

CRIME AND PUBLIC TRANSPORT

Designing a safer journey

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ABSTRACT

One of the major concerns of the majority of South Africans is the relatively high levels of crime. The transport sector faces its own set of challenges in this regard. For instance, the fact that the majority of poorer people stay relatively far away from their places of employment requires them to spend a considerable amount of time travelling. Commuters are very vulnerable to crime during these journeys. They are exposed to being victimised on busses, trains or minibus taxis, while changing from one mode of transport to another at stations, or when walking from drop-off points to their places of work or to their homes. This paper addresses issues related to transport and security with a particular focus on the role that the physical environment plays in increasing or reducing opportunities for crime. The focus is on crime problems on public transport and the use of specific planning and design interventions to reduce crime in the South African context.

1. INTRODUCTION

The last number of years saw a renewed drive by the South African government to encourage people to use public transport. The government recently launched a new public transport action plan, with the aim of providing “safe, reliable, round-the-clock public transport for almost all”, according to Jeff Radebe, the minister of transport (News 24:1). One of the key objectives of the plan is making public transport safe and secure (News 24). Given the general concerns regarding crime in South Africa, it is to be expected that the issue of safety and security be addressed in the plan.

The crime situation in South Africa has been dominating many debates for a number of years now. The early 1990s saw a dramatic increase in the levels of recorded crime in South Africa and this trend has continued even after the move to democracy in 1994 (Schonteich & Louw, 2001). Of particular concern, though, is the high level of violence experienced, with crimes such as murder, rape and assault having amongst the highest incidence rates in the world (Du Plessis & Louw, 2005). Despite promising decreases in the reported levels of certain crimes, they are still disturbingly high. For instance, although the murder rate decreased from almost 77 per 100 000 of the population in 1994/95 to just under 40 in 2005/06, it is still more than seven times the world average of 5.5 and 20 times higher than the British rate of just under two per 100 000 (Burger, 2007).

Furthermore, victimisation surveys indicate that all South Africans display relatively high levels of fear of victimisation. A national victims of crime survey conducted by the Institute for Security Studies (ISS) in 2003 revealed that, despite the fact that South Africa’s crime rates have decreased or stabilised during the past five to seven years, the public’s fear of crime has increased between 1998 and 2003. For instance, the study indicated that 58% of the respondents felt very unsafe when walking alone in their areas after dark, a much higher percentage than the 25% recorded in 1998 (Mistry, 2004).

Crime affects existing and potential users of public transport in many ways. A number of studies highlight the impact of crime and the fear of crime on the use of public transport in South Africa (including van der Reis 1980, 1997; Page et al, 2001; National Transport Survey, 2003; and Stone, 2006). For example, in a study in Durban, Page et al (2001) found that one out of six of all the respondents making use of public transport had been a victim of crime. The most common types of crime experienced by the victims included pickpocketing, bag snatching and jewellery theft, but more serious violent crimes such as assault, stabbings and rape had also been experienced. These incidents had all taken place in locations specifically associated with public transport such as train stations, taxi ranks, bus stops or modal interchanges, as well as on board trains and taxis (Page et al, 2001).

The National Transport Survey (2003) found that crime plays an important role in people's decisions not to make use of certain types of public transport. For example, crime was one of the three main reasons for respondents not making use of trains in South Africa. The most important reasons for respondents not making use of taxis were the fact that they were "too expensive" and because of "mini-bus taxi crime". In addition, some of the issues contributing to the dissatisfaction with train services included security during the walk to/from the station, security at the stations and security on the train. These three issues were also highlighted as key concerns with respect to bus and taxi services (National Transport Survey, 2003).

In light of the above, this paper explores the relationship between *crime* and specific characteristics of different types of *physical environments* associated with *public transport*. It commences with a brief discussion of issues emerging from international studies on crime and public transport. This is followed by a discussion of specific approaches which could be employed to combat crime in public transport, after which some detail is provided regarding the utilisation of specific planning and design interventions to reduce crime in the South African context. In conclusion, the implications of crime on public transport policy and strategies as well as infrastructure provision are summarised, and possible opportunities for future research identified.

2. CRIME AND PUBLIC TRANSPORT

Crime in public transport covers a wide range of offences that could occur in at least three different types of situation, namely:

- Walking to, from or between transport facilities or stops (walking from departure point e.g. home to a taxi rank or back; from a taxi stop to a bus station; from a train station to destination point e.g. workplace or back).
- Waiting at boarding points and facilities (e.g. taxi/bus stops, train/bus stations, modal interchanges etc.).
- Travelling on board a mode of transport such as a bus, train or taxi (Newton, 2004).

