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HYBRIDIZATION AS A DESIGN STRATEGY TO ATTRACT AND RETAIN PEOPLE AT SHORT DISTANCE FROM EACH OTHER IN PUBLIC OPEN SPACES: a necessary condition to socialize

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Resumo:

The importance of urban design in influencing passive and active forms of social interaction has been verified in different types of public spaces. However, since most of environment-behaviour research was carried out in North America and Europe, the literature on how urban design may support co-presence, and hopefully active forms social interaction, lacks a cross-cultural perspective. To make a useful contribution to the field of urban design, this empirical research examines the conditions that support passive and active forms of social activities in Liberdade Square (LSq), Raul Soares Square (RSq) and Estação Square (ESq). The fieldwork activities included unstructured and structured direct observations carried out in 2006 and 2016. The research adopted a quali-quantitative approach to analysis. The results shown the relevance of hybridization as an important design strategy to attract and retain people that experience highly contrasting urban conditions as part of their daily life.

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A necessary condition to socialize

INTRODUCTION

The development model adopted in Brazil through its history has led to increasing concentration of wealth (DEL RIO, 2009). The socio-economic fragmentation of the urban fabric of Brazilian cities is a longstanding problem that has accentuated through globalization. It is expected that democratic processes will increase pressures to develop cities socially more just and eventually put into practice the discourse of social cohesion.

In a country characterised by highly contrasting urban conditions affecting different groups within the same city, efforts to foster social cohesion will require more than social mix in itself. In the meantime, however, the value of socially heterogeneous public open spaces as a neutral, inclusive and pluralist stage for learning about the other, developing tolerance as well as pacific forms of conflict resolution cannot be underestimated.

It has been generally assumed that public democratically managed urban open spaces help individuals to participate in society, afford different social groups to express themselves, provide information about how diverse is a society, and, eventually, may strengthen social cohesion. The importance of urban design in facilitating (or inhibiting) passive and active forms of social interaction has been verified in different types of public spaces (CARR et al., 1992; GEHL, 2001,2010; GEHL, KAEFER & REIGSTAD, 2006; KAPLAN, KAPLAN & RYAN, 1998; MEHTA, 2007, 2009; STEVENS, 2006; WHYTE, 1980).

However, since most of this research was carried out in North America and Europe, the literature on how urban design may support co-presence, and hopefully active forms social interaction, lacks a cross-cultural perspective. The mediation of human perception and cognition by cultural, sub-cultural and personal filters explains the need to develop of environmental-behaviour research in different cultural contexts. Cultural filters are the result of enculturation processes at a large scale and refer to the process of learning to comprehend environmental codes (RAPOPORT, 1982). The sub-cultural filters reflect the fact that individuals belong to social groups whose members tend to share attitudes, preferences, and

the like, and to act accordingly to their behavioural norms. Personal filters reflect individual experiences and physiological abilities (RAPOPORT, 2005). The socio-cultural context indubitably plays the important role of enabling people to co-act through sharing notions of adequate behaviour in a given urban environment (PORTEOUS, 1977; RAPOPORT, 1982).

Assuming that co-presence in socially heterogeneous urban open spaces is a necessary condition to interaction among different social groups, to make a useful contribution to the field of urban design, this empirical research examines the conditions that support passive and active forms of social activities in Liberdade Square (LSq), Raul Soares Square (RSq) and Estação Square (ESq), three central urban squares in Belo Horizonte, Brazil. It aims to further our understanding on how urban design of central urban squares may attract and retain people that experience highly contrasting urban conditions as part of their daily life. Empirical studies in these inclusive and pluralist urban open spaces offer a unique opportunity to explore the potential of urban design as a tool to generate attractive urban open spaces in contexts that face serious social, environmental and managerial issues.

The fieldwork activities included unstructured and structured direct observations. The observations were carried out in different weekdays in 2006 and 2016. The research adopted a quali-quantitative approach to analysis. The next section briefly reviews the literature on the influence of different urban design conditions on social interactions; then, the methodology adopted will be described; finally, the research results will be presented and conclusions drawn.

CONDITIONS THAT FRAME SOCIAL INTERACTIONS

Evidence suggests that the most common reactions drawing people to urban open spaces, which arise from interactions between people and environments, are the opportunities to experience a sense of protection, comfort and delight (ALFONZO, 2005; CARR et al., 1992; GEHL, 2010). The experience of a sense of protection against accidents, crime, violence and sensory overload is a basic common user need (ALFONZO, 2005; CARR et al. 1992; GEHL, 2010). A sense of comfort is likely to increase when urban environments either facilitate the effective performance of on-going activity or at least attenuate the factors that might inhibit it (ALFONZO, 2005; GEHL, KAEFER & REIGSTAD, 2006; SHAFTOE, 2008). A variety of terms, including “discovering” (CARR et al., 1992), “aesthetics” (ALFONZO, 2005) and “delight” (GEHL, 2010) have been used by different authors to refer to the common “[…] desire for stimulation and delight we all have in new, pleasurable experiences” (CARR et al., 1992, p.134). Opportunities to experience a sense of protection, comfort and delight tend to draw people to urban open spaces as well as the opportunities to see, listen and talk to other people (CARR et al., 1992).

Activities in urban open spaces can be grouped in three types: optional, necessary and social (GEHL, 2010). Optional activities in public open spaces include those activities that the participants choose to perform when they have time available and the environmental conditions are favourable. Necessary activities tend to occur in any environmental condition. People-watching and waiting for the bus are examples of optional and necessary social

activities, respectively. Social activities take place whenever there are at least two people sharing the same space at the same time.

Activities in urban open spaces can be dynamic or stationary (GEHL, 2010). The former includes those that demand movement and the later comprehend the other activities. Walking and sitting are examples of dynamic and stationary activities, respectively. Environmental quality tends to influence where stationary activities emerge in public open spaces because wherever people need to stay for a longer time, they will prefer to spend time in spaces where they can enjoy better conditions.

