Public Life and Space of Petaling Street: Reading the Mutable Street from Socio-Spatial Perspectives

Veronica Ng[1*], Jean Kian[1]

[1] School of Architecture, Building and Design, Taylor's University, MALAYSIA.
*Corresponding Author (Tel: +60-356295000. Email: ng.foongpeng @ taylors.edu.my).

Abstract

The changing streetscape of Malaysian cities is a reason to conduct a study on liveability and place identity. However, these studies tend to isolate social space investigations to either ecological environments or persons' psychology. This research takes Petaling Street as a case study to investigate its socio-spatial dimensions. It scrutinises prior and current socio-spatial theories for urban field analysis which are largely Western-centric and may not relate to Asian spaces. Therefore, it seeks to fill a research gap by analysing an Asian pedestrianised street based on an integrated framework of prior and current socio-spatial perspectives. This study adopts a case study research method for the advantage of being able to focus on the embeddedness of the case in the context of society and space. The research objectives were answered using thematic analysis on secondary data of socio-spatial concepts in urban field studies, and a short ethnographic study of Petaling Street. This research finds significance in documenting an Asian pedestrianised street, scrutinising Western-centric concepts' applicability onto an Asian street, and expanding upon existing Malaysian public life and space studies. Findings reveal eight key socio-spatial attributes public life and space that define a pedestrianised Asian street and the challenges of adopting a single socio-spatial perspective in urban field analysis.

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1. Introduction

Using Petaling Street's case, this paper aims to define the socio-spatial attributes of Asian Street that frames it as a public space and a site for public life. The study arises from the urgency in

studying Asian streets that are socially contested and disappearing as a public space due to urbanisation.

Pioneered by Jacobs (1961), Gehl and Koch (1987) and Whyte (1980), street liveability became an essential topic of research in the face of urban renewal. Emerging Asian perspectives are similarly focused on the "street" as a significant constituent to public life (Jacobs, 2010). The Asian street is unique as it is characterised by mobility and flexibility, with a higher intensity of temporary usage than that in Western countries (Douglass & Deniere, 2008). The Great Asian Streets Symposium in 2001 highlighted the dire lack of truly Asian perspectives and the quickly "disappearing" Asian streets which are under the assault of rapid urban transformation (Heng et al., 2010).

Within Malaysia, streets may be determined by the predominant human activities that occur within them. Therefore, they are categorised as civic, commercial, residential, pedestrian, and a hybrid of commercial and residential (Shamsuddin & Sulaiman, 2010). Located in the capital city of Kuala Lumpur, Petaling Street is renowned for its hawker activities and may, therefore, be categorised as a pedestrian street. Many have studied Petaling Street within the realm of socio-politics, but few have investigated its socio-spatial dimension (Peng, & Ng, 2018; Khoo, 2017; Duruz & Khoo, 2014; Lim, 2014; Loo, 2012; Choo, 2011; Heng et al., 2010).

Existing Malaysian research on public streets focus on either the social or spatial aspects and tend to arrive at oversimplified solutions to socio-spatial issues. Petaling Street brings with it contexts of racialised space and politicised urban strategies which relate to the identity and liveability discourse that is popular in Malaysian studies on public life and space (Sulaiman et al, 2017; Mahmoudi et al., 2015; Rahman et al., 2015; Shamsuddin et al., 2012) or identity (Ujang, 2016; Harun et al., 2015; Harun & Said, 2010; Shamsuddin & Sulaiman, 2010). Research on liveability investigated the physical and tangible attributes of public streets that contribute to walkability. In contrast, research on identity has identified the more intangible attributes of public spaces that contribute to a sense of emotional attachment. However, by isolating social space investigations to either the "operations of ecological environments" or the "psychology of persons", these studies tend towards design solutions that can be oversimplified or incomplete when dealing with inherently complex socio-spatial issues.

Prior and current socio-spatial theories for urban field analysis are largely Western-centric, which may not be useful for Asian spaces. Barker's (1968) "behaviour settings" theory is one of the earliest examples which was criticised for its limitations in dynamic contexts (as cited in Scott, 2005) such as for mutable and indeterminate spaces which characterise the Asian street (W. W. Lim, 2014; W. Lim, 2008). Few studies have looked into more adaptable concepts to frame everyday life in public space. In recent decades, Karrholm and Atelier Bow-Wow have proposed theories that look at public space as a multi-layered landscape of "territories" and "commonalities".