The targets of crime also vary and could include the system itself (vandalism, fare evasion), employees (assaults on ticket collectors) and passengers (pickpocketing, assault) (Smith and Clarke, 2000).

Numerous studies have been conducted internationally highlighting various crime problems related to public transport. This has become an increasingly important research topic, especially in the past forty years (Smith and Clarke, 2000). The following examples provide an indication of just a few of the aspects addressed in some of the studies.

In the USA, various studies indicate that crime in public transport is also becoming increasingly problematic. Studies in Boston, Atlanta and Chicago revealed that a variety of types of crime occur on metro subways (Le Vigne, 2006). Problems experienced on New York subways include robbery of passengers at isolated rail stations, theft from passengers (most commonly jewellery) and bag snatches, while passenger assaults have been identified as a problem on busses in Los Angeles (Smith and Clarke, 2000). According to the British Transport Police, while a large proportion of crime on public transport is not reported, crime on railways in the UK rose by 5.6 percent between 2001 and 2002 (Cozens et al, 2004).

In addition to the actual incidents of crime related to public transport, studies also indicate that the increasing levels of the fear of crime is a cause for concern. Despite often lower levels of recorded transport crime (compared to crime in general), studies reveal that many people are concerned about their safety and security on public transport (Smith and Clarke, 2004). People in the UK are often particularly nervous about travelling at night, walking to the bus stop or the train/underground station and when waiting for transport to arrive (www.crimereduction.gov.uk/toolkits).

A study by the UK Home Office (1996) found that in the 1990s, one in eight women surveyed mentioned that they felt so unsafe on public transport that they avoided using it. In addition, 10% of the woman in the UK felt 'unsafe' or 'very unsafe' waiting on a railway platform in the day, compared to 53% at night (Root et al, 2000). A study conducted in Wales found that a large number of users experienced fear of crime approaching a train station, waiting inside the platform shelter, waiting on the platform and using the station car park (Cozens et al, 2004).

Increased levels of fear have many consequences. A "cycle of fear" in which crime on public transport leads to increased fear, in turn results in a drop in ridership. The drop in ridership means less guardianship from other passengers and increased risk, which further advances the adverse consequences for ridership, revenues and security (Smith and Clarke, 2004). Perceptions of crime on railways will therefore undoubtedly affect levels of patronage (Cozens et al, 2004). Clarke (1996:3) pointed out that "...the fear of crime that stops many people using public transport has a serious impact on revenues". Given this, perceptions are very important, as noted by the Legislative Assembly of Queensland (Australia): "... the public's perception of crime is an important determinant of people's usage of public transport" (cited in Cozens et al, 2004:26). Research has also suggested that there may be as much as a 15% increase in passengers for all rail journeys if a range of anticrime initiatives were successfully implemented.

3. REDUCING CRIME IN PUBLIC TRANSPORT

A holistic approach to crime reduction that considers the journey from its initial starting point to its final destination seems to be favoured by a range of role players, including the Department of the Environment, Transport and the Regions in the UK (DETR, 1999). The so-called "whole journey approach" involves addressing crime problems encountered by commuters and staff during any part of the journey whether travelling by foot, waiting at a stop or station or travelling on a mode of public transport (Smith and Cornish, 2000). The whole journey approach implies the implementation of targeted crime reduction initiatives aimed at a range of crime types experienced in different situations throughout the public transport system. Therefore, addressing crime in public transport could, and often should, incorporate a range of approaches, activities and strategies. In particular, when tackling crime at a local level, it is essential to develop context specific crime reduction initiatives

that respond to particular problems. Ideally, a proper analysis of the crime problem should inform the development of an appropriate response.

In broad terms, crime problems could be addressed through a range of interventions that could involve law enforcement (e.g. policing activities), social crime prevention initiatives (including offender reorientation and victim support programmes), and/or approaches related to situational crime prevention (Liebermann et al, 2000) i.e. involving context specific managerial and environmental changes to reduce opportunities for specific crimes to occur (Clarke, 1997). The following discussion focuses specifically on issues related to situational crime and approaches that acknowledge the relationship between crime and the physical environment, including environmental criminology and crime prevention through environmental design (CPTED).