Passive and active forms of socialization take place in urban open spaces (CARR et al., 1992). Passive forms social interactions are weak and one-off interactions (e.g. people watching), while active social interactions refer to close, strong and more intense encounters with other people (e.g. conversing) (CARR et al., 1992). Evidence indicates that the former type of socialization is the most common type of social interaction in dense urban areas (GEHL, 2001; WHYTE, 1980). Informal and cursory social interactions in urban open spaces are a prerequisite for more intense forms of social interactions to develop, hopefully, stimulating social cohesion (PETERS; ELANDS & BUIJS, 2010).

Active social engagement is more common in spaces used by people with common interests or backgrounds (GEHL, 2001; WHYTE, 1980). People usually talk to people who they do not know when they have a pressing reason to do it because these encounters can be problematic. Appealing aspects of the environment, amenities, social events, as well as some design solutions may draw people together and propel conversations. When any external stimuli catalyses active interactions, it is named “triangulation” (WHYTE, 1980).

Frequently, to minimise potential conflicts: (i) social groups territorialize (portions of) urban open spaces at specific times, and (ii) people who do not know each other keep a spacing between themselves. The literature stresses the importance of distance in regulating intimacy and intensity of social interactions (GEHL, 2010; HALL, 1966; RAPOPORT, 1977). More intense forms of social engagement tend to take place at short distances because when the distance between people is reduced, the amount of sensory information acquired by them increases greatly (GEHL, 2001; GEHL, KAEFER & REIGSTAD, 2006).

Hall (1966) described in “The hidden dimension” four ways in which distance frames communication: (i) intimate distance - 0 to 45 cm, (ii) personal distance - 45 cm to 1.20m, (iii) social distance - 1.20 to 3.70m, and (iv) public distance - more than 3.70m. These distances, however, may vary with culture. Intimate distance is the distance at which contact is emotionally charged. Personal distance describes the distance of conversation on important topics. Social distance is the contact distance to exchange ordinary information, such as about work, weather. Public distance is the distance of more formal contact. In occasions when there is a one-way communication, the “audience” tend to keep a public distance to signal that they do not want to co-act, but only see and hear what is happening.

As cities become socially more fragmented, the importance of accessible and publicly managed urban open spaces in allowing encounters between people who would not

otherwise meet, increases. The following section reviews the literature on how urban design may draw people together and facilitate (or inhibit) social interactions.

URBAN DESIGN AS A TOOL TO ATRACT AND RETAIN PEOPLE AT SHORT DISTANCES FROM EACH OTHER

Empirical works have deepened our understanding on how the elements of urban design in themselves and their arrangement in space, i.e. urban design qualities, tend to trigger certain individual reactions, influencing behaviour in different types of spaces, mostly in the North-American and European contexts. The literature on urban design describes a long list of urban design qualities, some of them highly similar. This list includes contrast, deflection, depth, distinctiveness, diversity, complexity, legibility, coherence, human scale, naturalness, novelty, visibility, robustness, and so forth.

Previous empirical research identified that paths, nodes, thresholds, edges and props are urban design elements very likely to mediate social interactions, including conversing (AELBRECHT, 2016; MEHTA, 2007, 2009) and people-watching (MEHTA, 2007, 2009; WHYTE, 1980). Some authors define some of these elements as socially conditioned, or rather, as a sort of social event. For example, Lynch (1960, p.75) define a “thematic concentration” as a kind of node. For the purposes of this research, which aims to examine the spatiality of social interactions, these elements are those fixed or semi-fixed components of spaces open to manipulation by practitioners.

Paths are lines along which people move (AELBRECHT, 2016; LYNCH, 1960; STEVENS, 2006). Nodes are junctions of paths where users can enter (Stevens 2006). Edges are lines, not necessarily fixed and impenetrable, that break, contain or run parallel to domains (AELBRECHT, 2016; LYNCH, 1960; STEVENS, 2006). Thresholds are openings in the edges and, therefore, a kind of transitional zone between different domains (AELBRECHT, 2016; STEVENS, 2006). This element of urban design differs from edges in that it joins instead of splitting different zones. Props cover a variety of small-scale fixed and semi-fixed elements that allow different forms of close-up interactions (AELBRECHT, 2016; MEHTA, 2009; STEVENS, 2006).

Districts are zones that stand out from the background due to their distinctive character while landmarks are axial points in the landscape. Rocinha in Rio de Janeiro and the Eiffel Tower in Paris are examples of district and landmark, respectively. Previous empirical research, however, verified that districts and landmarks do not influence social interactions but merely function as references that aid to navigation (LYNCH, 1960, STEVENS, 2006).

Nowadays, it is widely acknowledged that the design, arrangement and management of the elements of urban design, among other factors, influence individual reactions, such as a sense of protection, comfort and delight, and therefore behaviour. This study focuses on how elements of urban design may support optional stationary social activities in urban squares in the context of the central area of Belo Horizonte, a large city in Brazil.

THE CONTEXT

The context of this study is Belo Horizonte, a city located in the Southeast of Brazil. Today it has a population of approximately 2,5 million of inhabitants and an area of 331 km2 (IBGE 2010). It was established on December 12th 1897 in an area previously occupied by the colonial village Curral Del Rey in the valley of the Arrudas River. Coherent with the spirit of the time, principles of hygiene, comfort and embellishment informed the design of the first republican city to be planned and established in the country (ROBBA & MACEDO, 2003).

The Zona Urbana (Urban Zone), currently named Área Central (Central Area), featured the original plan of the capital of Minas Gerais, approved in 1895. A grid of orthogonal streets intercepted by large boulevards at 45 degrees and limited by a circular avenue, Contorno, caracterized it. Urban squares were designed at the city's key intersections. Liberdade Square was envisaged to function as a civic atrium of the Palácio da Liberdade. Estação Square, located in front of the Estação Ferroviária Central (Central Railway Station), was imagined as the main entrance of the city and Praça Raul Soares as a roundabout linking the east, west, north and south portions of the city.