Taking these as points for departure, this paper analyses Petaling Street from socio-spatial perspectives of behaviour settings, territories and commonalities. As buildings have grown more

significant, more introspective and self-sufficient today, public space has become an increasingly important research topic in the interest of sustaining versatile, exciting and safe cities. This research finds significance in documenting an Asian market street to expand the current theoretical discourse on Asian public life and space. It contributes to knowledge transferable to architectural practice in terms of urban design solutions. For Petaling Street stakeholders, this contributes to a deeper understanding of their relationship with the place, which may be useful for future social interventions in the locality.

2. Literature Review

2.1 Public Life and Space of the Asian Street

The study of public life in cities was pioneered by Jacobs (1961), Gehl & Koch (1987) and Whyte (1980), in their seminal works entitled, "The Death and Life of Great American Cities", "Life between Buildings" and "The Social Life of Small Urban Spaces" respectively. All three authors emphasised the importance of street liveability in the face of urban renewal. Similarly, emerging research on Asian cities also focused on the "street" as a significant constituent to public life (Jacobs, 2010). However, the Asian street is unique as it is characterised by mobility and flexibility. In recent decades, Asian perspectives have highlighted a remarkably complex public space model compared to the Western model (Chalana & Hou, 2016; Lim, 2014; Heng, 2010; Lim, 2008). Unlike in the West wherein public life culminates in a central public square, the Asian centre is said to be "empty" as public life is dispersed along streetscapes with horizontal depth and spatial complexity (Lim, 2008).

Furthermore, the Asian public space is perceived as being more informal and spontaneous with a higher intensity of temporary usage than that in Western countries (Hou, 2016; Douglass & Deniere, 2008). The notion of an "Asian City" was probed at The Great Asian Streets Symposium (2001), in which four themes were identified, comprising of "historical development", "street culture", "street experience" and "street design". These essays highlighted the dire lack of truly Asian perspectives and the quickly "disappearing" Asian streets under the assault of rapid urban transformation (Heng et al., 2010).

Within Malaysia, streets may be determined by the predominant human activities that occur within them. Therefore, they are categorised as civic, commercial, residential, pedestrian, and a hybrid of commercial and residential (Shamsuddin, & Sulaiman, 2010). Located in the capital city of Kuala Lumpur, Petaling Street is renowned for its hawker activities and may, therefore, be categorised as a pedestrian street. Many have studied Petaling Street within the realm of socio-politics, but few have investigated its socio-spatial dimension (Peng & Ng, 2018; Khoo, 2017; Duruz & Khoo, 2014; W. W. Lim, 2014; Loo, 2012; Choo, 2011; Heng et al., 2010). Petaling Street brings with it contexts of racialised space and politicised urban strategies which relate to the identity and liveability discourse that is popular in many Malaysian studies on public life (Sulaiman et al., 2017; Mahmoudi et al., 2015; Rahman et al., 2015; Shamsuddin et al., 2012) or identity (Ujang, 2016; Harun et al., 2015; Harun & Said, 2010; Shamsuddin & Sulaiman, 2010).

The changing streetscape of Malaysian cities induced by rapid urbanisation was catalytic to liveability studies and place identity as traditional streets have undergone substantial physical transformations. Research on liveability investigated the physical and tangible attributes of public streets that contribute to walkability. In contrast, research on identity in the context of Norberg-Schulz's place theory has identified the more intangible attributes of public spaces that contribute to a sense of emotional attachment. However, by isolating social space investigations to either the "operations of ecological environments" or the "psychology of persons", these Malaysian studies tend towards design solutions that can be oversimplified or incomplete when dealing with inherently complex socio-spatial issues.

The society and space "do not simply interact but ceaselessly prolong into each other" (Karrholm, 2007; Brighenti, 2010; Dessein et al., 2015). Stemming from Lefebvre's (1991) theory of social space, a socio-spatial perspective to urban analysis acknowledges that an environment shapes and is shaped by human agency. Therefore, the public street may be analysed beyond its traditional role as a passive setting for historical action, but as a significant product and determinant of change in the 'performance' of public life (Jacobs, 1961; Bodenhamer, 2015). Nevertheless, prior and current socio-spatial concepts remain Western-centric, which may not be useful for Asian spaces.

