

Creating the Experience of ‘Sense of Co–Presence’ in Public Places: Insights from the Independence Square of Colombo, Sri Lanka

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Abstract

Man as a social animal is constantly in need of contacts with other human beings. One feels safe and included when surrounded by other people thus creating a ‘sense of co-presence’. The bodily presence and face-to-face human interactions shape an individual’s behavior. The concept of sense of co-presence is widely discussed by many sociologists emphasizing the links to the physical context of a public place. This research investigates how the sense of co-presence is influenced by the architectural properties of an urban public place comprised of the recently developed public spaces around the Independence square in Colombo. It ascertains what spatial and physical parameters create such feelings.

The theoretical framework is based on three main components. Collin’s theory of interaction rituals and co-presence explain why co-presence is important in the societal process. The spatial theory of space syntax developed by Hiller and Hanson identifies the potential spaces with co-presence answering the question “where is co-presence created”? Bridging these two social and architectural theories, Zhao describes the co-presence parameters and identifies the key factors, which create a sense of co-presence.

A detailed literature survey was carried out to comprehend the existing knowledge related to the issue. Field observations were also employed as a research method.

The research identifies six main architectural parameters: accessibility, layout, permeability, level of light and shade, sense of security and the activity pattern as significant factors. These determine the quality of visual interactions that significantly influence the sense of co-presence in an urban public place. The factors, which enhance visual connections, have an importance in the public realm. This study concludes that if the visual interactions are low, the occupancy rate of the public place decreases, in spite of any high level of physical comfort provided through architectural design.

Keywords: Sense of Co-presence, Public places, Space syntax, Visual interactions

Introduction

In the minds of those who are involved in the making of spaces: both architects and landscape architects, there is an unresolved question as to what makes a public place fascinating. It is not known if it is the architecture of the place or the

natural beauty of the place or some other element. At the same time, there is the question why people get bored after staying in a place for a few minutes, notwithstanding the beauty of the surrounding area. The real question is what can revitalize and make a person enjoy the public setting of a place even after becoming **inured** to it.

“Co-presence” is a sociological concept that describes the conditions in which people interact with one another face to face and body to body. It is the idea that the presence of other actors shape individual behavior, links macro- and micro-theorizing about social interactions (Mead, 1934; Goffman, 1963). Indeed, co-presence is an important factor for social processes due to the satisfaction derived by people being in the presence of others and to be accepted by others.

However, according to Zhao (2006), sense of co-presence is a subjective experience of being with others, which involves an individual’s perceptions and feelings of being with others. As Goffman (1963) says, co-presence is bodily presence and bodily experience while perceiving others and sensing being perceived by the others. It depends heavily on the context as well as the mood of the place and the user.

Zhao says

“Undoubtedly, an individual’s perceptions and feelings of being with others are shaped by a set of complex factors that are both internal and external to the individual. For example, psychological states, such as mood, alertness, and prior experiences, will affect an individual’s sense of co-presence, and environmental factors, such as temperature, light, sound and smell, may also influence an individual’s sense of being with others”

Zhao, 2006:17

Thus, sense of co-presence differs from space syntax because it does not relate directly to the spatial arrangement in comparison to the macro area. Instead, it identifies the three dimensional architectural characteristics of a micro space / public place. In this context, this paper examines how sense of co-presence is influenced by the architectural properties of an urban public place. It focuses on the recently developed public spaces around the Independence square in Colombo and ascertains what spatial and physical parameters create such feelings. The aim is to understand the complexity of architectural experience of places and how they relate to the physicality of the spaces as well as the presence of the other people. Its objectives are as follows.

1. To ascertain the spatial experiences of the people using the public spaces around the Independence square in Colombo.
2. To reveal the presence or the absence of ‘sense of co-presence’ at the public spaces around this place.
3. To identify the architectural parameters that strongly contribute to ‘sense of co-presence’ of a place.

Theoretical Framework

Some have examined the idea of ‘sense of co-presence’ theoretically. Among them, Collins (2004) stand out. His ‘interactive ritual chain’ theory is influenced by the work of Durkheim (1912) and Goffman (1959). He argues that these interactions produce ‘emotional energies’ within the participants. They are increased or decreased by four main factors.

