Environmental features and sense of safety

R. Ratnayake
*Department of Archaeology, Environment and Community Planning,
La Trobe University, Bendigo Campus, Australia*

Abstract

This paper reports on a study that examined the degree environmental features contribute to a fear of crime among university students in a regional city context. It informs how environmental and social features jointly influenced a fear of crime in relation to the subjective experience of individuals' identifiable characteristics, which for this study, comprised of students with either domestic or international Asian status. The study utilised self-reporting walk and auto-photo elicitation to analyse feelings of safety at different sites across the Central Business District of Bendigo, Victoria. The findings indicate students are more likely to express higher levels of fear about crime in public places at night when the design of those areas provide for lower visibility, more spaces for concealment, and lower numbers of people in close proximity
Keywords: CBD, environmental design, fear of crime, university students.

1   Introduction

Fear of crime in relation to personal safety can have detrimental effects on the health and well being of individuals as it can significantly limit their freedom of choice by negatively influencing their individual walking patterns through space. Perceptions of crime may restrict individuals' ability to participate in outdoor and leisure activities, thus contributing to their dissatisfaction with public spaces and neighbourhood places, and ultimately with life in general. At the societal level, the fear of crime may unfairly place some individuals at a further social and economical disadvantage because they may already not have sufficient resources with which to protect themselves or to move from high crime areas. Researchers of planning and design principles have borrowed from various fields such as sociology, politics, criminology and environmental psychology in order to better understand the complex dynamic of people's sense of safety and

space/place. However, less is known about how environmental clues impact upon people's perception of personal security in a live environment within a regional city context. Using a comparative study between domestic Australian students and international Asian students as a focus for discussion, the intention of this paper is to explore the influence of physical and social environmental clues on the students' sense of safety in the Central Business District (CBD) of a regional city in Australia.

In the context of Australian metropolitan and regional cities, international student and migrant populations have increased dramatically over the last 10 years [1], and expectations are that growth will continue. Unfortunately recent, highly publicised incidents suggest that visible minorities in Australia experience structural racism and personal attacks in public spaces. To ensure future economic growth, the safety and well being of international student and multicultural populations have become increasingly important within the education and wider sectors. In recent times, there has been considerable research focusing on safety in Australia, although it tends not to distinguish between country of birth, and year of arrival in Australia.

Research findings highlight that feelings of insecurity in public spaces, particularly at night, are a significant issue for many people. According to the Australian Bureau of Statistics (ABS) Crime Victimization Survey of 2008, over four million adults, or 26 percent of those aged 18 years and over, reported feeling unsafe at night when they were alone and either walking in their neighbourhood or using public transport [2]. Community Indicators Victoria (CIV) results indicate geographical differences may influence people's perception of safety, with about 70 percent of persons indicating they feel safe while walking alone at night in the Bendigo local government area, compared to 64 percent in the Melbourne metropolitan area [3]. In contrast to the CIV data, one study found that a considerable number of Bendigo residents felt unsafe to walk alone in the Bendigo CBD (Pall Mall area) [4]. It has been also revealed that many international students feel unsafe in public places in Melbourne metropolitan area [5].

To date, less is known about the feelings of safety and security of international university students and domestic university students in public spaces in regional cities. This lack of data creates a problem for local authorities in regional areas, and is compounded by a paucity of data about the influence of features of the built environment, particularly on feelings of safety in urban settings in Australia. It is the primary responsibility of local authorities to design and manage urban spaces, and therefore create the kind of environments that are attractive to international students and migrants. Decisions such as where public spaces will be located, how parks, open spaces, markets, and bus stations look, and what features will be included, will ultimately be determined by urban planners and designers. Gaining knowledge about how different environmental settings and social variables act together to influence people's feelings of safety, particularly at night in public spaces, and the experience of people in these spaces is integral for planners and planning practice.

