What Got Us Here, Won't Get Us There

15th International Conference of the European Academy of Design
ONLINE and in **PERSON** in **Brazil**, **Finland**, **India**, **Spain** and the **UK**.
16-20 October 2023

Positive Solitude: Rethinking public open space design in densely populated urban contexts. A Study in Hong Kong

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Abstract: Environmental design to facilitate positive solitude (PS) has been increasingly emphasised. This PhD research will examine the concept of positive solitude and its relevance to public open space design in densely populated urban areas, with a focus on Hong Kong. More than half of Hong Kong residents visit public open spaces on a solitary basis, but there is a lack of appropriate public space design to support and improve the quality of solitary activities. This research will develop a theoretical framework combining self-determination theory and PERMA theory that can assist designers in supporting and improving the quality of solitary activities in such spaces. A mixed-methods approach is planned involving direct observation, on-site interviews, on-site questionnaires and spatial analysis. The PhD research will generate design recommendations and guides, provide new perspectives on public open space design and help designers cater to the diverse needs of users.

Keywords: Positive solitude, public open space, densely populated urban context, spatial design, self-determination theory

1. Introduction

According to the theory of evolution, humans are social beings that require the presence of other individuals to survive (Hawkley & Cacioppo, 2010). However, solitude is a common human experience (Burger, 1995). Humans encounter solitude for various reasons throughout their lifetimes and subjectively adjust to it in multiple ways. Some people experience the sorrow and desolation of social isolation due to withdrawal from social connections or exclusion (Detrixhe et al., 2014; Larson & Csikszentmihalyi, 1978). Others might choose solitude to escape the demands of a busy life, for peaceful meditation, to cultivate their creative impulses or to communicate with nature (Coplan et al., 2021).

In recent years, both positive and negative aspects of solitude have been discussed by scholars in the field of psychology (Coplan et al., 2019, 2021; Lay, 2018; T. T. Nguyen et al., 2021, 2022; Ost Mor et al., 2021, 2021; Palgi et al., 2021; Thomas, 2021; Weinstein et al., 2022). Notably, scholars have

found that positive solitude can have specific psychological advantages because the capacity to appreciate a solitary experience can improve life quality (Ost Mor et al., 2021). However, there is limited research on the effect of spatial design on demand for positive solitude, particularly in public open spaces (T. Nguyen & Taylor-Bower, 2023). Since the distinction between public and private emerged in the seventeenth century and became firmly established in the twentieth, the home has been seen as the centre of private life and solitary activity (de Macedo et al., 2022), and public open space has been understood as an arena for exclusively communal activities (Carmona, 2021). However, in Hong Kong, half of the population uses public open spaces in a solitary way (Civic Exchange, 2018). Hong Kong is one of the most densely populated regions in the world, providing only 2.7 square metres of public open space per person (Civic Exchange, 2017), and there is a lack of appropriate public open spaces for solitary usage.

In light of this deficit in public open space design and to address the lack of research on the effect of spatial design on demand for positive solitude, this PhD research study will examine Hong Kong residents' motivation for positive solitude. It will use multidisciplinary approaches to explore how public open space design can support positive solitary experiences.

2. Related Literature

2.1 Public Open Space Design in Hong Kong

The design and provision of public open spaces has been integral to urban planning for several centuries (Carmona, 2019b, 2021; Carmona et al., 2008; Carr et al., 1992). These spaces allow urban dwellers to escape bustling city life, relax, and engage in outdoor activities. Public open spaces have gained prominence in contemporary society. They serve as communal gathering places, facilitate recreational opportunities and promote physical and mental well-being. The design of these spaces has been extensively examined in the discipline of landscape architecture and urban design. Their effects on the well-being of individuals and communities are well documented (Altman & Zube, 1989; Carmona, 2019a; Jian et al., 2021; Villanueva et al., 2015).

Public space refers to all areas in the built and natural environment that are accessible to the public (Carmona et al., 2008). The Hong Kong government defines the term 'open space' by its purpose and physical characteristics. This term has been treated as synonymous with leisure and recreation (Siu, 2001). The Hong Kong Planning Standards and Guidelines (HKSAR Planning Department, 2022) defines 'open space' as a statutory land use zone that provides open space and recreational facilities for enjoyment by the general public. It uses the term interchangeably with 'recreation open space' (Planning Department, 2022, p. 4). Over the twentieth century, as Hong Kong rapidly developed into a major global city, the importance of public open spaces was increasingly recognised, and many new parks and gardens were created. More recently, the government has encouraged and designed outdoor seating areas and pocket gardens to suit the city's highly compact urban form. These spaces serve as essential gathering places for communities and provide much-needed green spaces in a densely populated city (Tieben, 2016).