Many socio-spatial theories have emerged over the years, but only a few of them were found to have been used in urban field analysis. Barker's (1968) "behaviour settings" theory is one early example used to study human behaviour in its environment. However, the theory has its limitations for application in dynamic contexts (as cited in Scott, 2005) such as for mutable and indeterminate spaces which characterise the Asian street (Hou, 2016; Lim, 2014; Lim, 2008). Few studies have looked into more adaptable concepts to frame everyday life in public space. In recent decades, Karrholm (2005) and Atelier Bow-Wow (2010) have proposed theories that look at public life and space as a multi-layered landscape of "territories" and "commonalities".

2.2 Socio-Spatial Theories for Urban Field Analysis

Barker's (1968) theory of Behaviour Settings suggests that there are consistent, prescribed patterns of behaviour in the environment (Barker, 1968; Scott, 2005), combining both the physical (milieu) and social (attached standing patterns of behaviour) elements of the environment into a single unit of analysis (Barker, 1968). However, more adaptable concepts for urban field analysis have emerged over the years since. This research has identified two key contemporary socio-spatial theories of urban field analysis that have evolved from Behaviour Settings, in the form of Karrholm's (2005) Territorial Productions and Atelier Bow-Wow's Behaviourology (Nango, 2010).

As the Behaviour Settings perspective relies on the specificity of a milieu and standing pattern of behaviour easily recognised by its inhabitants, it was criticised for its limitations for application in dynamic contexts, such as indeterminate spaces and time (Barker, 1968; Scott, 2005; Heft, 2013). Therefore, this study selected Karrholm's (2005) conception of Territorial Productions

as it looks beyond the visible and defined physical space in its analysis. In contrast, Atelier Bow-Wow's theory of Behaviourology (Nango, 2010) examines the intangible aspects of memories and temporal events. Public life and space may, therefore, be analysed in terms of "behaviour settings", "territories" or "commonalities", with each concept having its own unique set of principles.

Another criticism called for Barker's theory to consider a broader perspective of a Behaviour Setting's context, to consider the networks between settings (Heft, 2013). Therefore, this study looks at Territorial Productions, which offers a socio-spatial perspective of public life and space beyond the site of interest itself, by tracing networks of material (human and non-human) actants. On the other hand, Atelier Bow-Wow's theory of Behaviourology offers a perspective on the flows of nature, the built environment and humans, instead of presumed boundaries, uniting elements that cut across attributes and categories (Nango, 2010).

The "agents" responsible for producing social spaces have also evolved beyond "environment" and "human" as evident through the Behaviour Settings lens. According to Karrholm, although territorial production constitutes and is constituted by the physical environment, its agency is further extended to invisible actants such as rules, regulations and norms (Karrholm, 2007; 2008). Whereas, Behaviourology looks at the movements of natural phenomena such as light, wind, rain, and plants, in addition to humans and artefacts, placing them on an equal footing to serve as agents of spatial practice (Nango, 2010).

2.2.1 Behaviour Settings

Scott (2005) explained that a behaviour setting has four main characteristics (see Figure 1), the most important being its extra-individual nature. His study means that behaviour settings exist regardless of people's perception of it, with a precise and defined spatial and temporal specificity. It also means that settings exert a more decisive influence on collective human behaviour despite the variety of individuals participating in the same setting.

Each behaviour setting's set of components has a more substantial degree of interdependence than with other components regarded as not part of the setting (Barker, 1968; Scott, 2005) because the physical characteristics of each milieu are synapomorphic with its humanitarian activities. The synapomorphy of a setting's behaviour-milieu has been analysed to Gibson's theory of affordance, as it looks at dynamic perceiver-environment relationships (Heft et al., 2014).

Thirdly, behaviour settings self-regulate through four 'circuits'. The first 'goal circuit' specifies the setting's goals, whereas the second 'program circuit' specifies behaviour by which the goals may be met (Barker, 1968; Scott, 2005). A third 'deviation countering circuit' corrects any failing component. Should that fail, the component may be eliminated as part of the fourth 'vetoing circuit'. Therefore, Settings self-orient and organise the behaviour of the human components toward a state of equilibrium of the setting.