A good deal of the research informing general knowledge about feelings of safety and security in urban spaces comes from fear of crime literature. Fear of crime is an emotion associated with the possibility of something could happen, and refers specifically to crime related situations. According to Ferraro, 'fear of crime is an emotional response of dread or anxiety to crime or symbols that a person associates with crime' [6]. According to Blumer [7], who takes a symbolic interactionist approach to understanding the world, the meanings of these symbols are simultaneously embedded within the physical and social environment, and are personally and socially contested and negotiated. Therefore, the environment and its symbols can alter with physical changes, personal meanings, experiences and familiarity, evolving social meanings, and public discourses.

Personal and social symbols of the environment, and how these relate to feelings of fear of crime, may be dependent upon the gender identity of an individual. Many researchers confirm that females feel significantly less safe than males when they walk at night time [2, 8, 9]. This may result in females behaving differently in space at different times of the day. Some commentators suggest women's fear tends to centre on gender differences in societies where women are socialised to be more passive and dependent [10]. Whereas others argue that women's safety, or fear, is associated with environment and experiential factors such as experiences with sexual harassment in public and semi-public environments by strangers [11, 12]. In a similar vein, Smith [13] argued that individuals who are alienated and marginalized from society experience a sense of powerlessness.

Ferraro [6] suggested that individual risk and fear of crime are associated with Symbolic Interactionism Theory, especially as fear of crime is likely to be associated with neighbourhood incivilities and other environmental and social clues. This theory claims that people live within symbolic environments and people act towards things (physical and social objects) because of the personal and social meanings attached to them. Meanings are based on the course of interactions among people in a mutual environment [6]. As Blumer [7] suggests, human beings act toward things on the basis of the meanings that things have for them. The material objects in the environment have expressive meaning and people everyday read the environment indices of material designs through the articulation of their desire with expressive symbols or images. Based on the above ideas, the next section of this paper relates to environmental images or clues that generate fear.

2   Environmental clues and sense of safety

The relationship between environmental conditions and fear of crime has been studied in environmental criminology, city planning, urban design and architecture over the last few decades. Goffman [14] proposed that individuals constantly look for other social clues in the surrounding area when they are in threatening situations. In this regard, the presence of people can act as a sign that supports a confidence in people who use spaces, particularly at night [15]. While
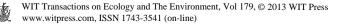
some studies have focused on how fear of crime is related to potentially threatening individuals, Warr [16] and Whyte's [17] findings about urban parks and public spaces show that the presence of people can encourage feelings of safety. Similarly, [15] observed that students felt fearful in the absence of people when walking at night in a campus setting.

Building on Goffman's ideas, some researchers have shown that certain signs or clues within the environment evoke fear [10, 16]. Warr [16] has shown that familiar environmental settings improve feelings of safety while novel environment spaces may generate fear. In this case, familiarity of the settings acts as a sign that improves spatial confidence. Broken Windows Theory is another theory that explains the fear of crime in relation to macro environmental features [18]. Broken Window Theory predicts that if a building has a broken window and is left unrepaired, the other windows will be broken as people think that no one cares. The key idea of this theory is that disorderly area or neighbourhoods may create a sense of fear among residents who in turn may avoid such places.

Others have studied how micro-level features of the environment influence individuals' environmental preferences and subsequently their behaviour across spaces. Appleton [19], for example, argued that places offering both prospect and protection help individuals and groups to observe potential animate hazards (offenders), to react and defend from potential dangers and, therefore, such places might enhance a sense of safety. In a similar manner, Nasar and others [15, 20] showed that the highest level of safety would be displayed in areas identified by a high degree of lighting (overview or visibility) and a low level of refuge for attackers. They went on to argue, that if the surrounding area affords the victim a high degree of visibility/permeability and minimal hiding places for offenders, then the victim could evaluate the area and avoid an attack or opportunistic crime.

In terms of other approaches on fear of crime, the Crime Prevention Through Environmental Design (CPTED) approach asserts that it is important to create built environments in such a way that fear of crime and opportunistic crime are reduced based on the influence of design. Evidence for this is found in the work of Newman's 'defensible space' [21], and Poyner's 'design against crime' [22], which both explain the features of the built environment and their relationship with the perceived safety of individuals. In a similar way, Jeffrey [23] argued that the sense of safety might be enhanced with the heavy reliance on design and physical changes.

