Introducing body-language methods into urban design to research the social and interactional potential of public space

Abstract

Since the 1960s the urban design discipline has experienced a remarkable turn towards the psychological, social and cultural dimensions of place. This is visible in its expanded body of knowledge to include a wide range of social science disciplines and in its investment in qualitative and cross-disciplinary methodologies in public space research to understand the different user's needs and experiences. Comparatively, little research has been done on the social and interactional potential of public spaces. To fill this knowledge gap, this paper employs original empirical material from one case study with a view to focus on the bodily socio-spatial mechanics of social interactions among strangers in public space and to examine the potential applicability of body-language methods to study them.

Introduction

Since the 1960s, the discipline of urban design has been brought closer to the field of scholarship of social sciences disciplines to explore the psychological, social and cultural dimensions of place (Chermayeff and Alexander, 1963, Norberg-Schulz, 1971, Alexander et al., 1977, Levitas, 1978, Francis, 1987, Carmona, 2003). As a response to the failures of modernist architecture and planning to recognize the damaging consequences of spatial order on the social life of the places designed, a whole generation of social scientists and designers began to give a central role to the user's relationship to place. In doing so, between the 1960s and 1980s they developed new theories and methods for understanding and assessing people's perceptions, experiences and uses with a view to informing architecture, planning and urban design theory and practice. These methodological and theoretical advances were instrumental in establishing a new emergent field of environmental-behavioural studies dedicated to the understanding of the relationship between people and the built environment (Rapoport, 1977, Carmona, 2003).

One of the themes frequently evoked within this field and to become a central concern of designers was the public realm. Since the 1980s there has been a great interest to understand the cultural, ethnic, gender and age groups differences in use and behaviour in public spaces. A variety of methods were developed to research cultural variations in terms of personal spaces, needs and expectations upon public spaces (Loukaitou-Sideris, 1995, Low et al.,

2009). More robust methods were also created to gain access to children's unique experiences and engagement with public spatial settings (Hart, 2002, Loukaitou-sideris, 2003, Loukaitou-Sideris and Sideris, 2009). New models and methodological approaches were proposed for interrogating experience of marginalised groups such as women, the poor and people of colour until then rarely investigated (Mozingo, 1989, Day, 1999, Day, 2000).
Thanks to all these works we were able to gain a solid knowledge about the different user's needs and preferences and key spatial and design characteristics that support their uses and behaviours in a variety of types of public spaces and cultural contexts.

Comparatively little empirical research has been done to study the social and interactional potential of public spaces. Very few studies have focused on informal social interactions among different user groups, particularly among fellow strangers, and on their bodily experiences. This is not to say that there are no exceptions. The works of Loukaitou-sideris (2003) on intergroup relations among racial and ethnically diverse children in various public settings and of Low et al. (2009) on interactions among culturally diverse groups in parks are a good case in point. However they have not studied individual interactions among fellow strangers per se –they focused on group interactions instead– nor have they specifically focused on their bodily and physical interactions.

The study of informal social interactions among fellow strangers has been always a neglected area of study. This neglect is partly explained by the conventional wisdom that their relations are 'asocial' and therefore irrelevant and uninteresting (Lofland 1998, p. 3). However, sociologists have long recognised that interactions among strangers constitute the dominant type of human social relations and have profound implications on the way public life is lived and managed (Lofland, 1998, Goffman, 1963). They have also special qualities that make them both advantageous and challenging objects of study. The fact that their relations have no history and are by nature 'unplanned' and 'risky' makes them highly dependent on the rules of behaviour, types of users, and the comfort of the places where they occur, offering thus good criteria to evaluate the spatial qualities that support social use (Karp 1991, pp. 83-84). The fact that their relations involve more bodily than verbal communication, they allow us to understand how a space works in bodily and mechanical terms (Goffman, 1990) but also pose several methodological challenges.

The role of the body in framing experience, use and behaviour is still an overlooked element in existing public space research and urban studies more broadly, despite the growing recognition of its importance as the centre of lived experience and agency (Low 2014, p. 36).

Although a series of methodological advances have been made in a range of behavioural sciences, we continue to lack robust methods that can simultaneously analyse interactions between bodies and between bodies and space (Butler and Bowlby, 1997, Macpherson, 2009, Degen et al., 2010, Low, 2014). Most studies focus on how people's bodily experiences are affected by the built or natural environments using new types of ethnographic methods such as 'go-alongs', which constitute an hybrid between observation and interviewing methods (Macpherson, 2009, p. 1043; Degen et al., 2010, pp. 1915-1917). These methods are considered effective allowing close observation and engagement with the participant's body experiences and actions and their immediate translation into verbal descriptions. However, they are not productive to objectively study the material space of the locations where interactions occur. They are highly dependent on the interviewees input.

On the other hand, we have a range of other studies from the fields of kinesics[1] and proxemics[2] that have studied the interface between people and people and the environment with a primary focus on body language (Hall, 1969, Fast, 1971, Scheflen, 1972). The recognition of the potential applicability of such body-language methods in public space research has been slow. Despite growing research evidence that such methods allow us to concentrate attention on the complex micro-social and spatial mechanics between people's bodies and space (Whyte 1980, pp. 16-17,54; Stevens 2007, p. 821), urban designers have not yet fully engaged with them (Simões Aelbrecht, 2016).[3] This is partly explained by the fact that they are still crude and nascent and have rarely been used to analyze the spatial settings of the behaviours studied (Harrigan et al., 2005). However their potential to combine spatial and behaviour analysis indicates they may be able to fill the existing methodological gap. But for that more research is needed to further refine them.

What it is also striking in this whole process is that despite the noticeable lack of studies on informal social interaction in the public realm, they have become very timely. Several studies have pointed to a serious decline of informal social connectivity in all segments of society, and have persistently related it to the shrinkage, privatization and alienation of the design of the public realm (Sorkin, 1992, Putnam, 2000). New designed public and semi-public spaces are frequently blamed –often with little empirical evidence– for being not only bland and placeless but also socially alienating and highly exclusionary, due to their excessive reliance on privatization, control or themed designs. Some have nevertheless become really popular social spaces (Sorkin, 1992). Thus, if we want to make justice to those spaces, we need to answer the following questions: how conducive are those newly designed public spaces for social interaction? How, where and under what conditions does social interaction among

strangers occur? What role does urban design play in creating or eliminating opportunities for such type of social interactions?

The identified knowledge gaps call for more focused research on informal social interaction in newly designed public spaces and to place both the urban design and the body of the users at the centre of the analysis. This requires, as we have seen, more robust methods of spatial analysis from a behavioural perspective to achieve such research aims. This paper wants to respond to these calls. To do so, by employing original empirical material from one newly designed masterplanned neighbourhood as a case study, it focuses on the bodily socio-spatial mechanics of social interactions among strangers in its public spaces and examines the potential of body-language methods to study them.