They are:

- Co-presence of interactions / bodily co-presence.
- Exclusivity of the group / barrier to outside.
- Mutual focus and mood.
- Bodily synchronization / shared mood.

On the contrary, the spatial syntax theory provides a basis to understand how the spatial form of an urban context or a public place influences the sense of co-presence. According to Hanson (2000), co-presence is a precondition of bodily (face-to-face) social interactions which occur spontaneously. He explains that the functions of a city provide the stage to create co-presence, which is a psychological state of mind. In this regard, the works of Hiller and Hanson (1984) proposing the theory of space syntax is noteworthy. Hillier et al. (1987) point out that spatial morphology of a city creates ‘spatial life’ or a pattern of space within its configuration. The spatial layout, which allows movement is a process that produces probabilistic encounter and co-presence.

- **Spatial layouts of public spaces.**

Space syntax is a configurational method of studying a spatial layout; it provides an insight to how the spatial layout is integrated and how it behaves in relation to other physical attributes such as accessibility, location as well as connectivity to an urban network (Space Syntax Limited, 2009).

- **Movement patterns in public spaces.**

According to Hiller & Hanson (1984), movement patterns are independently and systematically affected by the urban grid structure. These movement patterns are referred to as “natural movement” and are important to understand the “sociopetal” (arrangement made to facilitate human interaction) in relation with other physical dimensions.

- **Visual/perception links in public spaces.**

An important aspect of the space syntax configuration is the visibility and the permeability of a place. According to Hillier et al. (1987), space syntax analyzes the visual connectivity of a place in many different ways.

- **Formation of sense of co-presence – Zhao’s Co-presence Interface Parameters (What creates co-presence?)**

Zhao (2006) has identified four main parameters, which affect co-presence, in examining ‘the taxonomy of co-presence’. He states that co-presence consists of two dimensions named as ‘the mode of co-presence’ and ‘sense of co-presence’. The mode of co-presence refers to the physical condition that structures and influences the human interactions. The sense of co-presence is referred to as the individual’s subjective experience when interacting with the others. Zhao argues that the mode of co-presence directly affects the sense of co-presence.

This raises the question as to what creates sense of co-presence in a place – Embodiment. The involvement of human bodies in the process of communication is referred to as “embodiment”. For this reason, the immediate physical setting of the co-present individuals is very important for the embodiment. Following notions articulate this.

- **Immediacy**

Zhao (2006) describes ‘immediacy’ as “the speed at which the message travels back and forth between the co-present individuals”.

In corporal co-presence, for an effective ‘immediacy’, the individuals should be within the range of each other’s naked sense of perceptions, to communicate and to pass and receive the messages with unmediated sensory channels.

- **Scale**
According to Zhao (2006) “Scale refers to the number of people enabled by a given location to interact with one another.” In corporal co-presence with the face-to-face interface, only a limited number of people are allowed to effectively communicate with each other. However, sense of co-presence which involves both interactions as well as non-interactions, sometimes make the users feel co-presented even in larger scales (large open space too) if the place is heavily embodied by the people.
- **Mobility**
Mobility is defined as the capacity of co-present individuals to carry on interactions while in locomotion. In corporal co-presence, only a limited amount of mobility is allowed due to the face-to-face interface needed for effective communication. For effective mobility, all the participants have to move along with each other.

Interestingly, the architectural parameters that contribute to sense of co-presence can be measured. The parameters are as follows.