In the 1980s and 1990s a number of environmental criminologists starting recasting the attention on the spatial characteristics of crime settings. Without disputing the importance of socioeconomic variables, they emphasised the role of crime locations and their characteristics. Some also argued for a reorientation of crime prevention research in terms of the unit of analysis, leading to a shift from the study of offenders to the context of crime. Such an approach, referred to as situational crime prevention, emphasises that criminal activities are clearly linked to the specific characteristics of a place, as well as the level of guardianship present in this place (Loukaitou-Sideris et al, 2001). Clarke et al (1997) argues that by understanding and 'designing out' the variables that contribute to crime and enhancing the elements that reduce crime, more effective crime prevention strategies can be developed.

Situational crime prevention approaches are increasingly being applied to research, understand and address crime in public transport (Smith and Clarke, 2000). This approach emphasises reducing opportunities for crime by increasing associated risks and difficulties, reducing awards and removing excuses (Clarke, 1993). Situational crime prevention draws on a variety of "opportunity" theories – such as routine activity theory (Cohen and Felson, 1979), the rational choice perspective (Clarke and Cornish, 1985) and environmental criminology (Brantingham and Brantingham, 1991). In an effort to explain variations in crime rates in different settings, criminologists have introduced the idea of an "environmental backcloth" (Loukaitou-Sideris et al, 2001). This idea refers to

"the uncountable elements that surround and are part of an individual and that may be influenced by or influence his or her criminal behaviour... . This working backcloth would explicitly include physical infrastructure of buildings, roads, transit systems, land uses, design and architecture, as well as the people located within that physical infrastructure" (Brantingham and Brantingham, 1993:6-7).

A new generation of crime prevention through environmental design (CPTED) studies has also contributed to a shift from the macro scale (city wide) and mezzo scale (city neighbourhoods) to the micro scale (urban block or specific place, such as an intersection or bus stop). A useful way to distinguish these different focus areas or units of analysis, are through the application of the concepts of place and space as settings for crime (Loukaitou-Sideris et al, 2001). A place refers to a small area (a street corner, intersection or building) that reflects and affects the activities of its users and may impact a specific criminal event or conflict. Places are embedded in spaces or larger areas (a block or collection of blocks or neighbourhoods) (Block and Block cited in Loukaitou-Sideris et al, 2001:256). A number of researchers point out certain variables (elements present in the physical environment) that may contribute to crime in a specific context, including the

concentration of criminal activities close to major transportation arteries and highways, on main roads with major public transit stops, around specific intersections of grid and diagonal streets, in areas with particular land uses, for example specific commercial or industrial areas, around multifamily housing in degraded areas, in areas with vacant lots or buildings, public parks and in the vicinity of some schools, and in the proximity of liquor stores, bars and taverns (Loukaitou-Sideris et al, 2001). It is however, not only researchers that are increasingly recognising the link between crime and the environment, but also the users of public transport. In a response to a survey on how the Valley Lines Network in Wales can reduce the fear of crime, the largest percentage of respondents indicated that this could be achieved through enhanced visibility (CCTV, lighting and transparent shelters), while a significant number also mentioned a cleaner environment (Cozens et al, 2004:29).

The UK government has recognised the link between design and crime and the reduction of fear. One specific initiative to address safety on the railways is through the Secure Station Scheme. It focuses on implementing CPTED strategies at individual stations to reduce crime and the fear of crime (Cozens et al, 2004; www.crimereduction.gov.uk/toolkits). Similar initiatives in the USA have also contributed to significant reductions in crime, for example environmental design initiatives on the Washington Metro (Le Vagne, 1996), Port Authority Bus Terminal (www.crimereduction.gov.uk/toolkits), and in the New York Subway (Smith and Clarke, 2004).

4. DESIGNING A SAFER JOURNEY IN SOUTH AFRICA

Within the South African context, the relationship between crime and the physical environment is particularly distinct with respect to public transport. South African cities and towns have been shaped to a large degree by planning practices that were a result of apartheid policies. A typical characteristic of the apartheid city is, for instance, the spatial dislocation of the poor, which results in long and costly commuting patterns that often leave commuters vulnerable to victimisation (Kruger et al, 2001). The majority of poorer people stay relatively far from their places of employment, requiring them to spend a considerable amount of time travelling. Commuters are exposed to victimisation on busses, trains or minibus taxis, while changing from one mode of transport to another at stations, or when walking from drop-off points to their places of work or to their homes. Furthermore, despite a very large proportion of the population not owning their own motor vehicles, most areas are not designed to accommodate pedestrians satisfactorily. Provision is often not made for pedestrian traffic in the form of, for instance, walkways, pedestrian bridges, or adequate lighting, thus exposing the poor in particular to situations where they are vulnerable to victimisation.