To undertake this research, this paper is structured into four parts. The first part reviews existing literature on the sociality and spatiality of the public realm, to understand the optimal locations, and socio-spatial and behavioural conditions for informal social interactions among strangers to occur in public space. The second examines the key components of body-language of stranger's interactions and the methodological considerations that need to be taken to study them. The third employs original empirical material from one case study to test and examine the applicability of body-language methods to achieve the research aims. Finally, it concludes with the theoretical and methodological contributions of this study for public space research.

1. The sociality and spatiality of the public realm

The field of public realm studies is still largely under-theorized. Until the 60s, it was still considered irrelevant and uninteresting (Lofland, 1998, Lofland and Lofland, 1976, Karp, 1991, Cavan, 1966). The conventional wisdom of social sciences was, and often still is, that the public realm is asocial. The essential argument is that people when strangers to each other do not interact and, if they do, it is no more than a transitory and ephemeral exchange of words because of distrust and fear. These views were challenged in the late 1950s by a group of authors, including Gregory Stone (1954), Jane Jacobs (1961), Ervin Goffman (1963), William Whyte (1980) and Jan Gehl (1971). They were not all concerned with the public realm per se, however they recognized the public realm's significance and demonstrated that everyday encounters between strangers demand a "high degree of cooperation" (Karp, 1991, p. 79).
Among these authors, Goffman, Whyte and Gehl were the first to lay the ideological and methodological cornerstone of public realm studies. However, because of their ontological

differences, their research foci diverged substantially. Goffman studied such interactions from a social perspective with a focus on what he called the 'interaction order'[4] (Goffman, 1983). Whyte and Gehl, on the other hand, focused on the spatial perspective. Both observed the use of public spaces in relation to their urban design features.

Thanks to cross-disciplinary efforts particularly on the part of urban designers, the field would become solidly established in the 80s in the urban design discipline (Gehl and Svarre, 2013). However, the character of this field would remain interdisciplinary and focused on the relationship between public life and design, rather than on design itself.

Strangers and their social interactions

Table 1. List of most frequent social encounters between strangers. Source: the author, 2013.

Table 2. Constituents of social interactions among strangers. Source: the author, 2013.

The subject of interactions among 'unknown' strangers[5] has been always at the heart of any public realm study (Lofland 1998, p. 12). After all their relations are not only the most dominant types of human relations but also are sociologically more interesting. Unlike the other types of stranger, such as 'categorical strangers'[6] and 'familiar strangers'[7] (Lofland 1998, pp. 12,22,86), they have special qualities that make them both advantageous and challenging objects of study (table 1).

First, their interactions can take many forms (table 2). The most common are passive consisting mainly of visual acknowledgements. However they have the potential to become active, involving verbal exchanges. The most frequent are the type of 'fleeting', 'chance' and 'routinized' encounters,[8] which are brief, but they can also evolve into something more long-lasting such as 'quasi-primary' and 'intimate-secondary' relations[9] (Lofland 1998: 55-59).

Second, because their relations often involve great risk, particularly when they happen by 'chance' (Sennett 1973, pp. 130-51; Stevens 2007, p. 165).[10] They allow us to study a broader conception of urban experience, which encompasses relational, unfamiliar and unplanned environment-people relations (Sennett, 1973).

Third, because their relations are highly dependent on the rules of behaviour, types of users, and the comfort of the places where they occur, they offer us good criteria to evaluate the spatial qualities that support social use (Karp 1991, pp. 83-84).

Fourth, because their relations to be carried out successfully must comply with the established so-called 'public order', the level of involvement is often minimal (Goffman 1963, p. 87).[11] However, there are certain social conditions that can suspend such norms and can make

people more approachable (Lofland, 1998). These include: the presence of 'open persons'[12] (Goffman 1963, p. 129), existence of 'open regions'[13] (Goffman 1963, p. 132), 'triangulation'[14] (Whyte 1980, p. 125), availability of 'time-out'[15] and occurrence of extraordinary events (Goffman 1963, p. 135, Cavan, 1966, p. 11).[16]

Fifth, because their relations depend less on verbal than bodily communication, they allow us to understand how a space works in bodily and mechanical terms (Goffman, 1990). Hence this requires us to use methods with which we can analyse body-language. The most appropriate methods to study them are as discussed above, the body-language methods from the fields of proxemics and kinesics (Hall, 1969, Fast, 1971, Scheflen, 1972). Although these methods are productive for reading behaviours, they lack the tools to analyze their spatial clues, asking us therefore to further refine them, if we want to apply them into urban design.

Optimal locations and spatial conditions for stranger's interactions

It is often assumed that strangers are more likely to meet and interact in settings with which they are familiar than in anonymous places like street corners (Karp 1991, p. 101). However, the opposite can also be true. Whyte (1980, pp. 55,55) observed that street corners are the best spaces for social interaction, precisely because of their unpredictability.

However there is a consensus that the most favourable public settings are those where public sociability rules. This is the case of 'open regions' and many other settings, including 'mixed locales'[17] (Lofland 1998, pp. 13-14), 'third places'[18] (Oldenburg, [1989] 1997), 'liminal spaces'[19] (Zukin 1991, pp. 28,38-41,50-51) and 'loose spaces'[20] (Franck and Stevens, 2007) which, despite their differences, have common social characteristics: a radical departure from the routines of home and work and suspension of norms of behaviour, publicness, inclusiveness, and social comfort. These are all qualities that can attract and welcome a wide spectrum of users, though their character is usually defined by a regular and homogeneous crowd (Zukin, 1991, Oldenburg, [1989] 1997, Laurier and Philo, 2005). Associated with these qualities are often certain spatial features, such as: low profile, small-scale, accessibility, diminished visibility (e.g. bars) which facilitates informal uses (Oldenburg, [1989] 1997, pp. 20-42) high visibility (e.g. cafés) which welcomes particular users such as women and children (Laurier and Philo 2005, p. 14), spatial distinctiveness (e.g. function, form and uses) (Oldenburg, [1989] 1997, pp. 20-42).

2. The body-language of stranger's interactions

The interpretation of social interactions among strangers has been the primary interest of the field of non-verbal communication studies, particularly in studies of proxemics and kinesics

(Harrigan et al., 2005). This is a field still in its infancy, with a very fragmented body of knowledge, and a lack of rigorously defined behavioural variables and comparable methods (idem 2005). Nevertheless, it offers us the relevant information for operationalizing social interactions in relation to considered key degrees of involvement –social distances, orientation and 'tie-signs'–, cultural differences and relationships with the spatial setting where they occur.

Social distances

When people come together in space and time, they frame a physical territory with their bodies, also called 'social distance', immediately communicating their type of social relation, ethnicity and level of intimacy (Schefflen, 1972, pp. 13-15). According to Edward T. Hall's study of human personal space in western culture, there are four distinct social distances in which most people operate: 'intimate', 'personal', 'social' and 'public' (Hall, 1969, pp. 158-180). Each of these distances is determined by different needs in a social interaction and by socio-cultural and sensorial expectations.