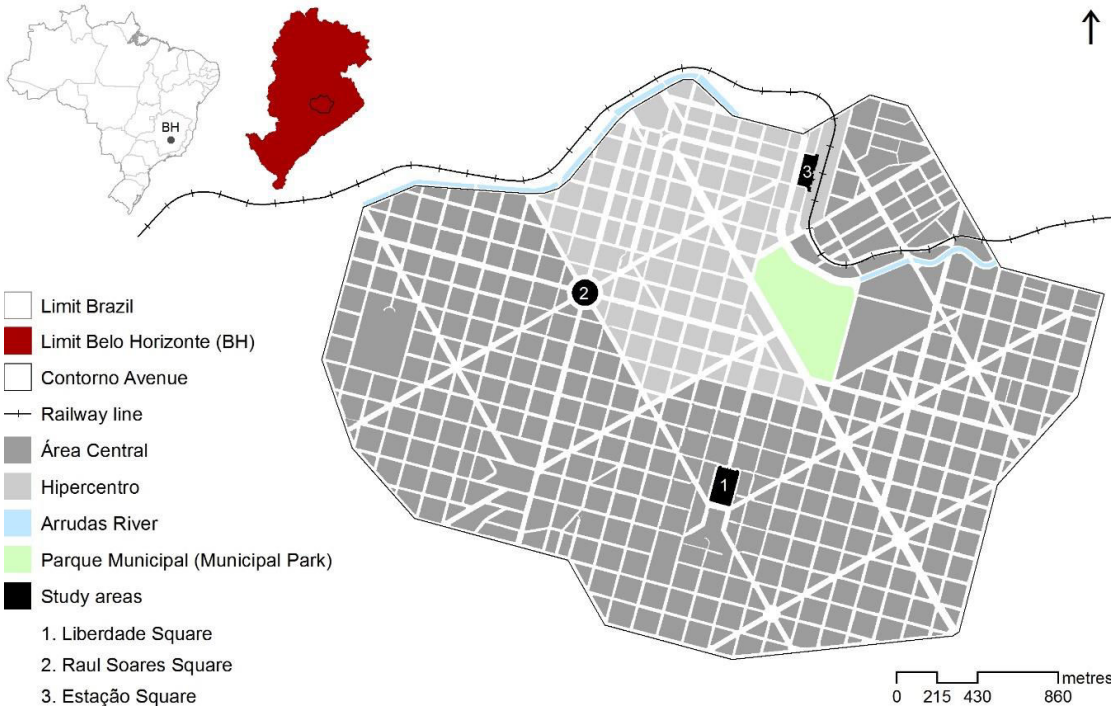

Figure 1: Location plan of Liberdade Square, Raul Soares Square and Estação Square in Belo Horizonte. Source: adapted by the author from drawings provided by Prefeitura de Belo Horizonte (Belo Horizonte Prefecture).

The current design solutions of Liberdade Square (see Figure 2) and Raul Soares Square (see Figure 3) date 1920 and 1936, respectively. The prevalence of the European culture at the beginning of the century 20 in parallel to the country need to earn credibility as an exporter of agricultural products strongly influenced the conception of these urban squares, conceived as traditional landscaped urban squares designed in eclectic style for people to meet and stroll.