Research conducted in South Africa has resulted in the development of an approach to crime reduction that acknowledges the role of the physical environment within the local context and incorporates elements of international approaches such as situational crime prevention (Clarke, 1997), environmental criminology (Brantingham and Brantingham, 1991), crime prevention through environmental design (CPTED) (Jeffery, 1997) and crime science (Laycock, 2005).

Kruger et al (2001) describes a South African approach to crime combating that aims to reduce the causes of, and opportunities for, criminal events and address the fear of crime by applying sound planning, design and management principles to the built environment.

This approach incorporates the following:

- **Physical/spatial planning:** urban planning approaches used at a strategic level and dealing with the form of the city, e.g. the promotion of mixed land-use, the reduction of vacant land, promoting pedestrian use of infrastructure, ensuring the equitable and efficient provision of facilities and infrastructure, and supporting urban renewal.
- **Design:** the detailed design of physical urban elements, such as the movement system and roads, open spaces, buildings and lighting.
- **Management:** spatial management of the city and its different functions including infrastructure maintenance, by-law enforcement, implementing crime prevention strategies and initiatives etc.

With respect to public transport, initiatives involving the planning, design as well as management components could be employed to reduce crime.

From a **planning** perspective, local government and public transport authorities could provide strategic direction at a city scale by formulating spatial development policies, strategies and programmes aimed at incorporating the transport system into the city in such a way that crime problems are addressed at a city scale. This could involve the provision of suitable guidance regarding the location of major modal interchanges, the development of mixed nodes, and activity corridors that incorporate multiple modes of transport.

Various strategic planning decisions made by city authorities could have important direct or indirect crime reduction consequences. For instance, a strategy aimed at reducing vacant land such as transport reserves (e.g. by developing these sites) would remove environments that are often conducive to crime and could lead to a reduction in crime levels in certain locations (Figure 1).

Closely related to these strategic level interventions is the issue of spatial and urban **management**. Sound management could play a crucial part in any initiative aimed at reducing crime in public transport. For instance, an aspect of city management such as infrastructure maintenance could be an important crime reduction mechanism. A lack of maintenance could very well be the reason why certain crimes occur in specific areas or why people feel vulnerable in a particular area. For example, if carefully designed lighting has been provided to increase the safety of a pedestrian route taxi rank, the crime prevention effect will be rendered useless if the lights are not maintained. Another example would be a lack of road maintenance resulting in some roads deteriorating to the extent that vehicles cannot get access to some areas, especially in poorer communities. This makes it difficult for the police to patrol these areas or to respond to calls for assistance. Residents' safety is also jeopardised when they are forced to walk through unsafe areas because taxis cannot drop commuters off closer to their homes due to poor road conditions (Figure 2).

The **design** of the different components of the public transport system could have a substantial impact on levels of safety as well as feelings of vulnerability. Certain environments can impart a feeling of safety, while others can induce fear, even in areas where levels of crime are not high. The form and character of the built environment as it relates to public transport can be of great significance as the local setting of a crime, either increasing or reducing opportunities for crime.



Figure 1: Vacant land such as transport reserves could be conducive to criminal activities.



Figure 2: Poor road conditions as a result of a lack of maintenance could negatively impact on the safety of commuters.

As discussed earlier, when viewing public transport journeys holistically, crime could occur in three distinct yet interlinked situations, namely when walking to, from and between stops/interchanges, waiting at a stop/interchange, and travelling on a moving vehicle. From an environmental perspective, they could be described as follows:

- The *walking* environment
- The *waiting* environment
- The *en-route* environment (Newton, 2004).

The en-route environment primarily involves vehicles such as trains, busses and taxis. Although the design of these vehicles could play an important role in reducing or increasing opportunities for crime, this aspect will not be expanded upon in this paper. The walking and waiting environments include buildings and other infrastructure as well as the natural environment. Possible design interventions related to these two types of environment are broadly examined in the following discussion. The measures illustrated are based on practical experience gained by the CSIR through various projects as well as a range of interventions presented by Kruger et al (2001) in the form of recommendations aimed at the design of neighbourhoods, city blocks, buildings and the spaces between them.

The walking environment

The public spaces and environments commuters have to negotiate on route to the waiting environment.