Moreover, and based on the CPTED idea, Jacobs [24] argued that modern spatial designs and particularly residential layouts in cities, abandoned the traditional relationship between houses and sidewalks. The traditional layouts and houses have been replaced with new high-rise buildings that have the ability to destabilize informal social control. She famously argued that destabilisation occurred because modern housing and layout design lacks the ability to provide surveillance ('eyes on the street') over strangers. Jacobs believed that individuals might feel safer in mixed land use environments because such environments

encourage more people into public areas, facilitate movements, increase the density and subsequently ensure presence of territorial guardians [25].

Angel [26] studied the relationship between crime and population density in streets in commercial areas in Oakland, California. Angel emphasised that crime is related to the level of intensity of activity on the street. When the intensity of activity increases, there are enough people to provide for adequate surveillance, and therefore such areas tend to have lower crime rates, coupled with more diverse land uses including commercial land-uses that might enhance perceived safety. Angel asserts that with higher levels of activity, crime falls because there are more people to assure informal surveillance of the site. This argument is further emphasised by Loukaitou-Sideris who showed that the most serious crimes tend to occur within desolate settings with low levels of activity [27]. There is, however, some evidence to the contrary of the above, which suggests a higher density of people, a higher intensity of activity, and an overall mixed land use generates feelings of less safety. For example, a recent study examining the association between fear of crime and conditions of the environment in Brisbane, Australia, found that mixed and commercial land uses detract from feelings of safety [28].

3   Research problem

Most researchers who studied fear of crime focused on environmental features such as graffiti, dilapidated buildings, enclosures, alleys, disorderly areas, or social clues such as the presence (or absence) of people. However, less is known about whether the combination of environmental and social variables creates lower or higher fear environments. In previous studies, the relationships between fear of crime and influence of environmental conditions have been tested more on experimentally manipulated social and physical settings or campus settings than on live settings [20, 29]. However, it is believed that fear of crime is experienced in other settings such as CBD areas at night. As such, Nasar and Jones [15] and Jorgensen and colleagues [30] have called for further research to investigate the relationship between sense of safety and environmental features in live settings. Moreover, when considering past research on fear of crime in public space in Australia, most studies tended to concentrate on Metropolitan areas [31, 32]. Less frequently, researchers studied fear of crime in regional settings. At the same time, little is known about how social groups with diffrent ethnic backgrounds such as international students experience the bullt envionmental features in terms of sense of safety. In order to addrss this reseach gap, this study aimed to examine the influece of enviormental and social clues on feelings of personal safety among university students in a regional city context.

3.1 Methods and limitations

This study used mixed methods to investigate the association between feelings of fear and features of the environment. In order to explore the research aim, the study involved two field surveys at two different stages. First, the researcher

used night time walks on all streets throughout the Bendigo CBD area to select sites that generate feelings of being unsafe. Twelve domestic and international Asian students participated in this survey at night between 7.30 – 9.30 pm on two separate week days during autumn in 2012. The participants were asked to walk alone on CBD streets and mark the areas they felt to be unsafe. The Bendigo CBD area is relatively small; as such students were able to cover all of the streets. The participants circled locations that they felt to be unsafe. The locations were varied. Overlapping individual maps and clustering the circled locations led to the selection of three Sites: Edward Street (Site A), Hopetoun Street (Site B) and Saint Andrews Avenue (Site C).

In the second stage, the study employed self-recorded walking (SRW) and auto-photo elicitation as methods to obtain an overall view of safety or fear in relation to the proximate environment. Fifteen domestic and international students participated in SRW exercises, taking photos while they walked alone at night in the selected sites. The students who participated for the second stage of the field survey did not participate in the first stage of the field survey. All participants had resided more than 24 months in the city area and all were familiar with the selected CBD locations. None reported any victimisation in the Bendigo city area. Each participant was provided with a digital tape recorder to record his or her comments while walking. Students were asked to take a photograph of each feature of the location that made them feel safe or unsafe. At the end of each walk, participants were asked to comment on photos taken from their own perspective and all photo descriptions were recorded. The students' SRW and post walk interviews (photo descriptions) were fully transcribed for the purposes of coding and analysis. Content analyses of the transcripts were undertaken to identify students' views about feelings of safety and conditions that made them unsafe. Considering all SRW comments and photo descriptions, participants made 313 comments for all the sites.