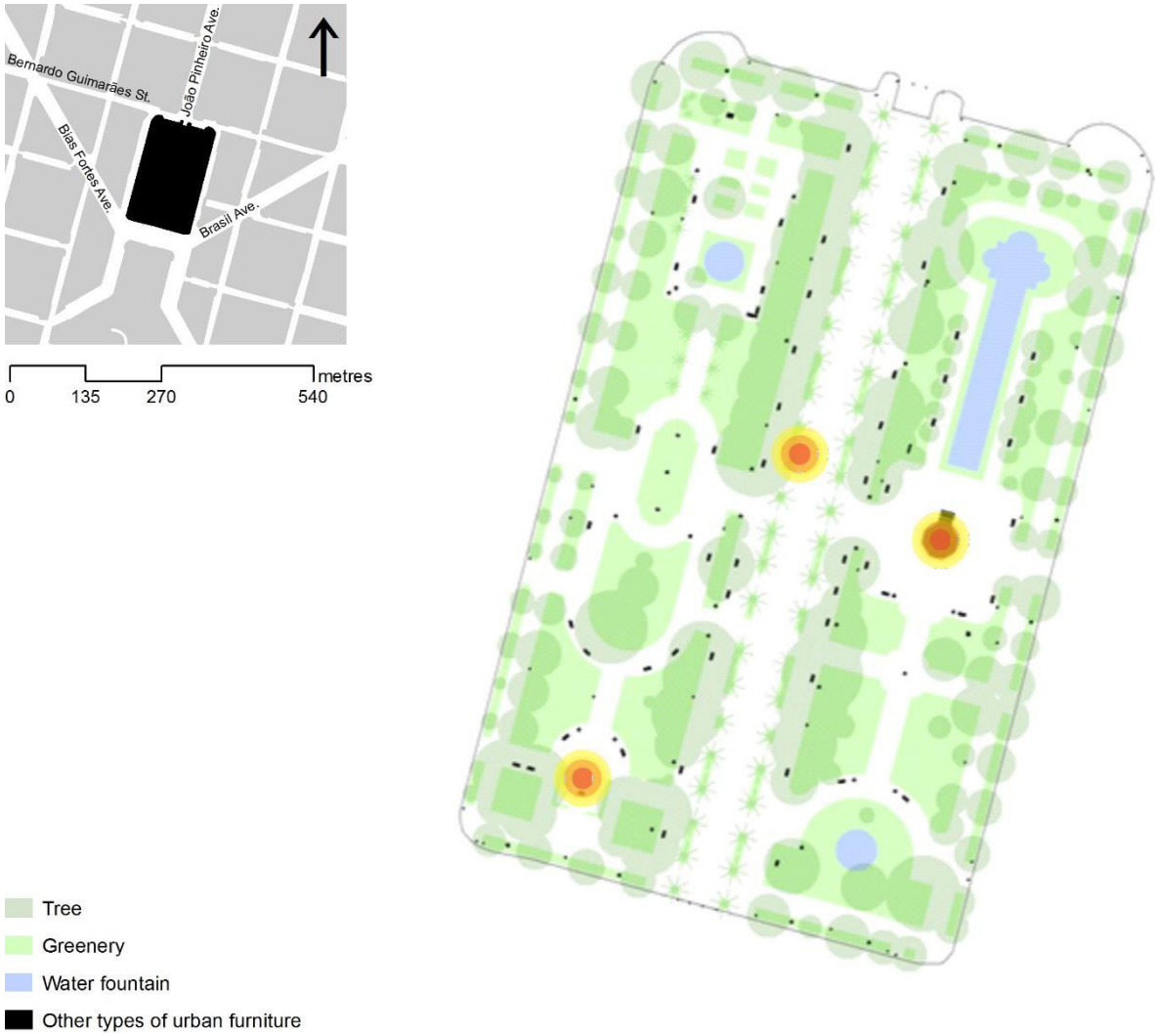

Figure 2: Site plan of Liberdade Square.
Source: adapted by the author from drawings provided by Prefeitura de Belo Horizonte.

The construction of the first skyscrapers in the Zona Urbana was during the 1930s and the 1940s. The skyline of the traditional city centre of Belo Horizonte changed substantially due to multiplication of tower blocks in parallel with the demolition of historic buildings. From the 1950s until the 1970s, the large cities in Brazil witnessed an unprecedented expansion of their borders in parallel with the saturation of their traditional city centres (ROBBA & MACEDO, 2003). In parallel to the growing density, vehicular demands guided the structuring of Brazilian cities.

In the 1980s there was a rise in Brazil of different ways of understanding and coping with urban issues, alongside an ecological consciousness. Democracy became a central issue in city building (DEL RIO, 2009). Since then, several physical interventions have been implemented in the Central Area of Belo Horizonte as part of the public sector efforts to transform it in a more people-friendly context. Examples: the refurbishment of the Estação Square (2001) and the restoration of Raul Soares Square (2008).

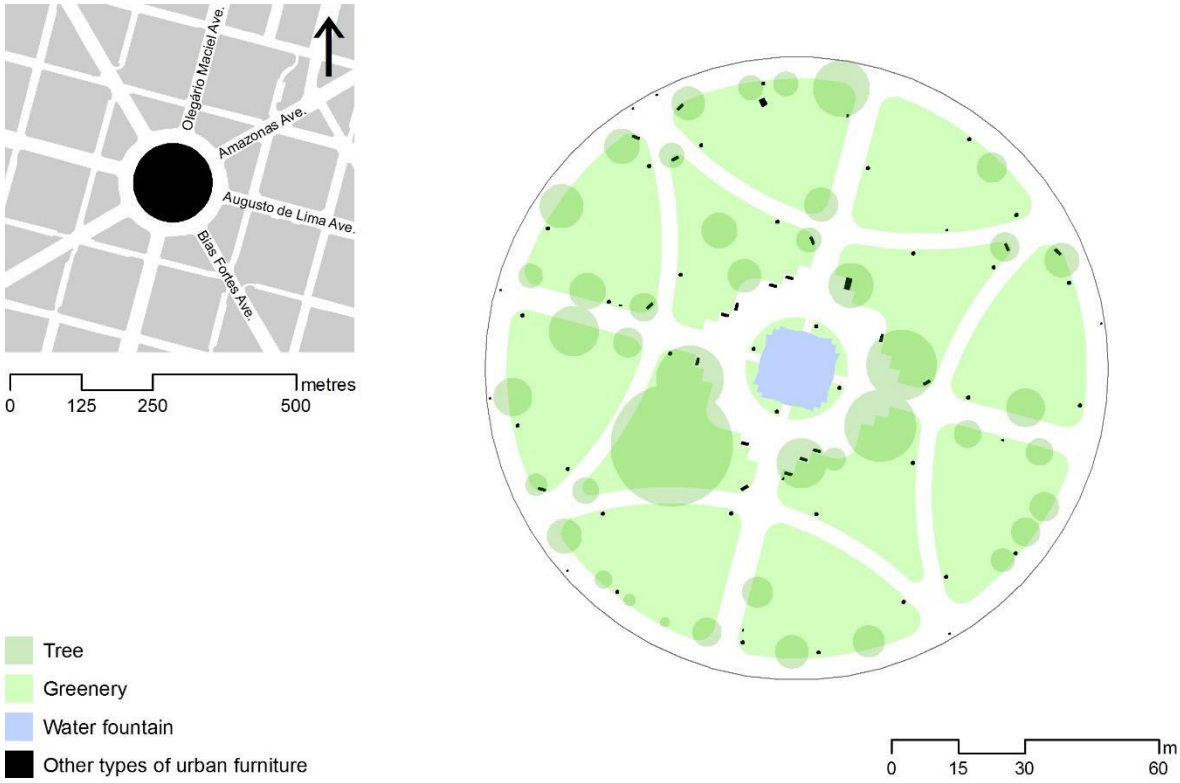

Figure 3: Site plan of Raul Soares Square (2006)
Source: adapted by the author from drawings provided by Prefeitura de Belo Horizonte.

In consonance with the constitutional text, the municipality's comprehensive master plan goals the promotion of "right to the city" as a way to secure a general welfare. Belo Horizonte's master plan defines the importance of providing opportunities for personal, social, cultural, political and economic development for all citizens in a way the city becomes more democratic. The document also recognizes the relevance of extending and/or improving urban open spaces.

Today despite the attempts of the local authorities of Belo Horizonte to transform its central area in a people-friendly area, pollution, congestion, crime, violence, dirty and other negative aspects are still associated with it. These environmental, social and managerial issues, however, have not prevented their urban squares to function as fundamental spaces for social-mix. These spaces, as well as the central urban open spaces in other large Brazilian cities, have attracted and retained a large range of people since ever (ROBBA & MACEDO, 2003).