Policymakers in Hong Kong are becoming increasingly aware of the importance of high-quality public open spaces in a livable city but tend to ignore users' preferences. As part of its 'Hong Kong 2030+: Towards a Planning Vision and Strategy Transcending 2030' programme, the Development Bureau stated an objective to 'reimagine public spaces such as parks and streets in terms of their functions, quality, design, accessibility, provision and management' and to enhance Hong Kong's green and blue assets to create a sustainable built environment. The 2030+ Strategy places high value on quality open spaces in pursuit of its goals to promote an inclusive city that caters to the needs of all

ages, creates a healthy living environment and fosters unique, diverse and vibrant places (Planning Department, 2022).

Providing high-quality public open spaces is particularly critical in Hong Kong's highly dense urban environment, and these spaces must meet users' needs. The Open Space Opinion Survey (2018) investigated users' frequency and types of use, activities undertaken and needs in relation to open spaces. It assessed how well the city's open spaces met those needs. It found that about 85% of Hong Kong residents visit open spaces at least once a month, and over half (54%) of users go to open spaces on their own. The report revealed that many people in Hong Kong prefer to visit and use open spaces alone. However, the survey focused on ways to encourage social, rather than solitary, activities in those spaces (Lai, 2018). It illustrated planners' one-sided understanding of the facts and a disregard for the actual usage pattern revealed in the survey results.

According to the definitions of open space provided by HKPSG (Planning Department, 2022), activities without core facilities can be seen as "passive activities"(p.5), For example, simply sitting out, jogging and fitness activities. Solitary usage, such as sitting, relaxing, meditating, walking, and running alone, can be categorised as "passive recreational activities" (Planning Department, 2022, p.5). In addition, the nature of densely populated urban contexts limits the location of the venues cannot be too far from the living space. In this regard, the size of targeted open spaces cannot match the size of district open spaces (at least 1 hectare). Hence, this PhD research selects "local passive recreation open spaces"(Planning Department, 2022, p.7) in Hong Kong as the venue for analysing and facilitating positive solitude. In this PhD research, six types of "local passive recreation open spaces" are targeted for further study (Figure 1).

From the above review of public open space design and user preferences in Hong Kong, there is clearly a mismatch between design and user needs in the city. Why, though, do some users prefer to use public spaces alone? The following section examines work on this area in the literature to date.
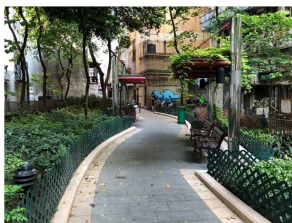
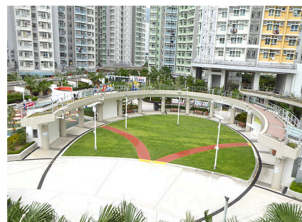Small playgrounds and sitting-out areas

Plazas and podium gardens in commercial buildings

Seafront or riverfront promenades

Unofficial open spaces

Open spaces in public housing estates or Home Ownership Scheme estates

Public open space in private developments

Figure 1. Six types of public open spaces in Hong Kong targeted in this research

2.2 Positive Solitude

Solitude is a common experience. Humans experience solitude for various reasons throughout their lives and subjectively adapt to solitude with a wide range of reactions and effects. Some individuals

seek solitude to relieve life's burdens, for peaceful contemplation, to nurture creative urges, to find a sense of company or to communicate with nature. Others might experience the agony and loneliness of social isolation, withdrawal or exclusion from social engagements (Coplan et al., 2021).

Some scholars have defined different types of solitude from the perspective of psychology. Larson (1990) defined solitude as an 'objective cybernetic separation, the severance of immediate exchange of information and affect' (p. 157). Physical and virtual seclusion from individuals prevents social and interpersonal interactions. However, when more specific situations are considered, the definitions of solitude become more finely differentiated. Long et al. (2003) found that physical seclusion is not required for solitude without social interaction. Coplan et al. (2017) identified this distinction as a 'state of mind' rather than a 'state of being'. Based on this distinction, Nguyen et al. (2021) distinguished between 'public solitude', where several individuals are present but do not actively interact, and 'private solitude', where individuals are physically isolated from others. The state of private solitude has been understood as real solitude in psychological studies where potential connections have been prevented (Weinstein et al., 2022).