As previously discussed, participants were asked to comment on feelings of safety at each site. In order to understand the perceived level safety at each site, the study classified the respondents' comments into four safety categories: most safe, safe, moderately safe, and less safe. Accordingly, if a respondent commented on things such as "I feel very safe or "all good in this area" on site A, the study analysis would consider site A to be the safest site. Similarly, if a respondent commented on things such as "I feel very uncomfortable here" or "it feels apprehensive, creepy" on Site B, it would consider site B as an unsafe place. Based on this safe classification, participants' judgments of safety were cast into a 4x3 frequency table (most safe, safe, moderately safe, and less safe by 3 sites). This ensured that each respondent's judgment of safety on a particular site went into only one cell. This analysis assisted with finding out the spatial distribution pattern of safety referring to percentage of respondents.

Like many studies, this study has several limitations. Firstly, the findings may not be able to be generalised to other populations as the sample comprised university students in a regional city and contained a limited number of participants due to the voluntary nature of this research. However, it is believed that the study findings reflect some general truths of the city of Bendigo in

relation to safety issues, and influence on social and physical determinants in feelings of personal safety and fear generating process. Nevertheless, it is believed that larger data sets need to be collected in order to explore the nexus between fear of crime and environmental conditions. For instance, if feeling of fear is associated with lower or zero availability of people and activities, fewer people and activities would provoke fear when walking alone at night. Secondly, because of ethics requirements, participants were informed that this research was about fear of crime and the influence of features of the environment. As a result, participants may have reported about feelings of safety in relation to environmental conditions more so than others might have under live conditions [15]. Thirdly, this study found some practical limitations when using SRW and auto photo-elicitations as methods of data collection. It was found that a particular challenge was to capture the real emotions of participants as participants may not be very confident to walk freely, observe the surrounding area and air their views. For instance, some participants commented that they wanted to pass the area very quickly due to safety concerns and subsequently such participants tended to produce fewer descriptions about the surrounding environment. It is believed that walking with another person, security person or police officer may improve the personal security of the participants from being attacked or involved in threatening situations. However, walking with someone or a security person may not accurately reflect the participant's real emotions pertaining to the setting. Despite these challenges, the findings of this study confirm that there are alternative ways to investigate differing spatial inequalities in relation to fear of personal security. SRW comments and auto photos elicitations also confirm that these methods facilitate researchers to understand the effect of different environmental features on individuals' perceived safety

4   Findings

The respondents' SRW and photo comments show that their feelings of fear varied from site A through to site C. Both Asian and domestic students felt Sites C (80 percent) and B (53 percent) were 'unsafe'. Both these sites are quiet, not very well lit toward the middle and have some trees, which create darkness and shadows at night. It also has some unexpected nooks and crannies for concealment. Furthermore, the majority of respondents considered Site A (53 percent) as a 'safe' place. Edward Street has bright lighting, less dark places, nooks and corners. But it has low level of pedestrian activity. Therefore, a considerable proportion of respondents (33 percent) considered Edward Street as a less safe place.

The respondents' comments also reveal that there are student's nationality variations in terms of level of safety when walking alone on this street. For instance, in Saint Andrews Avenue, both Asian males and female students tended to feel less safe or very unsafe than domestic students. As many as 87 percent of Asian students felt unsafe, as compared to 71 percent of domestic students. Similarly, in Hopetoun Street, respondents' comments reveal that more

Asian students (62 percent) judged this site as less safe than domestic students (42 percent).