'Intimate social distances' are recognizable because they involve less than 0.5 m of separation (idem 1969, p. 179). These are used by lovers, very close friends –among women in particular, or when having a private conversation. However, this distance is generally not accepted for strangers except in crowded situations, such as in public transport or an elevator (Fast, 1971, p. 32, 42, 48).

The second scale is the 'personal distance' between 0.5 and 1.2 m (Hall 1969, p. 121). This distance is common for casual interpersonal conversation in public settings in western cultures. People in public are comfortable sitting next to strangers at a distance of at least 0.8 m (Whyte, 1980, pp. 28, 34, 44). They will not sit closer, even if the desire to sit is great.

The 'social distance' between 1.2 to 3.6 m is the third scale of distance (Hall 1969, p. 121). This is the most comfortable distance for engaging with strangers in most northern European cultures. Because there is no possibility for physical contact, people can engage and disengage at will. The maximum distance to have a conversation is 2.4 to 3 m distance –more than that people will have to raise their voices, making it audible to others present (Cavan, 1966, p. 90).

Finally, there is the 'public distance', above 3.6 m, which is considered the farthest extension of our territorial bondage (Hall 1969, p. 179). At this distance, people are allowed to stare at strangers but are not comfortable for a two-way conversation. Visibility starts to fade and details are lost at distances greater than 4.9 m, while hearing is only efficient at a maximum of 6.1 m. Eye contact is a precondition for a conversation in most European cultures.

Orientation

Body orientation can give a lot of information about people's degree of engagement in a social interaction (Scheffen 1972, p. 30). Schefflen identified three main types of body posture. 'Vis-à-vis positions' are usually used in face-to-face interactions. 'Parallel positions' usually communicate no relation. They are typical for individuals walking in the street, or sitting next to each other on a bench in public space or transport. '60 or 90 degree positions' are common for large interpersonal distances. They communicate closeness and openness to engage with third parties. These are common positions not only among friends, but also strangers when engaged in a conversation that does nor require any privacy or secrecy.

'Tie-signs'

'Tie-signs' provide information about the type of involvement in an interaction (Schefflen, 1972, p. 124). They confirm the type of affiliation or cooperation. 'Greeting behaviours' are the most informative signs (Idem 1972, pp. 32–33, 37–39). They are the visible markers of the beginning and end of an interaction. Another 'tie-sign' is when people form interactional units such as 'withs' –of two people when their bodies are close, turned to each other, or walking together– and groups –also 'withs' but involve a larger number of people (Idem 1972, pp. 32–33, 37–39)..[21]

The spatiality of body language

Several attempts have been made to identify the spatial conditions that may affect use and behaviour. A tendency to focus on the amount of space available to people is noticeable, as this is the most important factor in determining comfort (Ross et al., 1973). But there are other elements that may be equally important, such as physical barriers and objects that may be used to frame different levels of territoriality in interpersonal relations (Altman and Vinsel, 1977). However, analyzing these features has not been so straightforward. The lines defining them often overlap with other social and cultural factors, such as the level of acquaintance in a relation (Harrigan et al., 2005). Only Sommer has analyzed with greater precision the effect of spatial markers that frame personal space in a public setting, though he emphasized more the protective than interactive aspects (Sommer, 1969). But, in general, a lack of precision or interest is evident among behavioural scientists in analyzing how the spatial features of a place determine a social interaction (Harrigan, 2005).

Methodological considerations

Body-language theories and methods offer us useful knowledge for analyzing the socio-behavioural cues of an interaction. However, they lack the necessary rigour to achieve reliable results and the tools to examine the spatial setting where the interaction occurs (Harrigan 2005, p. 142). Therefore, if we want to apply them to urban design, further refinement and a closer integration of the two bodies of knowledge of behavioural sciences and urban design are required. To achieve this, behavioural scientists have suggested making these methods more rigorous and methodical and reasserting the spatiality of social interactions (Scherer and Ekman, 2005). This is not at all an easy task. After all, they have different research interests, and conceptual and methodological preferences. However, there are clear benefits in integrating them. Because their focuses are complementary rather than contradictory, combined they can create a more robust method to study the sociality and spatiality of the public realm, as this paper will demonstrate. To do so, it proposes to start with a site analysis to contextualize the urban context, following an urban design approach (Carmona 2003, pp. 243-244).

When it comes to the actual data collection, it adopts the behavioural sciences' approach of sampling behaviour (Scherer and Ekman, 2005). Rather than observing every single interaction, it samples situations of interactions, which are representative of the best conditions considered in the literature. This requires the combination of unobtrusive video cameras, to enable the re-examination of behaviour,[22] with direct observations to help with sampling behaviour while taking field notes (Hall, 1974).

Regarding the actual data analysis, there is a far more complex range of technical and analytical issues to consider. Following the behavioural scientists' recommendations, this study uses a frame advance command that can enable immediate sampling, extracting and coding behaviours of film stills (Cohn et al., 2000).

The selection of analytical approach is the stage that raises more disciplinary differences. To avoid them, this study proposes applying a content analysis, a well-known method of analyzing images that does not rely on existing knowledge (table 4) (Rose, 2016). Likewise, this only requires a selection of a set of coding categories that is clearly descriptive and representative of the most important spatial, social or behavioural cues of an interaction.

The literature review above revealed the behavioural and spatial cues that can be more objectively coded because they are readily recognized and considered invariant in most European cultural contexts. After coding the sampled interactions, a quantitative and qualitative account and analysis of their content follows.

The refined body-language methods promise to be a robust method of spatial analysis from a behavioural perspective. But before considering them valid, we need to empirically test them with a case study. This is the next task.

Table 3. Methodology for studying the mechanics between people and space in a social interaction. Source: the author, 2013.

Table 4. Analytical framework of the socio-behavioural and spatial context framing a social interaction. Source: the author, 2013.

3. Empirical research

This section employs original empirical material from one case study, the Park of the Nations (PN) in Lisbon, a new masterplanned neighbourhood built for the World Expo '98 in a former eastern harbour and industrial area (Figure 1).

Preliminary analysis of its socio-cultural and spatial context revealed that this is a productive case to problematize some of the critiques against the perceived failures of contemporary newly designed public and semi-public spaces to provide common grounds for informal social interaction.
At first analysis the PN seems to provide us an exemplar urban regeneration practice. It was conceived with a double plan to organize a mega-event with an end-goal to become a thriving neighbourhood, following the values of vibrant city neighbourhoods with a mixed-use centre, a variety of public spaces and amenities along its 5km of riverfront and two predominantly residential areas (Machado, 2006).[23] A good measure of its success is that in only ten years it already attracted a total of 20,000 inhabitants and during weekdays a floating population of workers reaching 50,000, and weekly usually attracting over 250,000 of visitors.