Fourth, humans play two distinct roles in a behaviour setting (Barker, 1968; Scott, 2005). On the one hand, humans respond to cues from the environment, whereas on the other, humans as

components of the environment emit cues for the behaviour of others. People in a behaviour setting have defined operational rules as responders and components of the environment.

2.2.2 Territorial Production

Territories are not predefined, but traced as a "network" of associated human and non-human actants, comprising of material actants (Latour, 2005) in the form of rules and regulations, interacting people, artefacts, and so forth (Karrholm, 2007; 2008). These actants mark a specific behaviour that reveals the borders of a territory (Karrholm, 2008). As more actants work together, the "network" prescription becomes stronger (Karrholm, 2008). A sub-territory may form within a territory as more mobile material actants become fixed and obligatory to the "network" (Karrholm, 2008). In a "network", actants may support the territory both externally and internally (Karrholm, 2008).

Territorial "bodies" represent firm, material, and embodied actants such as humans, walls, signpost, and so forth (Karrholm, 2007; 2008). Some bodies mediate constant effects, although mobilised in different networks due to their limited affordances (Karrholm, 2007; 2008). These stable bodies can stabilise a territory even when other actants are absent (Karrholm, 2007; 2008). Some territories are more dependent on form's stability than the network (Karrholm, 2007; 2008). However, bodies in the form of objects may also be used in ways that undo their support (Karrholm, 2007; 2008).

A territory can also be produced through "framings" in the form of actants absent within the territory itself, yet formative of its present qualities (Karrholm, 2008). For example, a new housing area and a parking lot located next to a pedestrianised territory supply shoppers to support it. Here, territorial production's strength depends on an incoherence between the territory and the stabilising frame (Karrholm, 2008). The effect of territorial framing is dependent on many facilities that are impossible to be located within the territory (Karrholm, 2008). If some network actants are lost, the territory may remain effective due to its supporting frame (Karrholm, 2008).

Territorial "sorts" represent actants associated with a particular configuration of artefacts or the sense of a certain atmosphere that legitimise a specific rule of conduct (Karrholm, 2007; 2008). Actants might be replaced or absent, causing the network to be transformed, but the territory may remain effective if it can still be associated with the same territorial "sort" (Karrholm, 2007; 2008). A territorial sort is a kind of fluid topology; a family of possible network actants producing similar territorial effects (Karrholm, 2007; 2008). They can spread and take on connotations and make connections freely (Karrholm, 2007; 2008).

2.2.3 Behaviourology

According to Atelier Bow-Wow, the word "behaviour" specifies human actions, natural phenomena caused by elements such as light, air, heat, wind, and water, and the built environment's behaviour (Atelier Bow-Wow, 2009; Nango, 2010; Tsukamoto, & Kaijima, 2013;

Matsuoka, 2014). Humans, nature and buildings do not only undergo "behaviour", but they also enable other "behaviour" into being (Matsuoka, 2014).

"Behaviour" can be defined as a movement (Matsuoka, 2014). When viewed as something existing in time, even a seemingly stationary structure is seen to be ever-changing over a considerable time scale (Matsuoka, 2014). According to Atelier Bow-Wow, human behaviour and the behavioural patterns of heat, light and wind concerning buildings can be observed within an interval of a day, human social behaviour in a week, collective mass behaviour a year, and building behaviour in urban contexts in the span of 30 to 50 years (Atelier Bow-Wow, 2009). In this case, "behaviour" is a custom of involvement or a norm that has been quietly internalised in a specific place (Nango, 2010; Matsuoka, 2014). Atelier Bow-Wow argued that it is something shared, that no person can exclusively possess because the genuine fun and vitality of commonality cannot be experienced privately by a lone individual (Matsuoka, 2014).

Consequently, "behaviour" is expressed as an experience of physical being that is not found in individual consciousness or psychology (Matsuoka, 2014). Therefore, this "behaviour" can be understood as a collective and common action carried out by a group of people. For example, it may refer to a community's communication manner to the way their sidewalks or shelves are utilised.

2.2.4 Framework for Analysis

Analysis of case study was framed by three sets of socio-spatial perspectives, highlighting different principles and agents of space production. Criticisms of Barker's (1968) theory of Behaviour Settings have informed the selection of two contemporary socio-spatial concepts, namely Karrholm's (2005) Territorial Productions and Atelier Bow-Wow's Behaviourology (Nango, 2010) as described in previous sections.