- **Location and accessibility**
The access of a public place is determined by its location, while easy access and the other potentials of the location determine the quality of the public place and the occupancy rate of that place. The public spaces should act as the nodes of the city, allowing the pedestrians to pass through it.
- **Layout and seating arrangements**
Layout and the seating arrangements determine all the four aspects of embodiment, immediacy, scale and mobility. As the layout of a place determines how many users are facilitated in a space, it also determines how the users are placed and entertained in the site. Layout of a public space is the main aspect, which determines some of the parameters of a quality public place (Gehl,2001).
- **Permeability**
The importance of permeability and the visual connections of a public space are highly emphasized by many urban designers such as Gehl (2001), Lynch & Hack (1984), Hillier et al. (1987) and Lawson (2007). In the spatial theory Space Syntax (Hillier, et al., 1987), visibility has been given a high importance when determining the movement pattern of an urban network. Permeability determines all the key parameters of co-presence named as embodiment, immediacy, scale and mobility.
- **Level of shade/light**
Level of shade and light are key parameters, which determines the physical comfort as well as the liveliness of a place. In the daytime, level of shadings is very important to provide protection against unpleasant sensory experiences such as intense heat and glare (Gehl, 2001), especially in a tropical country like Sri Lanka. Indeed, level of light is important to see each other’s facial expressions clearly and at night, the importance of level of light is very high. (Gehl, 2001)
- **Level of security**
Gehl (2001) in “Life between buildings” identifies “protection” as one of the three main parameters for a quality public space. The levels of permeability, lighting, openness, accessibility and the layout design and other architectural factors contribute to create this sense of safety.
- **Activity / user behavior**
The provision of activity and functions in a public place attracts a lot of people to a site. Gehl (2001) emphasizes the need of diverse activities, functions, physical exercising methods and entertaining modes in terms of ‘comfort’, to make a lively public place for the people. He argues that the layout and the architectural design of the public space should encourage this provision of activities, which in turn determine the image, and the character of that place.

As can be seen, these theoretical notions articulate how sense of presence and co-presence comes into being and interact with each other to produce a significant impact of co-presence on the society. This research therefore engages these theoretical notions to understand and interpret the happenings at the chosen site.

Review of Literature

Literature related to the issue of creating the experience of co-presence of the urban dwellers is almost non-existent, although there is much research that employ space syntax as a research method. For example Al Ghatam (2024) examines the key spatial characteristics in the way the village spaces are embedded in the urban context, for their critical implication for creating different patterns of space use and movement. Osche et al. examine behavioral measures of presence and co-presence by analyzing multimodal cues produced during an interaction both by the user and a virtual agent. This is virtual space and not real space.

In contrast, Windlinger and Garber (2023) examine the functions and the relevance of spatial co-presence, during the the COVID-19 pandemic for evidence-based workplace and human capital management. They show that for companies that are experienced with distributed working, the reduction of co-presence has had important effects on performance and culture. Findings suggest that co-presence must be carefully managed in the future.

Moreover, some research that examine the creation of exotic experiences in landscapes do exist. For example, Wijetunga (2003) presents the work of Geoffery Bawa, who has transformed a wilderness in to an exotic environment through a landscaping intervention. Much has been written about this project. In these examinations however, it is the presence of the objects, plants and trees that are focused upon and not the presence of the other people. They are thus not helpful in understanding how the sense of co-presence has been investigated by the previous researchers. In other words, research examining the issue of creating the experience of co-presence of the urban dwellers is almost non-existent. Indeed, the oxford references to the term 'co-presence' when used in a search yields no results. It is thus fair to conclude that there is a serious gap in our understanding about the sense of co-presence which need to be enabled in creating wholesome experiences in public places.

Research Methodology

This research employs case study as a research method. The Case Study was the Independence square and the surrounding area in Colombo. The Independence Square (formally known as the Torrington Square) located in Cinnamon Gardens (Colombo 07), is a public recreational space with national importance. According to the UDA development plan, Independence square and its surrounding area, including the Race Course and the current Arcade shopping complex (former Auditor General's office) are proposed to be developed as a public recreational zone.



Fig 1: Location Map
Source: Author

Data collection was carried out in two stages as follows.

Stage	Methodological steps
Stage 1 (quantitative research)	– Identifying the spatial configurational pattern of “where co-presence is created”
	– analyzed through space Syntax theory and software
	– specific methodology for space syntax is described
	– from the space syntax analysis the places with highest integration and co-presence is identified
Stage 2 (qualitative research)	– studying and onsite observing the selected parts (from the space syntax analysis) of the public space
	– Identifying level of co-presence and social behavior of the selected places according to the Zhao’s co-presence Interface Parameters (2006)
	– capturing the spatial and architectural properties of the place which enhance the co-presence and analyzing and presenting them through the architectural parameters derived from the “quality of public places” theories (Gehl, 2001) (Lynch & Hack, 1984) (Lawson, 2007)(Liebst., 2012) (Baetz, 2012) (MdSakip, Akhir, & Omar, 2015)

Stage 1: Space Syntax Methodology

The spatial configurational pattern of “where co-presence is created?” was studied. The data was analyzed and presented through space syntax methodology (software). Axial maps were used as a tool for data collection.

