$ ,  $p<0.0001$ ;  $n=6133$ ,  $F=444.2190$ ,  $p<0.0001$ ;  $n=6133$ ,  $F=884.2744$ ,  $p<0.0001$  respectively).

### Relating the Accessibility-based Spatial Links to the Accessibility Pattern of the Street Network

There is however a fundamental way of relating the schemes of accessibility-based spatial links to the measures describing the accessibility pattern of the street network by assuming the schemes of accessibility-based spatial links are conceived of implicit network graphs of spatial interactions while the accessibility pattern of street network may support/prevent

random walking take place in these networks. Assessing the underlying topology of Beyoğlu's street network that associates to the schemes of accessibility-based spatial links that are categorized on basis of the number of art events associating them (shown in Figure 5: the categorization is named as A, B, C, D, E, F, G, AA and BB), these set of schemes are themed according to their global and local accessibility values (global integration, local integration and connectivity measures); and any significant differentiation among their accessibility measures is derived.

The distribution of syntactic measures among the categorized groups of the schemes of accessibility-based spatial links present meaningful differentiations. The differentiation between the two categorized groups of the schemes which associate to the approximately equal numbers of segments [shown in Figure 5h (AA) and Figure 5i (BB)] is captured based on their mean syntactic measures. Whilst the scheme associates up to 2 event locations covers the waterline and outer zone of Beyoğlu, the scheme with 3 to 35 event locations covers south-eastern waterline and inner zones. As illustrated in Figure 7b, the scheme associating up to 2 event locations follows globally more but locally less integrated streets. (Respectively  $n=262972$ ,  $F=26409.13$   $p<0.0001$ ;  $n=262972$ ,  $F=32.9773$   $P<0.0001$ ) In other words, it occupies the locations within low values of local integration that are deepest in the local system. The scheme with 3 to 35 locations occupies the locations within more connections to the local system, which



**Figure 8.** Mean syntactic measures for each scheme of accessibility-based spatial analysis links.

are shallowest on average. At a global scale so to speak, the scheme within higher number of event locations occupies the locations within lower global integration, meaning that less integrated locations to the entire system. In other words, the high natural pedestrian movement in the globally less but locally high integrated inner zones of Beyoğlu would support expanding network structure between increasing numbers of event locations. However, relatively lower natural pedestrian movement in the outer zones of Beyoğlu would not create multiplier effect to support networked structure between less numbers of event locations.

At the second step, the distribution of syntactic measures associated to the seven categorized groups of these schemes [Fig. 5a (A), 5b (B), 5c (C), 5d (D), 5e (E), 5f (F), 5g (G)] captures the differentiation in their mean syntactic measures. This classification is based on equal intervals between the numbers of event locations associating to the schemes, regardless of the total number of segments making them. Hence, this more fragmented classification is shown the patterns occupying the least and the most integrated and segregated zones in Beyoğlu, that respectively attract low and high natural pedestrian movement. Figure 7b shows the distribution in their mean syntactic values in more detail while Figure 8 illustrates it in graphics. Among seven groups of schemes, the one with 1 to 3 locations (B) associates to the globally and locally integrated locations ( $n=262972$ ,  $F=2680.944$   $P<0001$ ;  $n=262972$ ,  $F=559.7330$ ,  $P<0001$ ). As the number of event locations increase, the local syntactic values decrease. The scheme with no art locations (A) accessible includes the locally deepest but globally shallow locations. The global integration is peak at the scheme with 1–3 (B) and 28–35 (G) event locations. It is lowest in the scheme with 4–9 event locations (C).

To this point, the above calculations to relate two sorts of accessibility measurements end up with two major findings: (a) the accessibility-based spatial links associating average num-

ber of event locations, which covers the urban area excludes the inner parts at vicinity of Istiklal Avenue, are highly integrated at local level. Along these identified streets in Beyoğlu, the networked structure among event locations can more strongly operationalized by natural pedestrian movement. (b) However, the inner core areas of Beyoğlu in which the network structure expands over larger areas and provides access to the increasing number of event locations are locally segregated. Even there are remarkably higher numbers of event locations in the proximity of 250 meters walking distance in this zone, the configuration of street network is less legible to form efficient networked structure among event locations.