Despite these successes in terms of numbers, the PN's masterplan has been also largely subject to criticism (Fernandes, 2005). As attested by the mass media, the public reception of the plan has not been always favourable (Mega Ferreira, 2008, Lusa, 2013, Lopes, 2018). Many academics, professionals and the general public criticize its economic emphasis, which not only resulted in the creation of housing for the affluent and highly educated but also attracted a very socially and culturally homogeneous community of young Portuguese professionals, though with a surprisingly higher number of females, than other districts in Lisbon (Moreno and al, 2015).[24] Overall these demographics are in stark contrast to the immediately adjacent working class communities.

The PN has been also target of a number of urban design and management critiques and their negative impacts to the public realm (Fernandes, 2005, Graca Dias, 2007). Many of these

critiques are not new, they have been debated since the 60s in the planning and urban design literature on large-scale and clean sweeping masterplanning approaches, privatisation and control and theme park new designed public spaces but some also reflect the specificities of its own context (Jacobs, 1961, Machado, 2006, Carrière and Demazière, 2002, Sorkin, 1992). As attested by our fieldwork interviews, the following six urban design critiques are worth some scrutiny (Anonymous Interviewees, Personal Communication, 2010 and 2012).

The first is towards the PN's large-scale i.e. its long, wide and spacious public spaces. As some visitors expressed it has a "scale appropriate for a Word Expo, but not for a city". "Distances are very long, making the whole experience of walking very tiring". The second is towards its heavy control, which is visible in its "24h security" and wide range of hard and soft control mechanisms: from policing by car, horse and bike and private security and management patrols to more subtle but manipulative design mechanisms that encourage people to walk and use certain spaces more than others. The third is to the "very artificial, clean, rational, perfect and new look of the public spaces, and their predictability, anonymity and blandness". The fourth is the design emphasis on movement. Many spaces are '"very open and unsheltered", inducing "people to walk rather than inviting longer stays".

The fifth is to the "very ordered and sectorised plan", despite the original intention to making it a mixed-use neighbourhood. [25] All major uses including retail and services have been concentrated along the public axis, the major residential parts have been placed at the north and south areas, and all the cultural and leisure activities have been located at the riverfront, making it a recreational axis. Finally, many criticize the strong thematic design continuity of a World Expo resulting in "a permanent expo exhibition" of public spaces, architectural styles and public art[26], instead of a real neighbourhood.

However, these critiques are not always fair when we get to know that most of its public spaces are very much appreciated by a wide range of users, particularly by the PN's residents and workers (Moreno and al, 2015). According to the editor of the PN's newspaper (Menezes, Personal Communication, 2010), "people from outside, particularly from Lisbon's city centre have more preconceptions towards the PN, they think that it is too new and impersonal, they like more the traditional city. In my view, we should not dismiss that many people like this place". This observation is very much in tune with more recent literature, which offers a more nuanced perspective and takes the stance that we also have to take into account the positive sides of this debate (Cybriwsky, 1999, Talen, 2002).

These contrasting views force us to further examine the PN's public spaces. The PN seems to be indeed good case study not only to test both those critiques and counter-critiques but also, and more importantly, to answer the questions set at the beginning: how conducive are the

PN's large-scale, controlled and thematic newly designed public spaces to social interactions? And if so, how, where and under what conditions does social interaction among strangers occur? And what role does urban design play in creating or eliminating opportunities for such interactions?

In order to answer these questions, fieldwork aimed to collect a large and optimal opportunity sample of instances of informal social interactions in public space, as defined against an extensive list of favourable locations and socio-behavioural and temporal conditions derived from the literature review (Table 3).

To accomplish this aim, this study was undertaken during 8 months spanning across two years from December 2008 to December 2010 and revisited in 2012 and 2014 with a view to include a large number of favourable times for observation (Table 3). Fieldwork was undertaken by one single researcher who was familiar with a Southern European behavioural culture.

Before the actual fieldwork, a pilot study of one week was carried out to build an acquaintance with the studied area.[27] Five favourable locations for interactions were identified along the two major axes of public life and leisure[28], with considerable criss-crossing of activities and variety of public-private interface spaces and greater diversity of users –Oriente station, Oriente Square, Vasco Gama Shopping Centre, Rossio dos Olivais Promenade and Riverfront (Figure 2). This central territory covers only 2 km in length, enabling easier exploration on foot.

During the subsequent months, fieldwork took a more structured format.[29] It was carried out 2 weeks each month, and in each day 4 structured walks of 2 hours were undertaken, with 20 minutes spent in each of the 5 locations. Fieldwork observations were done unobtrusively with a small video camera, which the researcher carried all the time to not lose any single event.

These strategies allowed to observe with great efficiency and to collect enough detailed data on how each location worked in bodily and physical terms, by focusing on people's bodily behaviours and gestures with particular attention to the three behavioural cues of social distances, body orientations and 'tie-signs'.

The data obtained from the observations was also complemented, compared and contrasted with a small sample of interviews with passers-by, who were asked about their social experiences and interactions in the PN's public spaces.[30]

In order to provide rich descriptions of the bodily interactions in relation to the spaces and features that supported them, the analysis was more qualitative than quantitative. To do so, the findings were coded into a number of relevant social and spatial themes both identified from the literature and fieldwork, which were later quantified to identify hierarchies and qualified to explore commonalities and relationships (Table 3).

Figure 1. Aerial picture of the PN on the Northeastern side of Lisbon's harbour. Source: Abilio Leitão, Archives of Parque Expo. SA, 1999.

Figure 2. The Public Realm of the PN. Source: the author, 2013.

'Open regions'

As a comprehensive review of the findings is not possible here, this paper will examine the riverfront which was the location where the greatest number and variety of users, uses and social interactions were observed during fieldwork, and as result, that best qualified as an 'open region'.[31]

Fieldwork disproved some of the social critiques to the PN revealing that the riverfront is a great social and cultural mixer. After all, it was the location where most social and cultural diversity was observed: from different ethnicities –evidenced by people with head scarfs and of colour– different gender and age groups –women, elderly and children– and social classes – evidenced by the presence of both working class families with several children and modest dressing codes and high-scale dressed families and individuals. Interestingly, however, our interviewees (2010 and 2012) revealed that this socio-cultural diversity consists of a healthy mixture of locals and non-locals from other parts of the city.

Fieldwork findings are also seen to problematize some of the critiques to the PN's urban design and its perceived negative impacts to the public realm.
Observations show that the riverfront is actually fairly lively and well used during Spring and Summer in both weekdays and weekends and at different times for different purposes. This is possible thanks to the PN's functional diversity and uniqueness of its central part. The PN's central part offers itself as a large city park serving both the local community and the wider city with a well sustained mix of surrounding uses and a specialised cultural and leisure function, so far inexistent in Lisbon. Furthermore it has a new type of urban scale and design, totally distinct from the traditional city, which contribute to making it, as many park users expressed, "a unique and novel park experience in Lisbon" (Anonymous Interviewees, Personal Communication, 2010 and 2012). These findings more than confirming Jane Jacobs' criteria (1961) about what makes a good park, they also reveal that the urban design has a major role to play.