First step of the case study was to identify and mark all the movement patterns, visual links and obstacles in the vicinity of the independence square, in order to understand the relationship between the spatial layout and the movement pattern. This stage included,

a. Analyzing movement patterns

- Identifying formal paths and nodes of the selected area
- Identifying informal paths created by user activities in the area
- Identifying human movement in the selected area

After identifying these paths and nodes Space syntax axial maps, Local integration maps (R3), connectivity maps and convex maps were produced and processed in order to comprehend the e Local Integration, Local Mean depth, connectivity, relationship between built environment and open spaces.

b. Analyzing permeability and visibility patterns

- Identifying visual links and visual obstacles in the selected area: These visual links and visual obstacles were used to understand the isovist space and isovist area maps. Point isovist maps have been used to clearly understand these visual links.

Stage 2: Qualitative Research on “what creates co-presence?”

Table 4: Research protocol
Source: Author

Aims and objectives	Identifying the architectural attributes, which have an effect on the co-presence and sense of co-presence in a place.
Research method- Qualitative research method	<ul style="list-style-type: none"> • Sense of co-presence is a very subjective psychological experience, which cannot be measured through numerical data of the quantitative research method. • Having a lot of intangible parameters which cannot be measured through quantitative data. E.g. sense of security, user perception on level of light, sense of the scale etc. Not to restrict the user response to a rigid questioner but to conduct in-depth interviews to understand how user perceive “co-presence” • To deeply understand the influence of the architectural parameters on sense of co-presence, in the context of social as well as cultural background of the public place. • For the flexibility of the research
Pilot Study 1	To identify the informal footpaths and movement patterns required for the space syntax To observe and recorded the user participation, occupancy level and activity pattern for one week.
data collecting time period	Data collecting is done on four Sundays
	<p>Only Sundays were selected for the study,</p> <ul style="list-style-type: none"> • Sundays have the highest occupancy level in the independence square • On Sundays the variety of user categories are higher • On Sundays variety and the frequency of activities are higher • As the study is limited to architectural contribution in creating co-presence, it does not focus on the user’s identity, social strata, economy, availability of free time and other social, political and economic reasons, Sunday provide a good opportunity for irregular users too to use the independence square.
interview sample (selection criteria)	<ul style="list-style-type: none"> • Availability of users to be observed, interviewed and analyzed random individual interviews with people who were presented at site 5 people from each selected part of the independence square and total 15 interviews
data collecting instruments / tools	Onsite observations - activity counter maps, photographing,analyzing plans, sections Semi structured in depth interviews
Analyzing data	Coding data Defining themes, expressions Organizing and Defining Data According to Codes Interpreting Findings <div style="float: right; border: 1px solid black; padding: 5px; margin-left: 20px;">Data gathered from interviews</div>
	Onsite observations - activity counter maps, photographic analysis analyzing plans, section
data presentation techniques	direct quotations of the interviews word clouds <div style="float: right; border: 1px solid black; padding: 5px; margin-left: 20px;">Data gathered from interviews</div>
	plans and sections photographic analysis <div style="float: right; border: 1px solid black; padding: 5px; margin-left: 20px;">Data gathered from onsite observations and study</div>
	activity counter maps and charts
Limitations of the method	<ul style="list-style-type: none"> • Though there are many types of public places, this research is mainly based on external public places • the research only depicts the situation on Sundays at Independence square (does not cover week days) • lack of quantitative data • Limitations of a qualitative research such as difficulty in assessing and demonstrating rigor (but issues and parameters have been examined in detail and in depth)

Findings

01: From Mapping the Movements



Fig 2: People's movement in the selected area
Source: Author

People's movement patterns including vehicle access, paved formal footpaths and informal footpaths have been recorded together, to see total human movement pattern of every transportation mode around the site

02: Formation of Sense of Co-presence –

Zhao's co-presence interface parameters (what creates co-presence?)

In the overall analysis, it was identified that in the selected area of the independence square has both positive and negative architectural aspects, which have affected the sense co-presence and its' parameters in different ways.

a) Location accessibility

Analysis of four places shows that the independence memorial area and the entrance of arcade have high embodiment, immediacy, scale and mobility level provided with their crucial location and the easy accessibility. The walking promenade and the central opening area in arcade with their enclosed locations have limited the embodiment rate in these spaces. The busy and highly segregated location of the walking promenade too has negative effects on the embodiment and immediacy level in the place.