Table 1: Socio-spatial perspectives used in the study.

Theory/ Background	Behaviour Settings	Territorial Production	Behaviourology
Author	Barker, 1968	Karrlholm, 2005	Atelier Bow-Wow, 2010
Discipline	Psychology	Sociology	Anthropology
Realm of field analysis	Public space in America; small town	Public space in Europe; low-density city	Public space in Asia; high-density city
View of Space	There are consistent, prescribed patterns of behaviour in space	Space constitutes of a territorial complexity	Space supports behaviour and takes shape in connection with behaviour

The Behaviour Settings perspective identifies concepts such as "extra-individual", "synapomorphy", "self-regulation" and "two distinct human roles", to analyse people and their physical environment. Whereas, the Territorial Productions perspective identifies "networks", "bodies", "sorts" and "framings", to analyse "actants" in the form of people, artefacts and immaterial artefacts such as rules, norms and laws. In the third perspective, Behaviourology identifies "collective rhythms" to analyse people, buildings and nature.

3. Method

A case study method was adopted to accomplish the aim of this research. A case study is defined as an "empirical inquiry that investigates a phenomenon or setting" (Groat & Wang, 2013). This research assumes an intrinsic case study, wherein the aim is to understand better a particular case (Groat & Wang, 2013). It also allows for reproducibility of results to study other Asian streets in terms of a socio-spatial perspective. The strength of adopting this methodology is to focus on the embeddedness of the case in its context. It provides a multitude of data sources in which the challenge, however, lies in organising them coherently.

A method of the thematic analysis of secondary data sources such as books, videos and journal articles relating to socio-spatial concepts of urban field analysis was employed to analyse principles of framing public life and space from socio-spatial theories. The data was collected during a short five-day ethnographic study of Petaling Street, based on an empirical investigation, covering Saturday to Wednesday during an ordinary (non-festive) week. The ethnographic study includes living in one of the buildings (Lantern Hotel) along Petaling Street and carrying out structured observations. For five days, Petaling Street was traversed from one end to the other at intervals of 6 am, 9 am, 3 pm, 6 pm and 10 pm daily. Photography is a method of observing public life, and it was employed to assist in recording data during site visits.

According to Atelier Bow-Wow, human behaviour and the behavioural patterns of heat, light and wind with buildings can be observed within an interval of a day, human social behaviour in a week, collective mass behaviour a year, and building behaviour in urban contexts in the span of 30 to 50 years (Nango, 2009). Therefore, secondary data sources such as news articles, state publications and journal articles were reviewed to complement the five-day ethnographic study for this research due to timespan concerns. Over 200 news articles were reviewed from the Star, a national newspaper available on the internet and archive materials such as maps and articles sourced from the Kuala Lumpur and Selangor Chinese Assembly Hall (KLSCAH) were used to inform findings for this research.

4. Result and Discussion

4.1 Results: Attributes Defining Petaling Street Through Socio-Spatial Perspectives

The analysis of Petaling Street through the framework revealed eight socio-spatial attributes (Table 2). The attributes uncovered comprise of "people", "programme", "operating hours", "site objects", "surroundings", "invisible entities", "nature" and "history". The contemporary concepts of Territorial Productions and Behaviourology cover additional attributes (compared to Behaviour Settings) in the form of "surroundings", "invisible entities", "nature" and "history", with the former lacking a discussion of "history"." In contrast, the latter lacks discussion of "invisible entities".

Table 2: Results showing eight (8) socio-spatial attributes.