Positive perceptions of experiencing solitude have long been discussed (Lai et al., 2019). However, an empirical psychological definition of positive solitude (PS) has only been offered recently. In phenomenological research to investigate what individuals do in positive solitude, Ost Mor et al. (2021) invited participants across most of the adult age range (18+ years) to write about the most significant aspects of their positive solitude. The scholars classified types of solitude based on participants' acts or objectives, such as stillness, spirituality, stress management, nature connection and recreational activities. The researchers emphasised that positive solitude experiences are characterised by choice and are particularly gratifying and significant for people. They defined positive solitude as the choice to dedicate time to a meaningful, enjoyable activity or experience conducted by oneself. This activity/experience might be spiritual, functional, recreational or of any chosen type, and might take place with or without the presence of others. It is independent of any external or physical conditions, yet, individuals have each their own setting for engaging in PS (Ost Mor et al., 2021, p. 15). This comprehensive definition describes prototypical positive solitude, including its conditions and consequences. It also distinguishes the positive form of solitude from negative forms, such as undesired loneliness and social isolation. Positive solitude is autonomously conducted and often pursued (Ost-Mor et al., 2021). Autonomous choice and enjoyable experience are the two main characteristics of positive solitude. This motivation could explain why more than half of Hong Kong people use public open spaces in solitary ways.

Based on the two main characteristics of positive solitude: autonomous choice and enjoyable experience, we can further discuss and understand why people want and what people like in positive solitude in public open spaces. Spending time alone in public can be explained as a combination of seeking individual privacy and participating in a collective sphere at the same time. Our universal need for privacy has been suggested not to be viewed as an absolute condition but rather a dynamic need that motivates individuals to seek optimum levels of interaction, as well as control over who has access to the individual (Pederson, 1997). Balance was suggested as a key role in solitude (Coplan et al., 2019). It may be influenced by whether solitude contributes a complementary or antagonistic role in our lives. In a balanced equation, solitude and social activities complement one another, and solitude feels advantageous, but an unbalanced equation can be disruptive to concentration and well-being. The ideal quantity of solitude may vary from person to person, but an environment that affords options for solitude and socialisation may be advantageous for everyone. (Weinstein et al., 2022).

Public environments may provide some benefits for people who want to spend some time alone, even though a shared space with the presence of other individuals sounds the opposite of an ideal

space for solitude. Exposing oneself to others in a public space means taking up place and accepting the presence of others. It offers an ambiguous situation of being alone with others without interaction. Social facilitation theory suggests that people sometimes show an increased level of performance as a result of the presence of others (Bond & Titus, 1983), such as one may receive a pleasant and content solitary experience in a public environment with the existence of other individuals who are also doing things solitary without any interaction.

According to social identity theory and social categorisation theory, an individual's self-concept is shaped by the social groupings or categories to which they belong, are associated with, and feel psychologically attached (Her & Seo, 2018; Mastro, 2003; Tajfel et al., 1979; Turner, 2010; K. White & Dahl, 2007). People who prefer to use public spaces alone may categorise themselves as a group and distinguish themselves from their counterparts who use the space collectively. A person who wants to enjoy a solitary experience in a public space may see other solitary visitors in that space as belonging to the same group. A group that a person belongs to is called an 'in-group', and a group that a person does not belong to is an 'out-group' (Escalas & Bettman, 2005). When people decide whether to engage in solitary activities in a public space, their group categories play a crucial role. Humans have an inherent desire for belonging (Baumeister & Leary, 2017). That desire may motivate them to continually seek connection and appropriate proximity with others (e.g., finding the 'in-group'), even though they may prefer to remain alone and not interact with other individuals.