During the fieldwork interviews it became evident that not all park users have negative views about the PN's urban design (Anonymous Interviewees, Personal Communication, 2010 and 2012). 60% of them "like the [park's urban] scale", for them "it should not be smaller", after all, they see the park as a "ludic area". Also, 40% of the users do not feel controlled; its [riverfront ludic] nature "transmits freedom". Some even have "never noticed that there is control in the first place". But those who noticed it, like to see it because "it makes them feels safe". 70% of the park users like the new and clean aesthetics of the urban design and architecture, making the PN feel novel and unique. 40% of them do not see the public spaces as mere spaces for walking, but for a multitude of uses. Also, 55% of the users do not see any problem with the sectorisation of the plan, "this is a ludic space, it should not have too much housing". Apparently, for 45% of them, the riverfront's strong thematic continuity, which combines the expo's theme with leisure, is seen not only to "loosen its character", inviting and accommodating "always new social uses" rather than constraining them.
As we have seen, many of the PN's urban design critiques become relative and even questionable when we take stoke of the different user's experiences, needs and demands. The question that arises then, is what exactly qualifies the riverfront as an 'open region'?

Table 5. Frequency of social encounters in 'open regions'. Source: the author, 2013.

Figure 3. Map with 'open regions' locations along the riverfront. Source: the author, 2013.

Spatial novelty and diversity of an 'open region'

Fieldwork identified two spatial conditions to facilitate a great level of social comfort and mixing at the riverfront and, in doing so, to sustain its character as an 'open region'. These were: spatial novelty and diversity.
As many park users expressed, the PN's spatial novelty is derived from being not only "a new space in Lisbon" with "no history", "fixed meanings" or "regular users" but also a space with a "totally distinct [urban] scale and [design] language from the traditional city" (Anonymous Interviewees, Personal Communication, 2010 and 2012). After all, it is a representative of a new generation of emerging typologies –in this case of a riverfront as a new type of public space for leisure (Stevens and Dovey, 2004)– and a new type of design aesthetics, combining a modern interpretation of old typologies of Southern European squares and streets –visible in the minimal and acontextual design trend of the hard paved squares– with the new 'theme park' design trends –in this case several spaces are seen to evoke the World Fair '98 thematic in their names, designs and public art–, and new building practices which combine traditional with new craftsmanship (Rowe, 1997).

Spatial diversity is provided by a great variety of types of spaces and uses, in particular in the PN's central part[32], which is not only seen to cater the needs of a diversity of users but also introduce new uses and habits previously uncommon or even unpopular among the Portuguese, e.g. outdoor sporting activities and looser behaviors (Figures 4 and 5). The Portuguese have always preferred to stay indoors despite of having a Mediterranean culture (Gaspar, 1995).

Apparently, despite the riverfront's quite clean and rigid look, its spatial novelty and diversity seem to legitimize a broader scope of meanings and behaviours for a wider range of users, contributing to make it sociologically more open, inclusive, heterogeneous and public. In order to understand this, the next section will examine how and where social interactions occur at the riverfront.

Figures 4 and 5. People sleeping in public (left); People sunbathing (right). Source: the author, 2013.

Social and spatial mechanics in an 'open region'

During fieldwork, three main types of locations were identified –X (1,2) Y (1,2) and Z– to frame different levels of interaction with strangers (Figure 3). The locations X (1,2) were identified as areas of public privacy where people sought to be alone in public; Y (1,2) as areas of passive social interaction where people shared the same space with little or without interaction –the most frequent type of interaction because involves less risk–; and Z as areas of publicness and active social interaction where people had both visual and verbal social encounters – obviously the most risky and infrequent type of interactions.

At the first sight, all the three types of locations seem to have similar spatial qualities –great openness in terms of layout and are surrounded by water at least at one side. However, each location has significant differences in the types of people, uses and interactions they attract and this can be well understood by the type of seating spaces, building edges and visibility provided.

The locations X (1, 2) were mapped as the most private because of two distinct features. First, they are bordered by passive activity edges. One is surrounded by water at both sides (X1), the other is surrounded by water and gardens at the east and west sides (X2). Both edges generate little criss-crossing of uses and people. Second, they are the only areas that provide

small-scale enclosed seating spaces with closed backs and L and U shaped benches –appropriate for 'withs', particularly couples, and people alone in search for public privacy–, both of which are more inviting to rest and to contemplate than to encounter other people.

Two good illustrations of this search for privacy were identified in location X1. The first occurred when two couples sat next to each other at the comfort of the islands of benches during a weekday in June at 11 am (Figure 6). The social distance between them was roughly 7m and their back-to-back body orientations and no 'tight-signs' among them suggested no relation with one another. The spatial setting also indicated few predispositions for interactions with the people surrounding them. The close layout of these L or U benches created a very private territory and atmosphere, somehow unwelcoming to others to enter. As a visitor described it well, it is perceived as a "private living room" (Anonymous Interviewee, Personal Communication 2010).

A second illustration of public privacy occurred a few hours later at the river seating edges in front of the previous islands of benches (Figure 7). These seating edges appeared to offer social comfort and privacy for a lot of different types of users alone or in small-groups. Yet they did not interact with strangers, because also this space was seen to create pockets of privacy. This was caused by its openness and visibility, which accentuated exposure –people's backs are not protected– and increased social isolation, and by people's preference for seating orientations to the river, which can be read as a search of privacy. Hence, these locations were mapped as the most private areas of the riverfront (Figure 3).

Figure 6. Islands of benches: pockets of public privacy. Source: the author, 2013.

Figure 7. Riverfront edges: pockets of public privacy. Source: the author, 2013.

The locations Y (1, 2) were mapped as areas of passive social interaction because of their less defined character and territory. They are less enclosed than the previous locations. They are the locations where the riverfront's building edges open up. One is the location where the riverfront meets the main public axis, the Rossio promenade (Y1); the other is where the riverfront opens up to the children's playground (Y2). Both locations are transition zones in-between two contrasting behavioural areas, a quiet (X) and a more busy central area (Z), and as such they are often not inviting for longer stays, except during lunch. Furthermore, they provide mainly linear seating edges, inviting a certain level of mixing, particularly among

people alone. But because they are spacious and offer little enclosure, people are likely to have little interactions with others despite feeling confortable sitting at close social distances.

This was evidenced by the following observations. One was in July on a weekday around noon. It involved two couples of different ethnicities –one white and another of colour– that have purposefully sat next to each other in the front line of the riverfront edges (Y1) (Figure 8). This location has a very public but intimate sphere. Its spatial conditions guarantee a good balance between exposure and privacy. Because it is at the intersection of the riverfront with the main public axis, it feels very open, exposed and very public. At the same time, the river's romantic and quiet reputation contributes to framing an intimate and contemplative atmosphere.