## 6. Results and Discussion

The findings from the spatial analysis outlined above have some implications on the role of street network to sustain and develop art-driven urban vitality in Beyoğlu. The enhancement of urban vitality is based on the idea that the social function of space is realized through the capacities of urban form to aggregate people and initiate spatial interactions and thus social ones. The possibility of space is not just contingent location, but also it might condition, as Netto (2007) mentioned, essential constituent of socialization and communication. While such art events documented and mapped here they are, on the ground, taken as social practices embedded in set of art events. The locations that are assigned, as buildings, venues, squares and streets are the places in which the event participants have probably socialized and ideally engaged in communication and knowledge exchange amongst others. Many studies highlight this sort of social role assigned to art spaces. Art spaces are taken not only as spaces accommodating art organizations, but also as spaces functioning as social hubs where artists seek inspiration, socialize, network and establish their professional contacts with other art organizations or potential clients and show the products of their creative activities and admire the cultural achievements of others (Currid, 2007; Heebels and

van Aalst, 2010). With these characteristics, they seem to be dynamic catalyst for enhancing urban vitality.

The aggregate state of art events demonstrated in this paper, is a case in point, showing how significant outcomes can occur by virtue of street network - in this case the locations of art events benefit the accessibility pattern of street network; and various processes of random walking take place between these event locations, which are anchored in terms of the street network generate spatial links and interactions between several art events. Each assigned art event can be seen as an active medium of social co-presences in a place; and the potential pedestrian movement along Beyoğlu's street network as fundamental force of both linking one location to another.

Further to that, the relational aspects between the configuration of street network and the implicit network graph of spatial interactions and links between event locations have potential to alter the use of urban space through influencing organized and intentional nature of art-driven social copresences in Beyoğlu. Going one step further, the street network can be seen as a material agency having capacity to alter situated art-driven social co-presences into a networked pattern. In other words, Beyoğlu's streets offer variety of spaces in proximate distances that seem to allow artistic networks drawing a close-knit co-awareness among themselves. These streets are likely advantageous for random walkers to easily involve in arts-driven social copresences. The event participants may also easily trace and access other similar events and interact with like-minded people. These situations can keep the place be vital with art events and interacting people.

## 7. Conclusion

This paper can be seen as an attempt providing more subtle insight on the spatial organization of artistic networks, different from an economic geography perspective in which clusters of art, culture and creativity are extensively understood as concentrations of nodes that are reliant on spatial proximity. Even clusters are occasionally identified in the development of artistic networks, these networks, however, embed in space and revolve around multiple modes of social and spatial interaction patterns. The argument of the paper is that the dynamics that are generated by urban form is decisive on how these clusters perform in the city. By directing the focus on what these clusters offer to the city at micro urban scale in terms of the development of relations between the state of social co-presences and the spatial culture of place, the paper highlights the inability of such an approach that take artistic networks as encapsulated activities distributed over urban space to capture potential spatial interactions.

It is, instead, essential to relativize the role of clusters by directing attention towards spatial interactions models that

predict movement directly between nodes of these clusters. Developing generic representation of the street network with the locations of art events, from which the space syntax and spatial interaction variants are defined, gives the opportunity not only to depict the cluster of art events in the context of networked spatial relations but also to see its potentiality to inform and alter social situations. That is to say, the art driven social co-presences should not be necessarily assessed, as they are experienced in the boundaries of the assigned locations of art events. Rather, the social copresences would expand towards streets and experienced with the regular pedestrians of Beyoğlu. The pedestrian use of urban space would strengthen the sense-of communal ties among artist communities and their ties with localities.

This paper's emphasis differs from cultural policy approach to the development of artistic networks in cities, since this sort of effort focuses on organizational specificities of networked creativity emphasizing the existence of multiple actors and governance modes. The emphasis, here, is the object of urban planning and design (the physical environment). To an important extent, there is a lack of evidence concerning the spatial specificities of artistic networks. This indifference leads urban policy makers and planners attune to conceptual sources realigning clusters of art with knowledge-based regime of capital accumulation as well. The role of urban form is often over-estimated in the assessment of clusters of art in cities. There needs to be an intention to highlight this role. The effort mapping these clusters in the form of morphological assemblages –buildings, streets, open spaces- situates this introduced urban phenomenon within the role of urban planning in modes that implement design solution through spatial interventions.

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