This PhD research study will use two psychological theories to understand the factors that shape individuals' motivation to engage in, and their experience of, positive solitude in public open spaces. Self-determination theory (SDT) (Deci & Ryan, 2000) helps to explain an individual's motivation. This theory specifies intrinsic and diverse extrinsic sources of motivation and describes the relative roles of intrinsic and extrinsic motivation in cognitive and social development and individual variation. In addition to a person's well-being and performance quality, SDT also examines how social and cultural variables promote or inhibit a person's feelings of volition and initiative. SDT suggests that three factors affect a person's motivation: (1) autonomy, (2) competence and (3) relatedness. Conditions that promote an individual's feeling of autonomy, competence and relatedness tend to encourage the most volitional and high-quality kinds of motivation and engagement in activities (Deci & Ryan, 2000). PERMA theory (Seligman, 2011; Seligman, 2018) is a psychological framework designed to describe well-being. It also specifies the elements and aspects of allied design strategies. PERMA theory is based on five essential elements that suit public design: positive emotion (P), engagement (E), positive relationships (R), meaning (M) and accomplishment (A). These elements address the concept of positive affection ('happiness' in daily experience), which the theory authors consider to be important in mental and physical development. This study will combine SDT and PERMA theory into a theoretical framework to understand how designers can facilitate and improve users' experiences of positive solitude in public open spaces.

Spending time alone in public involves seeking individual privacy while participating in a collective sphere. In a densely populated urban context, residents tend to have limited space at home, and their social and solitary activities might have to expand into the public sphere (Law, 2002; Shi et al., 2014; Tieben, 2016). This fits the reported observation that most Hong Kong people use public open spaces alone. However, users' motivation to engage in and their experience of positive solitude in public open spaces have not been investigated. It is important to identify public open space designs that could better support residents' need for positive solitude.

Therefore, this PhD research will focus on the meaning of positive solitude in public open spaces in a densely populated urban context and will explore the role of public open space design in facilitating positive solitude and ensuring good user experiences.

3. Research Questions

This PhD research will address the following research question and sub-questions:

- Research question: What kinds of public open spaces in densely populated urban areas motivate people to engage in positive solitude and enhance their experience?
  - Sub-research question 1: How can positive solitude be facilitated in public open spaces?
  - Sub-research question 2: What shapes Hong Kong people's motivation to engage in positive solitude in public spaces and their experiences in doing so?
  - Sub-research question 3: What public open space designs encourage people to seek positive solitude in public spaces and enhance their experience?

4. Methodology and Research Plan

A mixed-methods approach involving quantitative and qualitative methods will be used in this research. Three studies in three phases are planned. Figure 2 shows the research plan, including the phases, objectives, methods, outcomes and studies.

The first phase will build our understanding of the meaning of positive solitude in public open spaces. Mixed methods will be used in Phase 1. First, a quantitative method, direct passive observation, will be conducted to document and understand people's solitary uses of public open spaces (how do people act?). Second, qualitative on-site interviews will be used to explore people's understanding of positive solitude in public open spaces (what do people think?).

The second phase will investigate the factors that affect Hong Kong residents' motivations to pursue positive solitude in public spaces and their experiences in doing so. A quantitative on-site questionnaire survey study will be conducted. Factor analysis and confirmatory factor analysis will be used to create a conceptual framework.