Theory/Petaling Street Attributes	Behaviour Settings	Territorial Production	Behaviourology
People	People as "environment" are hawkers who emit cues for visitors as "responders" within a set of homogenous market behaviour.	People are "actants" whose relationship with other "actants" form territorial sorts that prescribe different behaviour sets.	People are individual persons with unpredictable behaviour who play active roles in changing their environment.
Programme	Easily recalled as Chinatown KL in the locality.	Associated with "Chinese market", "bootleg market", "night market" and a "red-light area."	Described as flows of retail and cultural events
Operating hours	Defined from 9 am to 12 am daily.	Depending on which territorial sort is being stabilised at the moment	Peak periods in the early morning, at night, on weekends and early in the year
Site Objects	Coded vehicular road; Plastic & clay-tile canopies; Entrance gates; signposts	Includes additional artefacts such as the DBKL office and washrooms, smooth pavements and the five-foot-ways of shophouses	Clay-tile canopies; hawkers stalls
Surroundings	Relatively irrelevant. Described only in relation to synapomorphy of behaviour and milieu	Surrounding structures (roads, shophouses, residences, pedestrian crossings, car parking, transport hubs) are network actants or network frames that stabilise Petaling Street territories.	Surrounding events (Pasar Karat, wet market) affect movement within Petaling Street.
Invisible entities	Relatively irrelevant	DBKL, advertisements of Petaling Street, norms and rules are network actants that stabilise territories within Petaling Street	Relatively irrelevant. Norms and rules perceived about the collective people movement within Petaling Street.
Nature	Relatively irrelevant. Described only with the failure of setting component	Relatively irrelevant. Described only with the failure of territorial bodies	Variations in presence and degree of daylighting (heat) and rainfall affect movement in Petaling Street
History	Relatively irrelevant	Relatively irrelevant	Change in the demographics of local people and the urban morphology of Petaling Street

Behaviour Settings identifies "people" as the "hawkers" of Chinatown KL who emit cues for "visitors" within a set of homogenous market behaviour. Territorial Productions, however, regards "people" as "actants" whose relationship with other actants form territorial sorts that prescribe different sets of behaviour within the same space, whereas Behaviourology perceives "people" as individual persons with unpredictable behaviour who play active roles in changing their environment, producing various circumstances for unique "experiences" within the same space.

The "programme" of Petaling Street as a behaviour setting is defined as "Chinatown KL", with "operating hours" defined from 9 am to 12 am daily. However, Petaling Street is at the same time associated with a variety of programs apart from "Chinatown", such as "Chinese market", "bootleg market", "night market" and a "red-light area" as understood from a Territorial Productions perspective, with multiple and relative "operating hours" that depends on which territory is being stabilised at the moment. In terms of Behaviourology, Petaling Street's "programme" was described as flows of events, with peak periods in the early morning, at night, on weekends and early in the calendar year.

Petaling Street's "site objects" that define Chinatown KL's boundaries as a behaviour setting include the coded vehicular road, the plastic & clay-tile canopies, the entrance gates and signposts

which all directly accommodate the street market programme. From the Territorial Productions perspective, they include additional artefacts such as the DBKL office and washrooms, smooth pavements, and the five-foot-ways of shophouses described as network actants work with other actants to produce various territories within Petaling Street. However, a Behaviourology perspective on "site objects" identifies elements such as the clay-tile canopies and hawkers stalls that transform over time as people appropriate them.

Petaling Street's "surroundings" are relatively irrelevant to discussing its behaviour settings as surrounding vehicular roads were described only about the synapomorphy of behaviour and milieu. The Territorial Productions perspective encapsulates Petaling Street's surrounding structures to include roads, shophouses, residences, pedestrian crossings, car parking, transport hubs that work as its network actants or framings stabilise various territories within it. The Behaviourology discussion captures surrounding events such as the Pasar Karat and wet market activities that affect behaviour within Petaling Street.

Petaling Street's "invisible entities" are absent in both Behaviour Settings and to a certain extent, the Behaviourology perspectives. Norms and rules perceived concerning collective people movement within Petaling Street, and not specified. On the other hand, the "invisible entities" of DBKL, Petaling Street advertisements, norms and rules are recognised as network actants that stabilise territories within Petaling Street in the Territorial Productions discussion.

"Nature" as an attribute of Petaling Street was highlighted only in the Behaviourology perspective in the form of daylighting and rainfall affecting people's behaviour. This attribute is relatively irrelevant in the discussion of Behaviour Settings and Territorial Productions. It was described only with the failure of setting the component or territorial bodies' failure in both perspectives.

Similar to Petaling Street's attribute of "nature", "history" is absent in Behaviour Settings and Territorial Productions discussions. However, the Behaviourology perspective highlights changes in the demographics of people and the urban morphology of Petaling Street over time. It reveals the intangible aspect of the locality's collective memories and emotions that guide present and future behaviour.