Prior to SRW, participants were asked to comment on environmental features and any other conditions that made them feel safe or unsafe throughout their walk. Accordingly, participants commented on environmental features and other conditions that made them feel unsafe or safe. As previously mentioned, the majority of respondents identified Saint Andrews Avenue (87 percent) and Hopetoun Street (53 percent) as fearful sites. Respondents' comments revealed that fear was associated in these sites due to a low degree of lighting, relatively high level of hiding places, and low density of people and activities. Considering Saint Andrews Avenue, participants made a total of 132 comments. Of those, 38 percent referred to poor lighting, 19 percent referred to hiding places, and 28 percent referred to absence of people and activities. Fewer fear comments referred to other aspects such as unfamiliarity and a sense of a 'ghost town' like atmosphere. A lesser amount of comments referred to safety associated with CCTV cameras and familiarity. As the comments indicate, both Asian and Australian, and both male and female students indicated discomfort in relation to poor lighting, concealment, and the absence of people.

The respondents made a total of 89 comments about Hopetoun Street, of which 38 percent referred to poor lighting, 24 percent referred to concealment, and 19 percent referred to absence of people. Similar to Saint Andrews Avenue, the majority of respondents (14 out of 15) considered that Hopetown Street exhibits low levels of lighting and concealment (10 out of 15). Typical comments include:

> "I feel very unsafe alone this street. Because I can't see properly and the lighting is not very good. I want to pass this road very quickly. I can't see any one even though I am in CBD. So at night this is like a ghost town" (Asian, female)

> "I am walking up in St. Andrews Avenue. It is very dark and quiet. As next to the Trade Link there is a car parking area that is also very dark to or lights, trees in that car park make that very dark and again empty and Not very safe" (Domestic, male).

> "... there are lots of places where people could jump out. Hope that won't happen today. But still don't feel as walking on my own" (Domestic, female).

5 Discussion and concluding remarks

A complex mix of factors influences fear of crime. However, this study proved that environment clues such as degree of lighting (overview), concealment and presence of people all play an important role in a sense of safety. The results indicate that irrespective of gender and student nationality, fear was mainly
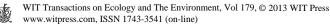
associated with darkness, hiding places and absence of groups of people. The findings of this study support the previous literature that has shown people's fear is affected by low degree of visibility and concealment [20, 30, 33]. Further in this respect, the findings of this study support Nasar's and Fisher's safety model [20] which hypothesises that fear is associated with low degree of prospect and high degree of refuge (for attackers). It needs to be mentioned that most of the past studies on social and environment influences on fear, were tested using photographic representations of sites or less interactive sites that represented a less real experience [30]. However, findings from this study go further in suggesting fear is associated with low degree of prospect and concealment in more natural settings in a city centre.

The present study results also revealed that feelings of insecurity were associated with the nature of land use activities. Past literature shows that different activities produce pedestrian flows and consequently individuals are likely to feel safe in such areas at night [25]. Conversely, people may feel less safe in areas where there are less land use activities at night. When walking in Saint Andrews Avenue and Edward Street at night, many students felt unsafe. They often referred to these places as 'ghost towns' due to lack of activities at night. The results support ideas of Jacobs [24] and Newman [21] that stressed urban settings need to have a mix of land use activities during the day and at night. Consequently, city centres become vibrant and alive during both day and night. Such thriving city spaces invite people to interact, and thereby facilitate building and maintaining of authentic communities [34].

The findings of the present study also show fear can be associated with student nationality and provide an insight into the differing spatial inequalities of domestic students and international students in a regional city centre. International students' fear can be based on ethnic inequality. Therefore, spatiality of international students' fear can be associated with local planning, social policy, and political basis of spatial equality within the urban fabric [13, 35].

The study findings suggest that planners need to consider some planning implications to improve liveliness and increase feelings of safety in the CBD area particularly at night. This study has shown that students are more likely to feel unsafe in poorly lit areas. Action needs to be taken to use appropriate lighting in appropriate places, which may reduce hiding places, and shadows at night and therefore this will increase people's perception of safety on streets. Also needed are more sympathetic human scale designs, which do not create hiding spaces, enclosure and fortress type environments [36]. Planners need to consider that the creation of new developments that do not block existing vistas in the CBD as the latter significantly improve the readability of the area. The city council needs to further encourage new buildings in the city centre area to incorporate retail uses at ground level to create active street frontages and encourage pedestrian movements. To improve the vitality of CBD areas at night, mixed land uses in possible spaces (night time retail shops) would be useful in the CBD area. Such improvements would assist in developing an evening city culture for all age groups [34].