THE CASE STUDY SITES

The case study sites of this research are three urban squares located at the intersection of highly busy roads in the Central Area of Belo Horizonte: Liberdade Square, Raul Soares Squares and Estação Square (see Figure 1). The selection of urban squares within the central area of Belo Horizonte means that all case studies share similar environmental, social and managerial issues. For the purposes of this research, central urban squares are "[…] public open spaces [located in central urban areas] meant to leisure and social mingling, accessible to the population and free of vehicles" (ROBBA & MACEDO, 2003, p. 17).

Liberdade Square and Raul Soares Square are examples of traditional “city squares” and Estação Square represents a new type of gathering urban open space that merges attributes of the “transit foyer” and the “city plaza”, in accordance with the typology proposed by Cooper Marcus and her colleagues (1998). “City square” is a type of landscaped urban square, frequently featured with sculptures and fountains, limited by streets and located at key intersections in the historic core of cities. “Transit foyer” includes urban squares created to facilitate access to heavily used terminals of public modes of transportation and “city plaza” refer to highly visible hardscaped central urban squares designed to accommodate large events.

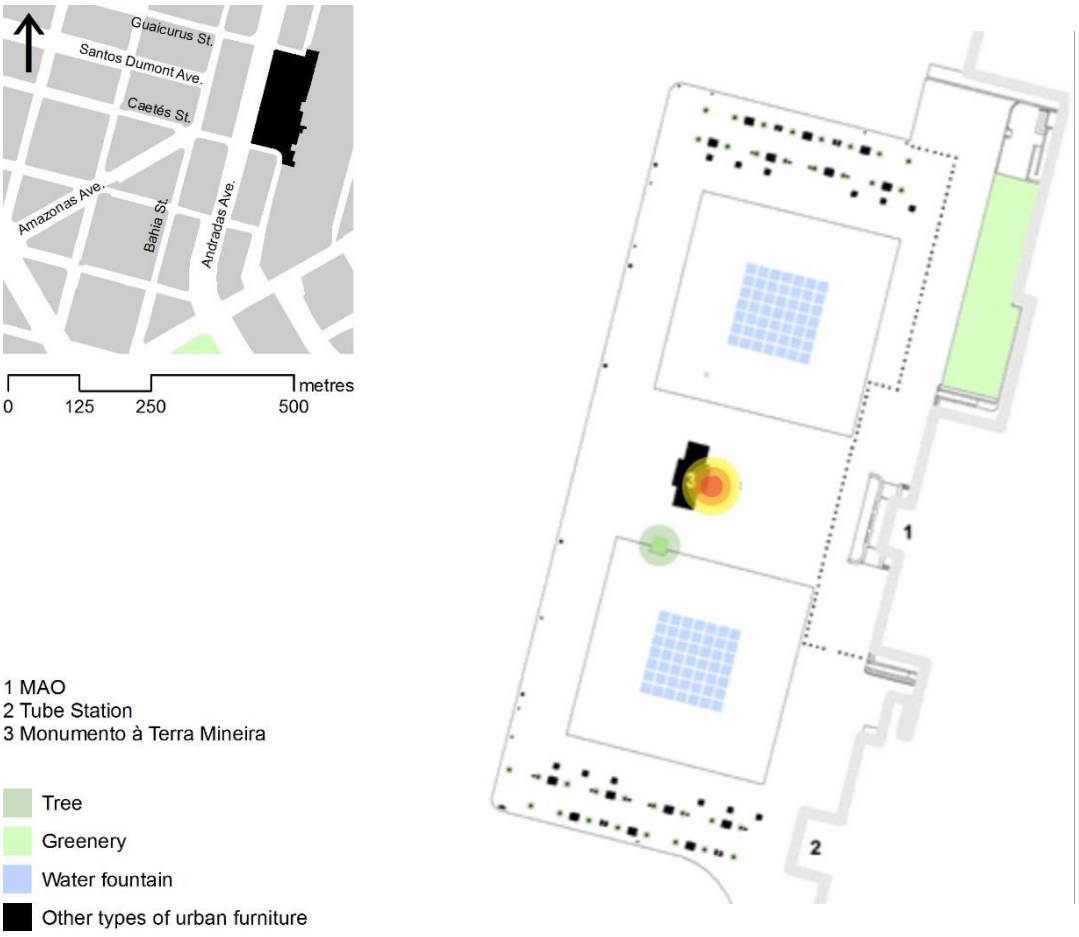

Figure 4: Site plan of Estação Square.
Source: adapted by the author from drawings provided by Prefeitura de Belo Horizonte.

The central areas of large cities in Brazil tend to differ remarkably from those in the European and North-American urban contexts in that (i) they are known as congested, polluted, poorly maintained and crime-ridden in the country and around the world, despite the on-going efforts to transform it a people-friendly area, and (ii) a significant number of people who experience highly distinct urban conditions in a daily basis use their urban open spaces in a daily basis (ROBBA & MACEDO, 2003). The present study, therefore, represents a potentially enlightening opportunity to explore how design solutions may retain optional

social activities in gathering urban open spaces within contexts that have faced social, environmental and managerial problems.

METHODOLOGY

This study examines the behavioural data gathered through (i) unstructured observation, and (ii) systematic behavioural mapping technique. Unstructured observation occurred in an earlier stage of the research to yield a provisional list of the optional social stationary activities to be recorded during the systematic observations. Systematic behavioural mapping was carried out to (i) locate optional social activities in space and time, (ii) identify types and frequencies of optional social activities in the case study sites, as well as (iii) demonstrate their association with a particular spatial condition. Photos were discretely taken to allow further analysis. The focus on optional stationary social activities is justified on the basis that they are likely to occur under optimal environmental conditions (Gehl 2010). The data collected in 2006 was part of a PhD research developed at Oxford Brookes University.

The unstructured observations were carried out between 9 and 21 o'clock spread out over weekdays and weekends. Time and financial constraints, however, limited the structured observation sessions to only a section of the life cycle of LSq, RSSq and ESq: weekdays between 12.00 and 14.00 o' clock. This time boundary was chosen because a large range of people is likely to carry out different types of optional activities during the lunch-time break in Brazil. The data collection was randomly undertaken in June and August 2006 and in September and November 2016.