4.2 Discussion of Results

In response to Malaysian studies where physical issues such as "improper walkway paving" and inadequate public services" due to a lack of infrastructure maintenance in the city are "deteriorating the liveability of streets" (Mahmoudi et al., 2015; Shamsuddin et al., 2012), this study finds that it is not the condition of urban structures that seem to determine liveability, but it is the allowance for user-appropriation and negotiation of those structures that make them attractive as places to inhabit. The attribute of "site objects" from the Behaviourology perspective reveals the behaviour of user-appropriation in Petaling Street which contributes to a sense of

liveability, in which the street becomes attractive for use as people are allowed to manipulate their surroundings based on their ever-changing needs.

On the other hand, where "place identity" is found to be cultivated through the provision of "spaces for social and cultural transactions" that induce "place attachment" (Ujang, 2016; Ujang, 2012), this study finds that it is not the provision of space for social and cultural transactions that determine the degree of place attachment and identity. Still, it is the same allowance for user-appropriation and negotiation of those structures that produce multiple, fluid and indeterminate identities of place. The attribute of "programme" from the Territorial Productions perspective reveals the diversity of place attachments and notions of identity within Petaling Street where it is associated with territorial sorts of "Chinese market", "bootleg market", "night market" and a "red-light area" apart from "Chinatown".

This study demonstrates that the two concepts of "liveability" and "place identity" are intrinsic to one another. Therefore, it argues that urban spaces should be studied through the lens of a socio-spatial perspective. However, results also show that the three socio-spatial perspectives exemplify an evolution of our understanding of time-space (Harvey, 2005), from Behaviour Settings to Territorial Productions to Behaviourology, in which the time and space of Petaling Street may be understood as singular and absolute, multiple and relative, or indeterminate and relational, all at once. It means that all three views are valid and useful for different purposes in urban design interventions and practices. It also proves the importance of a socio-spatial-temporal perspective in studying public life and space.

Table 3: Strengths and weaknesses of the socio-spatial perspectives.

Theoretical Perspectives	Behaviour Settings	Territorial Production	Behaviourology
Strengths	Clarifies hierarchy of programme and boundaries of place	Clarifies hierarchy of spatial claims (territorial bodies)	Accounts for nuances of experience (flow of events)
	People behaviour can be predictable with affordances of setting.	Accounts for programmes that are less obvious (territorial sorts)	Historical knowledge informs the present-day movement.
	The shorter time needed for field analysis	Accounts for invisible entities	Accounts for natural phenomena
Weaknesses	Lacks account of the surrounding context	Vague limit to scope networks and time scales	
	Lacks account of sensory experience		Longer time needed for the ethnographic study

5. Conclusion

Where prior and current socio-spatial concepts for urban field analysis are largely Western-centric and may not relate to mutable Asian spaces, this study has scrutinised Western-centric concepts' applicability onto a type of Asian street. Findings show that the contemporary Western

concept of Territorial Productions is highly relevant to the framing of an Asian pedestrianised street typified by Petaling Street. However, it still lacks an account of the "history" attribute, in which collective memories of a community of people give logic and understanding to an indeterminate physical public landscape.

In response to the call of documenting Asian streets which are "disappearing" due to urbanisation and the investigation of Petaling Street from a socio-spatial dimension, this research has documented Petaling Street from socio-spatial perspectives which extends the body of knowledge of existing research on Malaysian public space and life. To conclude, there are eight defining social-spatial attributes to Petaling Street's public life and space, which may guide place-based analysis in the design process of architecture practice. However, findings point to the difficulty of adopting a single socio-spatial perspective in urban field analysis at the risk of ignoring other important aspects of user-experience that are nested in a complex web of relations. Furthermore, findings reveal the importance of a socio-spatial perspective and a socio-spatial-temporal perspective in studying public life and space.

As ways forward, this research may be extended with the framing of other types of Asian streets in terms of socio-spatial perspectives to strengthen or challenge results from this study. Further research into the specificity of socio-spatial attributes and their roles in the design process is also recommended.

6. Availability of Data and Material

Data can be made available by contacting the corresponding authors.

7. Acknowledgement

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Dr.Veronica Ng is an Associate Professor at the School of Architecture, Building and Design, Taylor's University. She completed her PhD from Curtin University with the thesis titled Rethinking Place: Architecture and the Histories of Place. Her area of interests are in Place-Identity and Sense of Place, and Contemporary Malaysian Architecture and Typologies.

Jean Kian studied Architecture at Taylor's University Malaysia. Her research interests include the Urban Public Realm, Asian Spaces, and the Tropical Climate.