Further analysis on the couple's seating positions, also reveals that their parallel seating and body orientations (but vis-a-vis-positions among the couples), no 'tie-signs' among each other and public social distance (6 to 8 m from each other) are not only the essential preconditions that guarantee them the right degree of social comfort and privacy to be in public but are also social inhibitors. However, according to Hall (1969, p. 179), at that social distance, strangers are confortable to stare at each other but not to start a conversation, as face information and hearing become less effective.

Figure 8. Passive social mixing at far social distances. Source: the author, 2013.

A second situation of passive interactions involved one couple and a woman alone who came to sit right at their back (Figure 9). It occurred in location Y1 on a sunny day in July during lunchtime. This was the location where the highest social mixing was observed at the riverfront. Most people preferred to sit at the riverfront edges, despite the availability of benches elsewhere. This is a confirmation that linear seating edges, because they allow sitting side-by-side, generally offer more social comfort and are more inviting for different types of user groups (Scheffen 1972, p. 30).
In addition, the riverfront edges are deep enough to sit back-to-back; with one-meter depth they still allow 0,20 meters of space in-between them. Neither the couple nor the woman seemed to be bothered with this close social proximity. They remained in the same position for about an hour, which confirms they were socially comfortable. But they still kept their civil inattention and did not interact.

Further analysis on the spatial conditions of this location, shows that the combination of conditions such as back-to-back positions and the location's openness and visibility –with a great frequency of people passing-by– create the right degree of social comfort, but also function as social inhibitors. Furthermore, short social distances are not always preconditions for interaction. The contrary is truer. When strangers are too close, they won't interact, especially at a distance of 0,20 m, which is the type of intimate distance that Hall considered to be used by intimate friends.

Figure 9. Passive social mixing at close social distances. Source: the author, 2013.

Most of the observed active social interactions took place in locations that felt very public and populated. Location Z is a good illustration of this. It has spatial features that make social interaction among strangers not only less risky but also desirable. One is its diminished visibility. Because it has the highest density of trees, it offers a lot shade. Secondly, it is surrounded at one side by activity edges, cafes and esplanades that create a constant synergy of uses and movement of people. Thirdly, it provides a lot of seating possibilities, which suit the needs of a wider range of people –many seating edges and benches with and without backs.

The most propitious times for interaction occurred during 'time-out' conditions, during holidays or weekends with good weather conditions. After all, 'time-out' conditions are the quintessential elements for setting the informal mood of an 'open region' (Goffman 1963, p. 132). All observations confirmed that whenever people had the availability for 'time-out' they were often more open and available for encounters. This openness for interaction was visible in their selection of very public locations and open seating positions.

A good illustration of such interactions (Figure 10) involved a woman that purposefully choose to sit among unknown people (A). Her seating position showed from the start her predisposition for interaction. Not only she sat facing the path rather than river, but also she placed herself right in the middle of a conversation, between two people sitting at her side (B) and back (C), respectively. This situation offered her the perfect opportunity to participate in their conversation. She seemed to be at ease to engage with them. In only a few minutes, she turned herself to the others and started talking with them. It is difficult to tell what exactly drove her to interact with them. As the place was so crowded, their conversation could not be heard. But it seems likely that the two other people's open seating position at 90-degree angles and

social distance of approximately one-meter also played an important role. These two conditions show openness for interaction with strangers.

Figure 10. Active social interaction between different user groups. Source: the author, 2013.

Another interaction [Fig. 11] occurred a few meters away from the previous location. It involved an elderly couple (E) who purposefully came to sit to watch the young mothers with their children (D). All seemed to be strangers to each other; they did not greet each other when they arrived. But this did not seem to matter. It did not take them long to start a conversation. The two elderly (E) promptly engaged with the children and their mothers (D). A few minutes later two other mothers (F) also joined the conversation. Their status of 'open persons' –children and elderly– and their open positions –siting facing each other– and 3 metres of social distance –the most confortable distance for strangers– created the perfect conditions to interact without great compromise.

Figure 11. Active social interaction among 'open persons'. Source: the author, 2013.

4. Conclusions

This paper explored bodily social interactions among strangers in newly designed public spaces and examined the applicability of body language methods to study their socio-spatial mechanics. The combination of such focus, settings and methods allowed us new focused attention on the social and interactional potential of public space. In doing so, this paper has the potential to lead to several theoretical and methodological advances. This will be first demonstrated by answering the research questions that were set at the beginning.

The findings brought insightful answers to the first question: 'how conducive are large-scale, controlled and themed newly designed public spaces for social interaction?'.
They showed that although many urban design critiques continue unresolved, many PN's public spaces could offer great scope for social interactions, and this was the outcome not only of the functional diversity and uniqueness of its central part but also, and more importantly, of its spatial affordances and the socio-spatial mechanics of the interactions therein.
As observed, the PN's riverfront spatial affordances, particularly its spatial novelty and diversity, play a great part to make it conducive to social interaction. The spatial novelty of its new spaces and design aesthetics is seen to enhance the riverfront's sense of publicness and to make it sociologically more open to a diversity of users. Its spatial diversity in terms of

spaces and activities is seen to provide totally new affordances for both existing and new uses. These two qualities are key to expand the riverfront's socio-spatial and behavioural potential and to challenge the design conventions or preconceptions we might have about its spaces. As observed, the riverfront's ludic nature and spatial novelty and diversity are seen to afford a variety of planned and unplanned social uses, interactions and behaviours, which fulfil the user's diverse needs in terms of privacy, publicness and social comfort but also help to reduce the perceived feelings of large-scale and control.

We also cannot leave without acknowledging that the socio-spatial mechanics of the interactions occurring in those spaces can shape in as much as they are shaped by the affordances of those spaces. As we have seen, although the riverfront is new and has no behaviour-place association to build upon and all interactions among strangers therein are unplanned by nature, people's predisposition for interaction, expressed by their body language, can tell us a lot about the limits and opportunities of the design of those settings. People will always try to strike a good balance between social comfort and exposure, looking for spaces that feel right to them and appropriating or changing them if they need to.

Fieldwork also provided us useful answers to the question 'How, where and under what conditions does social interaction among strangers occur in such newly designed public spaces?' It showed that despite the critiques they are also able to provide optimal settings and conditions for different types of social mixing and interaction: from areas of public privacy to areas of passive and active social interaction. This is a confirmation again that they can have not only great scope for interaction but also be social and behavioral sensitive to different user needs in terms of publicness and privacy.