The study findings further suggest that night time fear is associated levels of activity existing at night. The lack of economic activities and other events at night do not produce pedestrian flows and therefore many people may not feel safe in visiting some parts of the city centre. The findings imply that the CBD area needs a variety of activities for all age groups during the day and night throughout the area. In order to revitalise the night time activities, the city needs to extend the activity period into the evening and night, meaning the city activity period should not be 8.30 am to 5.00pm. The council needs to take actions to offer a variety of facilities at night that are likely to appeal all social groups [37].

The residential developments in the CBD promote pedestrian activity in a longer time span in the city centre and therefore such measures are likely to improve informal natural surveillance. This is likely to reduce anxiety levels and improve people's feelings of personal security when walking in CBD streets. In order to increase the residential density of people in the CBD area, the council could further explore opportunities for 'shop-top housing' in the inner CBD area. Moreover, planners need to explore opportunities for possible development and redevelopment sites for higher density housing and range of housing options.

Apart from the above measures, an efficient public transportation service during the day and night has been identified as a key to attractive and vibrant cities. If there is an efficient public transport system, the public, and especially those who do not own private transport options will choose buses as the best means of transport to reach the city centre. A reliable and efficient bus service will attract students and general public to use the city centre during the day and at night and consequently such measures will generate pedestrian flows in the city streets. However, it is generally believed that the public transportation system in the Bendigo city is inefficient (long waiting times, irregularity of the service and unavailability of buses at night and early in the morning). It appears that the city area needs a more coordinated bus service. Actions are needed to investigate possibilities for a variety of public transport options such as mini buses, and regulated para-transit options such as vans in selected routes at night and early in the morning. Environmental improvements in the existing bus station such as better lighting, staffing, and frequent police patrolling at night time will also improve people's perception of safety.

This study does not suggest a unilateral planning approach to enhance feelings of safety. Rather a well-coordinated multi-faceted approach is needed in order to improve the perceived safety and vitality within the city area. The findings suggest that feelings of insecurity are associated with diverse attributes in live settings and that these factors may vary depending on the built environment. Notably, one important interpretation of the findings is that fear of crime needs to be understood holistically from diverse disciplines (planning, sociology, urban design, and criminology). These study findings suggest that further studies of this nature are needed in different settings with different demographic groups to support or reject the identified associations.

References

[1] Australian Education International., *International Student Enrolment Data*, Department of Education: Canberra, Australia, 2009.

[2] Australian Bureau of Statistics., *Australian Social Trends: September 2010*, Canberra: Australia, 2010.

[3] Australian Bureau of Statistics., *Working Population Community Profile*, Canberra: Australia, 2006.

[4] City of Greater Bendigo, *Entertainment Precinct Working Group Findings*, City of Greater Bendigo: Bendigo, 2004.

[5] Andrews, M. and Gatersleben, B., Variations in perception of danger: Fear and preference in a simulated natural environment. *Journal of Environmental Psychology,* **30(4)**, pp. 473-481, 2010.

[6] Ferraro, K.F., *Fear of Crime: Interpreting Victimisation Risk*, State University of New York Press: New York, 1995.

[7] Blumer, H., *Symbolic Interactionism: Perspective and Method*, Prentice-Hall: Englewood Cliffs, 1969.

[8] Kelly, E., What makes women safe? *Housing Review,* **35(6)**, pp. 202-203, 1986.

[9] Yavuz, N. and Welch, E.W., Addressing fear of crime in public space: Gender differences in reaction to safety measures in train transit. *Urban Studies,* **47(12)**, pp. 2491-2512, 2010.

[10] Garofalo, J., The fear of crime: Causes and consequences. *The Journal of Crimal Law and Criminology,* **72(1)**, pp. 839-857, 1981.

[11] Gardner, C.B., *Passing By: Gender and Public Harassments*, University of California Press: Berkeley, 1995.

[12] MacMillan, R., Nierobisz, A. and Welsh, S., Experiencing the streets: Harassment and perceptions of safety among women. *Journal of Research in Crime and Delinquency,* **37(3)**, pp. 306-322, 2000.