The third phase will generate specific recommendations and guides that encourage designers to create public open spaces that motivate and support people to experience positive solitude in high-density urban environments. Behaviour mapping will be used to document and confirm positive solitude activities in public open spaces. Spatial analysis and space syntax analysis will be used to document and analyse selected public open spaces using factors from the conceptual framework.
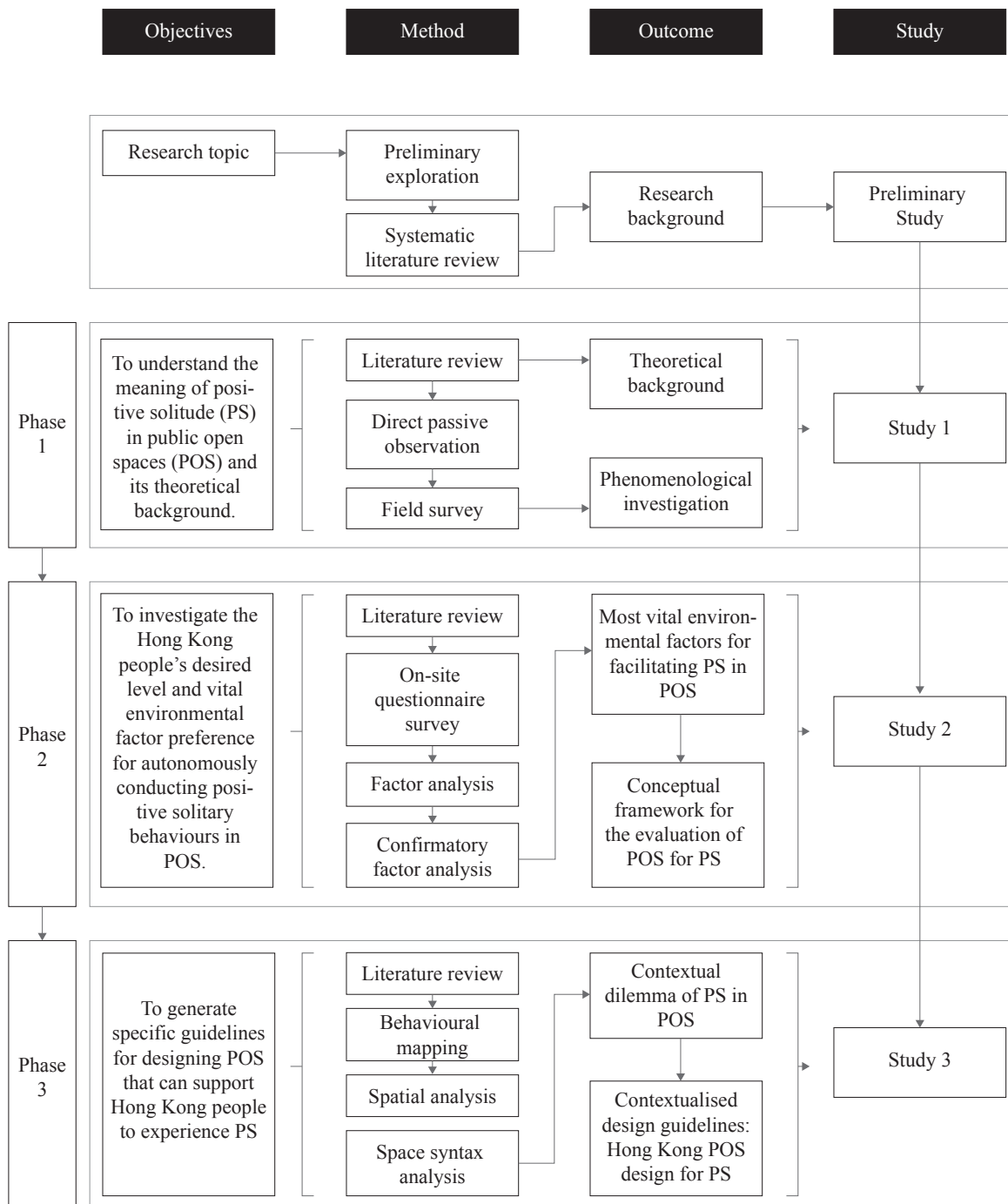
Objectives	Method	Outcome	Study

Research topic → Preliminary exploration → Systematic literature review → Research background → Preliminary Study

Phase 1

To understand the meaning of positive solitude (PS) in public open spaces (POS) and its theoretical background.

Literature review → Theoretical background

Direct passive observation

Field survey → Phenomenological investigation

Study 1

Phase 2

To investigate the Hong Kong people's desired level and vital environmental factor preference for autonomously conducting positive solitary behaviours in POS.

Literature review

On-site questionnaire survey

Factor analysis

Confirmatory factor analysis

Most vital environmental factors for facilitating PS in POS → Conceptual framework for the evaluation of POS for PS

Study 2

Phase 3

To generate specific guidelines for designing POS that can support Hong Kong people to experience PS

Literature review

Behavioural mapping

Spatial analysis

Space syntax analysis

Contextual dilemma of PS in POS → Contextualised design guidelines: Hong Kong POS design for PS

Study 3

Figure 2. The research plan

5. Conclusion

This PhD research will provide a new perspective on public open space design for positive solitude in densely populated urban contexts. Focusing on Hong Kong as a case study, it will provide a contextualised understanding of positive solitude in public open spaces, create a conceptual framework of users' motivation to pursue positive solitude in such spaces and their experiences in doing so, and explore of the role of design in providing spaces that cater to users' solitary needs. Detailed design recommendations and guides will be developed as part of the research. These recommendations could improve people's experiences of positive solitude in public open spaces in Hong Kong and other dense urban contexts. In a wider sense, this research will enhance our

understanding of people's solitary needs in the public sphere and will help to ensure that public open space designs cater to the diverse needs of users.

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