Further analysis on how social interactions occur in those different settings brought us new understandings about the conditions that frame them. It identified that the riverfront offers all the necessary conditions to qualify as an 'open region'. However it is of a very different type than the established conceptions (Goffman 1963, p. 132, Oldenburg, [1989] 1997, pp. 20-42). The fact that the PN's riverfront is a very high profile public space – in its design, control, management and rules of behavior– but attracts a highly diverse crowd, it offers a great contrast to the low profile and socially homogeneous character of conventional 'open regions'. In addition, the fact that this is a new type of public space with a novel and diverse design, makes it a very popular space but with an anonymous, and somehow undefined character, and by doing so, very distinct from the familiar, homely and fixed character of traditional 'open regions'. Additional analysis on where interactions occurred also demonstrated that the PN's riverfront is seen to offer a variety of optimal settings for social interaction rather than a single one, as usually expected from an 'open region'. Each setting has very specific spatial characteristics and very distinct social and interactional potentials, catering therefore very

specific user groups. Likewise, the settings that offer most privacy cater primarily ‘withs’ or people alone and are characterized by a very quite and private atmosphere and very specific spatial qualities: enclosed seating spaces and passive building edges (water and gardens) or openness and visibility but immediate orientation to the river to ensure privacy.

The most favorable spaces for passive social mixing and interaction are transition spaces with undefined spatial and behavioral characters, given their spatial and functional in-betweeness, little enclosure and provision of only linear seating edges. These are the spaces that invite the most sensitive user groups –e.g. women alone and people of colour– because they allow mixing with little interaction.

Finally the spaces that were identified to be most propitious spaces for active social interactions were the most public, attracting the most diverse range of users from people alone to groups. Their publicness was also framed by very particular spatial features: diminished visibility, enclosed by activity edges, and varied seating possibilities.

Altogether these findings attest that ‘open regions’ are not spaces simply dominated by public sociability. They can also encourage different levels of mixing and interaction, depending on the range of spatial affordances offered. This later finding also shows that the character not only of ‘open regions’ but also other informal social settings more generally is much more dependent on their spatial characteristics than Goffman and other authors have theorized, providing thus further input to the last question: ‘what role does urban design play in creating or eliminating opportunities for such type of social interactions?’.

During fieldwork it became evident that the socio-behavioral conditions may help to set the mood and character of the place, but ultimately the spatial conditions are the ones that frame the opportunities for the occurrence of such interactions.

The observations illustrated a range of ways in which urban design could promote different types of interaction. The two conditions of spatial novelty and diversity were identified to be important preconditions to develop social uses. Further micro socio-spatial analysis also suggested that the breath of informal social interactions was very dependent on the specific spatial conditions of the locations where they occurred particularly the type of seating spaces, building edges and visibility provided. These findings attest that urban design has an important role in shaping the publicness and sociability of public spaces, alongside their ownership, accessibility, management and agency (Varna and Tiesdell, 2010, Nemeth and Schmidt, 2011).

Finally fieldwork also enabled us to examine the applicability of body-language methods to study the bodily socio-spatial mechanics of social interactions among strangers in public spaces. It showed that body-language methods promise to make a valid, original and productive methodological contribution to urban design.

They offer a valid method of spatial analysis from a behavioural perspective. By putting the body of the users at the centre of the spatial analysis, they allow a deeper understanding of the limits and opportunities of the urban design to meet people's needs in terms of publicness, privacy and social comfort, in doing so, they can help us to analyse the affordances of space for social interaction in a more tangible and measurable way.

This contribution is original; it introduces for the first time body-language methods as valid research methods into urban design. Despite several past attempts to apply body-language theories into public space research, these were always used as basic aids of observation to read the types and levels of interaction observed (Whyte 1980, pp. 16-17,54). Body-language methods were never fully recognised as effective analytical tools on themselves that could be used to examine the mechanics between bodies and space of social interactions and assess the spatial affordances of the public spaces where they occurred.

Such a methodology is productive; it offers an assessment of the public space's socio-behavioural performance, which is possibly more robust than other established studies that rely only on quantitative analysis of uses and behaviours (Gehl and Svarre 2013, pp. 13,25,32). Because it draws upon a far broader and richer conception of urban experience, use and behaviour, it can allow a deeper engagement with the complexities of the public realm and an understanding of the wider scope of affordances, which the built environment, particularly public spaces, offer for human perception, action, and social relations with others.

We cannot, however, dismiss the drawbacks and limitations of this research.

The scope of the research presented here is still limited. Although it enabled us to further our knowledge on the informal sociability of public spaces and the role of urban design in it, because it is built upon one single case in a specific geographical cultural context, its findings are far from conclusive or generalizable. More research is needed to expand or contrast these findings with other case studies in other social and cultural contexts, and to deepen our understanding of the optimal social and spatial conditions and locations for social life.

There are also several drawbacks of using body-language methods, as they require mastering of two distinct bodies of knowledge –socio-behavioural and design–, are time-consuming, requiring many hours of observation and analysis, and will always lack rigor, as they can only offer partial and superficial information about people's motives. There is therefore a need to continue to test and refine them, in order to gain a better understanding of their full potential and contributions to urban design.

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Interviews

'Interview between Author and Editor of Local Newspaper "Noticias Do Parque" (Miguel Menezes)', 2010.

'Interviews between Author and Anonymous Residents, Visitors and Workers', 2010 and 2012.

Notes

[1] Kinesics is the study of body language communication such as facial expressions and gestures, nonverbal behavior related to movement of any part of the body or the body as a whole.
[2] Proxemics is the study of human use and perception of interpersonal space.
[3] The most insightful was Steven's study (2007). By focusing on public play, he identified the spatial elements that frame a wide range of non-instrumental urban behaviours: interactions with strangers, new bodily experiences, discovery of new views, and reading of new meanings. This study was a first attempt to understand the complex relations between perception, actions, people and the built environment, which shape behaviour in public space.
[4] The term 'interaction order' is understood as the organization of observable and everyday behaviour.
[5] 'Unknown' stranger is traditionally defined as 'the person whom one does not know or with whom one is not familiar' (Hornby and Cowie 1989).
[6] 'Categorical strangers' are defined as those one does not know, but with whom one knows one can have a routinized relation, as

with people in an occupational instrumental role or identity such as a shop assistant or a police officer (Karp 1991).

[7] The concept of 'familiar strangers' was introduced by the sociologist Stanley Milgram (1992) to refer to the 'ones that are not personally known and with whom one does not directly interact but because of a shared daily path or round, they become recognizable'. As he explained, such is the case of 'fellow Londoners, people in the tube, people living in the same street or crossing the park each morning. […] Despite not knowing them, people share space with them and a relationship of mutual respect can go a long way towards creating a good sense of place and belonging.'

[8] 'Routinized' relations are essentially necessary relations among 'categorical strangers', because they only involve necessary activities such as the relations between shop assistants and their clients that result from an exchange of service. Because these relations are well-known to both parties, and have a more standardized and predictable character, they are often considered less sociologically interesting. They happen anyway, whatever the social or spatial conditions.