The analysis of the data collected was more a case of theoretically informed interpretation than measurement of factual data. Thus, the results presented in the following section should be interpreted as aiming to expand theory and treated as a set of probable assumptions rather than a set of quantitative predictions. The observation sessions took place on different weekdays to include a wide variety of people in the sample and randomised procedures were used to enhance the representativeness of the sample. The present study is developed in line with the theory of "environmental probabilism", which suggests that in a given environment, some choices are more likely than others. Thus, it is assumed that environments do not control activities in a purely deterministic way, but either facilitate or inhibit certain behaviours.

URBAN SQUARES AS SPACES FOR MEETING STRANGERS

This study classifies optional social stationary activities in single and group activities. Single activities do not require the presence of more than one individual to take place (e.g. reading) and group activities are active forms of social interaction whose occurrence demands more than one person sharing the same space at a specific time (e.g. talking). The incidence of single activities in urban open spaces matters because it is a prerequisite for development of group activities.

The evidence collected during the unstructured observation sessions indicates that LSq, RSSq and ESq are socially heterogeneous gathering urban open spaces in a context

associated with traffic noise, air pollution, periodical lack of adequate maintenance and crime-ridden problems. The types of people who use these spaces in a daily basis are very diverse: elderly, adults, young couples, teenagers, children, homeless, hippies, students, rich and poor.

The quantitative analysis of the data gathered during the systematic observation sessions indicates that a variety of single and group activities has been common in central urban squares in the context of Belo Horizonte (see Table 1). The LSq, RSSq and ESq are spaces to see, to self-expression, to socialize, to relax, to learn about social skills, to play, and so forth. The use of Information Technology in these spaces today is much more common than it used to be ten years ago. This result points towards the importance of more research on the pervasive influence of IT on the quality of urban experience in the context of Brazil.

Talking followed by people watching were the most frequent social activities in all case studies in 2006 and 2016 (see Table 1). This result contrasts with the lack of active social interaction verified in public spaces in Europe and United States: "To see and to be seen is the simplest and by far the most widespread form of meeting between people. Compared with the number of seeing and hearing contacts, the more active and direct meetings make up a smaller but versatile group" (GEHL, 2010, p.148).

Whyte (1980) concluded from his studies on the social use of urban open spaces in United States that the best-used urban open spaces are those with about 45% of people in groups. The group activities observed in situ, talking and dating, accounted for 55,83%, 49,40% and 48,04% of all optional social stationary activities recorded in LSq, RSSq and ESq, respectively (see Table 1). Cultural factors, among others, may explain these patterns verified in LSq, RSSq and ESq.

Table 1: Group and single optional stationary social activities

	Case studies											
	Liberdade Square				Raul Soares Square				Estação Square			
	2006		2016		2006		2016		2006		2016	
	No	%	No	%	No	%	No	%	No	%	No	%
Talking	216	46,56	105	42,34	52	38,23	34	43,04	59	46,09	27	36,03
Dating	54	11,64	22	8,87	12	8,82	4	5,06	6	4,69	4	5,3
Watching	113	24,35	40	16,13	45	33,09	21	26,58	39	30,47	23	30,67
Reading / Writting	29	6,25	11	4,43	10	7,35	1	1,27	4	3,12	1	1,33
Sleeping / Relaxing	15	3,23	6	2,42	10	7,35	11	13,92	3	2,34	8	10,67
Using IT	19	4,09	52	20,97	5	3,68	8	10,13	3	2,34	7	9,33
Others	18	3,88	12	4,84	2	1,47	0	0	14	10,94	5	6,67
TOTAL	464	100	248	100	136	100	79	100	128	100	75	100

Source: fieldworks 2006, 2016.

PATHS + NODES + THRESHOLDS

Paths, nodes and thresholds are types of spaces whose social potential has been acknowledged in different studies (AELBRECHT, 2016; STEVENS, 2006). The evidence collected during the unstructured observation shows that these spaces tend to function as stages where a mass of unknown people can be seen carrying out all sorts of activities, including walking, playing, expressing themselves, talking, singing, acting, exercising, and so forth. Well-used nodes, paths and thresholds set the scene to people-watching and to initiate a conversation with a stranger. Previous empirical study found that opportunities to socialize is attractive: people draws other people (WHYTE, 1980).

PROPS + EDGES

Previous empirical studies in different types of spaces in Europe and United States verified that people are likely to prefer spending time at short distances from props, edges or configurations that combine some of these elements (AELBRECHT, 2016; GEHL, 2001; MEHTA, 2009). The findings validated the importance of these basic and hybrid urban design elements in retaining people in LSq, RSSq and ESq. It found that the large majority of stationary users carrying out optional social activities in all case study sites in 2006 and 2016 were at a distance within 1m from them (see Table 3).

Table 3: Sitters up to 1m from props, edges or hybrid urban design elements

	Case studies											
	Liberdade Square				Raul Soares Square				Estação Square			
	2006		2016		2006		2016		2006		2016	
	No	%	No	%	No	%	No	%	No	%	No	%
Yes	382	82,33	207	83,47	100	73,53	56	70,89	106	82,81	66	88
No	82	17,67	41	16,53	36	26,47	23	29,11	22	17,19	9	12
TOTAL	464	100	248	100	136	100	79	100	128	100	75	100

Source: fieldworks 2006, 2016.

The support and edge effects as well as the prospect-refuge theory explain people's preference for spending time at props and edges. The former phenomenon refers to the people´s preference for spending time at a fixed (or semi-fixed) element that provides physical support and the latter, theorized by De Jonge in 1967, to human preference for sitting or standing in spatial conditions that offer concealment as well as good views of the space (edges) (GEHL, 2010).

The prospect-refuge theory (APPLETON, 1996), which postulates that whenever a spatial condition affords wide views into adjacent spaces (prospect) and discretion (refuge), it tends to be preferred, overlaps the edge effect notion. Individuals are inclined to choose zones that make their survival more likely. In 2006, optional stationary social activities were reported to occur along the main façade of the MAO in Estação Square. People can sit along this hybrid configuration, which combines props with edges and offers opportunities to spend time under shade, set their backs against it, control their level of exposure and monitor what is going on in space (Figure 5).