Thus, the analysis concludes highly enclosed locations and too much segregated or busy locations are not favored while the pathways around the location favorably affect the mobility of the site.

b) Layout and seating arrangement

The overall analysis of the layout and the seating arrangement of the selected four spaces indicate that it is one of the most important architectural parameters in determining the sense of co-presence. The analysis shows that the all four spaces are effectively segregated into smaller spaces through the layout and have created an effective contextual scale in relation to human scale. The layout allows movements, visual connections and level differences as in

the independence memorial hall area and the entrance of arcade creating a positive impact on sense of co-presence.

c) Permeability

The analysis points out that the independence memorial hall area was highly preferred by the users because of the high permeability. Moreover axial permeability as in the walking promenade encourages users to move and create high level of mobility.

d) Level of shade and light

The overall analysis emphasizes on the above factor as the inadequate level of shading as well as the inadequate level of lighting at night reduces the sense of co-presence, in spite of other positive architectural characteristics of the site. The independence memorial hall and the walking promenade has the highest number of occupancy level in daytime but it drops down significantly at night with poor lighting level. Arcade entrance and the central open area on the other hand have low co-presence in the daytime due to low shading level and high co-presence at night due to good lighting level.

e) Sense of security

According to the findings of the study, when the bodily presence is low in a public place, sense of security also decreases drastically. High sense of security created in the independence hall area and the walking promenade area with the high bodily presence in the daytime, severely reduces when the embodiment rate goes down at night due to low lighting level of these places.

The central open area of arcade has a low sense of security in daytime due to low embodiment resulted by low permeability and shading level. However, it changes at night. Entrance area of the arcade is the only place analyzed in the study, which has a high sense of security in both day and night times.

f) Activity / user behavior

The findings demonstrate that the co-presence level differs with the activity pattern of the place. Walking promenade and the independence memorial hall area, which facilitate different activities, have a high embodiment level in the morning and the evening. The central open square, which does not have a specific function or a developed activity pattern has a low embodiment rate due to lack of activities.

Discussion

Although people and public places are two different presences, they cannot be separated from one another. Throughout this study, the need of physical presence, is argued and answered in best possible way with the concept of sense of “co-presence”.

The research question: how does architecture influence sense of co-presence has been formed and answered based on the theoretical framework. It is built mainly on three main concepts, which discuss and argue on the importance, placement and formation of co-presence in public places. Literature demonstrates that, the concept of co-presence is a cycle, when one part is broken the whole system collapses, thus finally resulting in decay and rejection of the public place.

The empirical case study carried on Independence square, by using space syntax methodology in the first stage and the qualitative empirical study in second stage, clearly demonstrates the relationship between the architectural properties of a public place in influencing sense of co-presence.

Conclusion

This research concludes that six main architectural parameters are of importance. They are: accessibility, layout, and permeability, level of light and shade, sense of security and the

activity pattern of the public place. In the final analysis of all the parameters, physical comfort and visual interaction are identified as the vital factors required to create effective sense of co-presence in a public place.

The importance of location and accessibility of a public place is higher when it is located in a clearly visible, vital place. Moreover the layout also play an important role in creating the movement pathways, visual links, permeability levels, physical separations, level differences as well as the provision of focal points, which positively create high co-presence in public places.

The study also highly emphasizes on the importance of lighting level, which enables occupants to see and read each other's facial expressions. The in-depth interviews conclude that people always feel secured and co-presented only when they see each other's facial expressions and for that, lighting level and visual connections are very important.

The case study and the research analysis also clearly show that when these highlighted architectural properties enhance visual connections, the level of sense of co-presence is amplified in a public place. Thus the study concludes that the architectural factors, which enhance visual connections, have more importance in creating sense of co-presence and recommends a higher level of visual connections facilitated with physical comfort and good lighting level for a successful public place, which can effectively create "Sense of co-presence".

Future studies;

The study opens a new dimension in the research area that focuses on the link between visual connections and sense of co-presence. It proposes developed studies on, visibility and movement patterns in public places, layout and permeability in public places and relationship between the lighting quality and sense of co-presence. Moreover, the developed theoretical framework and methodology can be effectively adopted in other types of public places also with minor modifications.

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