[9] The 'quasi-primary' relations are normally created by relatively brief encounters between both 'unknown' and 'categorical strangers'. They occur in situations of defending territory, generating sociability, or perpetuating inequalities. They may be pleasant and emotionally positive but often they are not. The 'intimate-secondary relations' are those created when actors 'generate sociability' (e.g. the friendly chat between dog owners during encounters on the street and among habitués of non-parochial drinking establishments). These relations may be longer lasting than the quasi-primary type, since they can last for weeks, months or many years. Although these sorts of relations are more characteristic of the parochial realm, as they involve habit and routine, their presence can affect the behaviours of the other people within the same spaces.

[10] 'Chance encounters' are the type of encounters that involve greater risk. They are totally spontaneous, being derived from dynamic conditions of the place, such as extraordinary events (e.g. a party). They can be playful and irrational when people understand and accept the limits of risk. According to Sennett, they expand the individual's experience of life, stimulating new values and new social behaviours.

[11] The public order consists of the rules of conduct set by society. To conform to these rules, people in public settings are expected to cooperate with one another and to preserve their own and others' public identities, while keeping at a minimum their involvement with one another. Within this normative context, Goffman identified five principles that appear to guide our daily public face-to-face interactions, namely: cooperative motility, civil inattention, audience role, restrained helpfulness, and civility towards diversity.

[12] 'Open persons' have availability for encounters, e.g. children and elderly people.

[13] 'Open regions' are places with an informal or 'loose' character. They demand less attachment and respect than formal or tight environments, and as a result are places where informal sociability was not only desired but also legitimised and appropriate, e.g. cafés and bars.

[14] This concept was introduced by Whyte (1980) to define a process by which some external stimuli of a varied sort from physical objects, sculptures or street views can improve the scale and sense of place and have strong social effects, such as to trigger social interaction between strangers.

[15] Sherry Cavan (1966) compared it with the 'time-out' used in game rules. 'Analogous to the 'time-out' period of the game, the lack of seriousness found in public settings where consequentiality is suspended, should lessen the constraint and respect required within the setting and thereby generate a modification of the public order typically found in a variety of more serious settings, such as restaurants, hospitals, train stations, concert halls, departments stores, and city streets'. In this study, 'time-out' is understood as free time or holidays.

[16] Extraordinary events can be considered all type of unplanned and unforeseen situations e.g. disruptions of train services, parties, just to mention a few.

[17] According to Lofland (1998), 'mixed locales' are places that are socially comfortable for everyone, especially for newcomers.

[18] According to Oldenburg (1989), 'third places' are popular informal gathering places between work and home. Examples are private businesses like drinking or eating places and small shops.

[19] According to Zukin (1991), 'liminal spaces' are spaces where class distinctions and notions of publicness and privacy are blurred. Examples are public-private spaces such as department stores or museums, where cultural and mass consumption is offered to a large public.

[20] According to Frank and Stevens (2007), a 'loose' space depends far more on the physical possibilities than does an 'open region', specifically on the diversity and disorder available rather than on accessibility or freedom of choice.

[21] Their physical actions often differ according to their size. Small groups tend to form small squares, while large groups prefer circles.

[22] Video recording does not have only advantages. Not only can it be costly in terms of materials (though with technological advances the cost is decreasing) but it can also be time-consuming in terms of designing the research setting (finding an ideal, visible and audible place to record), obtaining the necessary permissions to film certain public spaces, the time spent recording, storing and retrieving the data collected. We must also acknowledge that the visibility of the camera may also impact on naturalness of the social interactions studied.

[23] The PN's ambition is visible in its size of approximately 330 hectares and 5 km of waterfront length, its privileged geographical location between Lisbon's historical centre and the city's main international airport, and the population of a small tier city.

[24] Portugal's population has been remarkably homogeneous for most of its history. It was only during its colonial history that it became a bit more ethnic diverse in Lisbon, the capital city, but the rate of non-nationals was always kept very low. In the last census of 2016 non-nationals only amounted to 9.30%.of Lisbon's total inhabitants. After its colonies were granted independence in the mid 70s, groups of immigrants from Angola, Mozambique, São Tome, Timor, Goa, Macao and Brasil came to settle in Lisbon. These ethnic minorities from the former colonies were not fully assimilated and often faced to a varying degree racial and cultural prejudice. However, the small size of these diverse ethnic groups prevented this apartness from being a serious social problem (Ethnicity and Ethnic groups, available from: http://countrystudies.us/portugal/55.htm)

[25] The urban design scheme had implicit certain pre-determined physical social and economical goals, which resulted in a very ordered plan with a strict sectorization of activities: the shopping centre was designed as the heart of the neighbourhood and its main retail and social space, the public axis was meant to cut across the main public activities and the leisure axis to function as the recreation space.

[26] Most spaces were named and designed to evoke the Expo 98 theme, 'The Oceans a Heritage for the Future', to commemorate the 500 Portuguese discoveries.

[27] The pilot study was undertaken in one week in December 2008 and consisted of several unstructured walks.

[28] The public axis cuts the central part from east to west , from the station to the riverfront. The leisure axis connects the north residential area with the central mixed-use area and south residential area.

[29] The first year of fieldwork was undertaken in 4 months: April, June, July and December 2009. The second year was slightly shorter, it took 3 months: August and December 2010. In each month, fieldwork observations were carried out in 2 weeks of 3 weekdays, and allocated 4 x 20 min per location during the structured route/walks. This gave roughly a total of 48 hours per location. The subsequent years of 2012 and 2014 consisted merely of a follow up during a week in August to clarify outstanding issues.

[30] During fieldwork several interview formats were tested: from the general type to walking interview methods. In this paper we only report the general interviews with 42 passers-by, who were selected at random based on their expressed availability (e.g. they were usually selected during lunch breaks or after working hours). The interviews were aimed to gain an understanding of the interviewee's social experience of the PN as a whole and of the specific locations where they were interviewed and to clarify the key issues highlighted during the observations. To do so, they consisted of a standard set of open-ended questions aimed for a minimum duration of 20 min, but could be longer depending on their availability. The questions asked were as following: 1. Are you a visitor, worker or resident? 2.Could you tell me whether you use frequently the PN and/or this specific space?; 3. If yes, how do you describe this space? Do you think it is a comfortable space spatially and socially (it has sufficient spaces for sitting, resting, and socializing?); 4. With which uses do you associate this space? And are there any variations of use? 5. Do you think this space propitiates informal public life, i.e., social contact between strangers? If yes, under which conditions they can happen? 6. More specific questions were asked if any relevant issues from the observations required clarification.

[31] The riverfront was after all the only space in the PN described by different interviewees as the location where 'there is a mix of different people, and is comfortable for everyone and for everything'.

[32] It offers a variety of spaces for leisure activities along its length: five green spaces (the 'Jardim das Ondas' garden and four 'Jardins Garcia da Orta' gardens), two playgrounds for children, a variety of seating spaces (seating ledges facing the river, various layouts of benches for groups, and individuals, and esplanades), and a variety of scenic paths (route next to the river, pedestrian bridge over the water).