The chain placed in front of the main façade of the MAO in 2016 explains why people were observed spending time in this hybrid element only in 2006 and is a trace of the popularity of edges combined with props in sustaining optional stationary social activities in urban open spaces. This event also illustrates the importance of management in facilitating or inhibiting certain behaviours in urban open spaces.

Figure 5: Sitting spaces in the main façade of the MAO in Estação Square.

PROPS + THRESHOLDS

According to previous research, props combined with thresholds as well as thresholds in themselves tend to retain social optional activities (AELBRECHT, 2016; MEHTA, 2009; STEVENS, 2006). If it is accepted that threshold is a type of spaces "[…] where strangers are gathered by necessity when moving through them and are forced into close proximity" (AELBRECHT, 2016, p.8), the pedestrian crossings to the case study sites can be classified as such because these elements join vehicular and pedestrian domains. These thresholds did not support any kind of optional stationary social activity during the fieldwork activities.

This finding, however, does not contradict the results of previous research that verified the social potential of this element, but does confirm the importance of good environmental conditions to support optional stationary activities (GEHL, 2010). This pattern suggests that intrusive sensory information from motorized vehicles as well as risk of been run over by a car tend to repel people (GEHL, 2010). The stationary optional social activities observed under shade in the niches that characterise the main entrance of the MAO during the structured observations carried out in 2006 and 2016 confirmed the influence of thresholds combined with props as well as protection from unfavourable weather conditions to support social life.

PROPS + LANDMARKS

The conception of design solutions that support social clustering may facilitate active interactions because conversations usually take place from one up to three metres (GEHL, 2001; LYNCH, 1971). The term cluster(s), for the purposes of this study, will refer to optional sitting activities at a distance up to 3 m from another. Since the benches in the case study sites can accommodate up to five people, the expression large cluster(s) will include grouping(s) of at least six sitters carrying out optional social activities.

In 2016, differently from 2006, small clusters of people in circles emerged on the grassed areas that feature LSq and RSSq. During the structured observations carried out in 2006, guards secured no one would use these landscaped areas in these urban squares to perform any type of social activity. Local authorities considered sitting, lying, playing and so forth on the grass a misuse of urban open spaces. This event illustrates the strong influence of management in the use of urban open spaces by people.

The evidence shows that six (or more) sitters carrying out optional social activities is not an ordinary social phenomenon in any of the case studies, at least during the lunch break. Observers recorded two and seven large clusters in ESq and LSq, respectively. RSSq did not accommodate any large grouping of people neither in 2006 nor in 2016. For now, it is important to say that it is the only case study that is not featured by an urban design element that combines landmarks and props. The two large clusters recorded in ESq were observed in the steps incorporated at the pedestal of the Monumento à Terra Mineira (Monument to Mineira Land), which combines properties present in landmarks and props. (see Figures 4 and 6).

Figure 6: Clusters of sitters in Estação Square (2006).

The elements of urban design that anchored large clusters in LSq were the kerb that features the edge of the central alameda of palm trees, the steps incorporated at the pedestal of Crispim Jacques Bias Fortes' bust and the bandstand (see Figure 4 and 7). All spatial configurations that anchored groupings of people in ESq and LSq combine different basic urban design elements.

Figure 7: Clusters of sitters on the bandstand in Liberdade Square (2016).

The central alameda of Liberdade Square functions combines props and edges. The bandstand and the Monumento à Terra Mineira, the urban design elements that supported large clusters more often, as well as steps incorporated at the pedestal of Crispim Jacques Bias Fortes' bust combine props and landmarks. These hybrid design solutions provide practical support for sitting and function as highly visible unique axial points that aid to navigation.

The central alameda of palm tree, the bust of Crispim Jacques Bias Fortes, the bandstand and the Monumento à Terra Mineira offer enough linear sitting space to a large number of people to sit. The linear shape tends to accommodate reasonably well users who wish to sit alone, but near other people because they allow to spend time close, but not within eye contact of strangers (BENTLEY et al., 1985; COOPER-MARCUS, FRANCIS & RUSSEL, 1989). These elements too often, however, supported clusters of young people possible because some social groups, such as elderly, may not perceive them as comfortable to sit.

The elements that anchored more frequently large clusters of people carrying out optional stationary social activities, the bandstand and the steps incorporated in the Monumento à Terra Mineira, differently from the other hybrid elements, offer a mix of linear, right angle and concave secondary sitting spaces. The linear form, as already discussed, affords unattached sitters to sit close strangers while experiencing a sense of privacy by looking out in various directions (BENTLEY et al., 1985; COOPER MARCUS, FRANCIS & RUSSEL, 1989).

The concave and right angle shapes, by contrast, allows a face-to-face orientation, facilitating conversations and other group activities (BENTLEY et al., 1985; MARCUS, FRANCIS & RUSSEL, 1989). Sitting spaces featured by a mix of shapes, therefore, offer opportunities to single users as well as people in groups to arrange themselves in various ways (BENTLEY et al., 1985; MARCUS, FRANCIS & RUSSEL, 1989). The data collected, however, does not allow any conclusion to be drawn with regard to the degree of intimacy between the members of the clusters observed in situ.

PROTECTION, COMFORT AND DELIGHT

Results repeatedly confirmed that configurations likely to afford protection against intrusive sensory information, accidents, crime and violence as well as a sense of comfort and

delight tend to attract and retain people (GEHL, 2010). The largest clusters of optional social stationary activities, for example, emerged in the bandstand and the Monumento à Terra Mineira, both focal points of well-used spaces, away from heavy vehicular traffic and partially under shade.

It means that people prefer spend time in reasonable comfortable sitting spaces away from distracting and unpleasing sensory information and where they feel protected from been run over by a motorized vehicle. The bandstand and the Monumento à Terra Mineira, as highly visible elements in well-used spaces, afford reasonable viewing distances. The opportunity to see and to be seen provided by these elements may trigger a sense of security against crime and violence. The findings, therefore, confirmed that people are likely to spend time in configurations that afford a sense of protection.