[13] Smith, S.J., Fear of crime: Beyond the geography of deviance. *Progress in Human Geography,* **11(1)**, pp. 1-23, 1987.

[14] Goffman, E., *Relations in Public*, Basic Books: New York, 1971.

[15] Nasar, J.L. and Jones, K.M., Landscape of fear and stress. *Envioment and Behavior,* **29(3)**, pp. 291-323, 1997.

[16] Warr, M., Dangerous situations: Social context and fear of victimization. *Social Forces,* **68(3)**, pp. 891-907, 1990.

[17] Whyte, W.H., *The Social Life of Small Urban Spaces*, Project for Public Spaces: New York, 1980.

[18] Wilson, J. and Kelling, G.L., The police and neighbourhood safety: Broken Windows Theory. *The Alantic Monthly (**March**),* pp. 29-38, 1982.

[19] Appleton, J., *The Experience of Landscape*, John Wiley: London, 1975.

[20] Nasar, J.L., Fisher, B. and Grannis, M., Proximate physical cues to fear of crime. *Landscape and Urban Planning,* **26(3)**, pp. 161-178, 1993.

[21] Newman, O., *Defencible Space*, The Macmillan Company: New York, 1972.

[22] Poyner, B., *Design Against Crime*, Butterworths: London, 1983.

[23] Jeffery, R., *Crime Prevention Through Environmental Design*, Sage Publications: Beverly Hills, 1971.

[24] Jacobs, J., *The Death and Life of Great American Cities*. Vintage: New York, 1961.

[25] Foster, S., Knuiman, M., Wood, L. and Giles-Corti, B., Suburban neighbourhood design: Associations with fear of crime vesus perceived crime risk. *Journal of Environmental Psychology,* (10.1016 /jenvp.2013.07.015), 2013.

[26] Angle, S., (eds). *Discouraging Crime Through City Planning*, University of California: Berkeley, 1968.

[27] Loukaitou-Sideris, A., Hot spots of bus stop crime: The importance of enviornmetal attributes. *Journal of American Planning Association, 65(4)*, pp. 395-411, 1999.

[28] McCrea, R., Shyy, T-K., Western, J. and Stimson, R., Fear of crime in Brisbane: Individual, social and neighbourhood factors in perspective. *Journal of Sociology, 41(3)*, pp. 7-27, 2005.

[29] Blobaum, A. and Hunecke, M., Perceived danger in public space: The impacts of physical features and personal factors. *Environment and Behavior, 37(4)*, pp. 465-486, 2005.

[30] Jorgensen, L., Ellis, G.D. and Ruddell, E., Fear perceptions in public parks: Interactions of environmental concealment, the presence of people recreating, and gender. *Environment and Behavior* (10.1177/0013916512446334), 2012.

[31] Nyland, C., Forbes-Mewett, H. and Marginson, S., The international student safety debate: Moving beyond denial. *Higher Education Research and Development, 29(1)*, pp. 89-101, 2010.

[32] Tulloch, J., Lupton, D., Blood, W., Tulloch, M., Jennett, C. and Enders, M., *Fear of Crime: Audit of Literature and Commuinity Programs*, Common Wealth Australia: Canberra, Australia, 1998.

[33] Nasar, J.L. and Fisher, B., Fear spots in relation to microlevel physical clues: Exploring the overlooked. *Journal of Research in Crime and Delinquency, 32(2)*, pp. 214-239, 1995.

[34] Gehl, J., *Cities for People*, Island Press: Washington, DC, 2010.

[35] Valentine, G., Images of danger: Women's source of information about spatial distribution of male violence. *Area, 24(1)*, pp. 22-29, 1992.

[36] Dovey, K., Redistributing danger: Enclosure and encounter in urban design. *Australian Planner, 37(1)*, pp. 10-13, 2000.

[37] Thomas, C.J., and Bromley, R.D.F., City-centre revitalisation: Problems of fragmentation and fear in the evening and night-time city. *Urban Studies, 37(8)*, pp. 1403-1429, 2000.