The sonorous water fountains next to these hybrid elements offer the opportunity to experience multisensory delights as well as the extra advantage of masking traffic noises (YANG & KANG, 2005). The opportunities to enjoy favourable weather conditions and nice views are also likely to elicit delightful experiences. The evidence confirmed that the design of urban design elements as well as their relationships (or urban design qualities) influence social life in urban open spaces in the context of central areas of large Brazilian cities.

DISCUSSION

The findings verified that elements of urban design are likely to support optional social stationary activities in urban open spaces if they offer opportunities to fulfil the common needs for protection, comfort and delight. Hybrid elements fuse properties present in the basic elements of urban design, paths, nodes, thresholds, props, edges and landmarks. The concept of “affordance”, coined by Gibson (1979), helps to understand why hybrid elements of urban design are likely to support a range of optional stationary social activities performed by different people.

Affordances “are what [the environment] offers the animal, what it provides or furnishes, either for good or ill” (GIBSON, 1979, p. 127). These perceptible environmental properties have functional significance for an individual: they indicate what one can do. As invariants properties, affordances are always there, independently of been automatically perceived by a certain individual in a specific situation (or not). The perceiving of affordances is dependent on the needs, wants, preferences, motivations and physiological capacities of the perceiver. Hence, the combination of basic elements of urban design may generate configurations that encapsulate a large number of affordances for different individuals.

Environments that can be used for a range of purposes by different people at different times have “robustness”, a key urban design quality in generating environments that “[…] provide its users with an essentially democratic setting, enriching their opportunities by maximising the degree of choice available to them” (BENTLEY et al., 1985, p.9). It follows that hybridisation, as a design strategy, tends to increase the number of affordances present in a configuration and, therefore, its degree of robustness.

From a different theoretical perspective, basic elements of urban design, such as a bench in an urban open space, may act as “mnemonics”, reminding people of the behaviour expected. These elements encode in themselves information that people decode (LYNCH, 1971; RAPOPORT, 1982, 2005). The stable cues and meanings encoded in an environment of any particular culture are likely to elicit more automatic, consistent and uniform behavioural responses.

On the other hand, individuals and groups often consciously reject meanings that they fully understand and add new ones. Individuals, therefore, are not passive decoders, but they also add meanings to the environments in ways that may challenge the status quo (Stevens 2006). “Creative users” give new meanings to existing configurations by revealing their deeply hidden affordances (Stevens 2006). Nevertheless, the indeterminacy intrinsic in hybrid design solutions may expand the range of interpretations and encourage unexpected and creative engagements with environments, enhancing their liveness and facilitating triangulation.

As already pointed, findings repeatedly showed that basic and hybrid elements of urban design, the latter an under-theorized favourable configuration for liveliness, tend to support a range of optional stationary social activities if they offer opportunities to fulfil the most common needs. However, the evidence also indicates that those hybrid elements of urban design that encapsulates properties of landmarks and props, if properly designed, play a key role in supporting social clustering. Prospect and refuge theory, therefore, does not explain people’s preference for clustering in highly visible locations.

The relevance of landmarks in facilitating social stationary activities in urban open spaces is not well established. According to Stevens (2006, p.812), for example, props and landmarks have different purposes: “Props provide affordance for and inspire distinctive forms of movement, whereas landmarks merely orient movement”. Lynch (1960), however, recognises that some configurations may function as both props and landmarks, such as certain doorknobs and trees.

Landmarks, as noticeable axial points, are likely to (i) trigger a sense of “hereness” (CULLEN, 1961), helping people to feel micro located, and (ii) be easily found by others. Cullen (1961) argues that since our sense of position unleash emotional reactions, urban designers should exploit it. The results suggested that the design of elements of urban design as well as their relationships and responsiveness to common user needs may create the necessary conditions to attract and retain people, a prerequisite for active forms of social interactions.

CONCLUSIONS

This research assumes that co-presence is a prerequisite to active forms of social interactions that, eventually, may contribute to social interaction. It is important to state, however, that there is a lack of empirical research on how social interaction can foster social interaction. The preference for carrying out optional social activities in configurations likely to trigger a sense of protection, comfort and delight emerged as across-cultural pattern.

It confirmed that the achievement of socially responsive configurations are also highly fundamental in dense urban areas associated with a variety of environmental, managerial and social issues. The results demonstrated that while intrusive sensory information function as a kind of social repellent, pleasant multisensory experiences can anchor social activities and mask contextual conditions likely to inhibit social interaction.

It confirmed the relevance of props, edges, paths, nodes and thresholds, basic elements of urban design, and robustness, a well-known urban design quality, to support social life in urban open spaces. This study expands theory by (i) identifying hybridization, as a design strategy, likely to increase the affordances of socially responsive spatial configurations while enhancing their robustness and attractiveness, and (ii) demonstrating the potential of design solutions that encapsulates the properties of landmarks and props to anchor social clusters.

Multisensory and socially responsive approaches to urban design holds the promise of guiding best practice towards the generation of attractive small scale urban open spaces and attenuation of contextual conditions likely to inhibit social life. The findings of this research also have implications for policy as it suggests that piecemeal small-scale urban transformations may eventually enhance the quality of urban life while fostering social cohesion.

The adoption of a multiple case study design in this longitudinal empirical investigation enhanced the robustness of the results, although it required extensive resources and time. Even though many findings are significant, they should be interpreted with caution since generalizations are made on the basis of how three central urban square located in the central area of one large Brazilian city are used during weekdays from 12.00 until 14.00.

The incorporation of a larger number of central urban squares located in different densely populated areas and the consideration of all their life cycle over a twelve-month period would have been advantageous. These research limitations in themselves, however, present opportunities to further research. It is highly useful to expand the present research in order to investigate different social groups' preferences and perspectives when carrying out optional social activities in urban open spaces in Brazil and other countries in global south.

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