To a greater or lesser extent, walking forms an integral part of any public transport journey. Very often, the safety of commuters is severely compromised as they walk to transport pick-up points from their homes, places of work, shops etc. The public spaces and environments commuters have to negotiate as part of their journey could have a negative impact on the experience of commuters due to the opportunities they provide for victimisation (Figure 3).

Physical design could play an important role in the creation of pedestrian friendly environments and in increasing levels of safety. Unfortunately, most areas are designed to accommodate motorcars and little consideration is given to the needs of pedestrians. For instance, often provision is not made for pedestrian traffic in the form of walkways, pedestrian bridges, adequate lighting etc. Certain areas that do not lend themselves to

pedestrian use could be dangerous or increase levels of fear, for instance if sidewalks are overgrown due to a lack of maintenance or are flanked by high blank walls. Pedestrians could also feel vulnerable when they have to traverse vacant or undeveloped stretches of open land or derelict, unlit areas (Figure 4). Commuters often have to make use of subways that provide opportunities for crime and increase levels of fear (Figure 5).



Figure 3: Certain environments, such as this dark and narrow alleyway, could increase levels of fear and opportunities for crimes.
(Photo: Alexandra Renewal Project)



Figure 4: Many areas are not designed to accommodate pedestrians and could increase opportunities for victimisation.
(Photo: Alexandra Renewal Project)



Figure 5: This dark, narrow subway does not feel safe and provides ideal settings for pedestrians to be victimised.



Figure 6: Formalising pedestrian routes by upgrading the walking surface of footpaths could assist in improving feelings of safety.
(Photo: Alexandra Renewal Project)

To help minimise the risk to pedestrians, preferred routes leading to and from public transport facilities could be identified and a pedestrian route network established (Figure 7). By creating a well defined network of pedestrian routes, the number of “legitimate users” (pedestrians, informal traders etc) is increased, which could improve opportunities for passive surveillance and reduce the opportunities for crime. Wherever possible, people should be guided along specific routes so as to encourage more people to make use of the same route. By directing movement along preferred routes, response services such as the police, dedicated security officers or wardens can likewise be concentrated and coordinated to react in a more timely and efficient fashion to assist pedestrians.

A range of design measures could be implemented in a number of ways establish a network of secondary and primary pedestrian routes. These measures could include the following:

- **Upgrading.** Upgrading the walking surfaces of particular sidewalks and paving certain pedestrian routes to form a continuous and clearly identified pedestrian route (Figure 6). Vegetation could also assist in providing a more attractive environment, but it should be maintained to prevent it from providing hiding place for criminals.
- **Lighting.** Targeted pedestrian lighting could be used to guide people along certain routes and away from unsafe areas.
- **Road layout.** Pedestrians require shorter, more direct routes than vehicular traffic. An open road network based on a grid system has a better chance of achieving this than loops, cul-de-sacs and a circular system. Pedestrians use certain routes which they have identified as the most appropriate. These often include paths through open spaces and parks. Where possible, such networks could be formalised e.g. by providing lighting and paving certain paths and incorporated into new developments (Figure 8). If particular paths are unsafe, pedestrians should be discouraged to use them and an alternative provided. This could be done by guiding people along certain routes through the use of signage, by not providing lighting in areas that people should avoid, establishing a system of wardens along preferred routes in city centres and by physically closing areas off etc.
- **Human scale.** Certain elements can assist in establishing a pedestrian friendly environment at a scale that pedestrians can relate to. This can include the provision of pedestrian walkways or some other defined space dedicated for pedestrian use, intersections at regular and comfortable distances, lower level lighting as well as trees that define certain areas and provide shade. The treatment of building facades and other architectural features could also contribute to creating a human scale. Blank walls facing pedestrian routes should be discouraged.
- **Street furniture** can also be very effective in creating a human scale. Well-designed benches, light fittings, bus shelters, rubbish bins etc could improve the image of an area and increase feelings of safety. Care should be taken to ensure that street furniture does not interrupt sightlines or provide hiding place for criminals. It should also be designed to be vandalism free and benches, bus stops etc should not allow vagrancy.

The waiting environment

Transport buildings and facilities including taxi/bus ranks and stops, train stations and modal interchanges.

Where people gather to make use of transport modes such as trains, busses and taxis, many opportunities are created for those with criminal intent. Commuters often fall victim to crimes such as robbery, pickpocketing and mugging. The factors that contribute to this include congestion during peak hours, a lack of passive surveillance during off peak hours, and a lack of safe waiting areas and appropriate lighting (Figure 9). A range of aspects could be considered related to the design of the physical environment when addressing crime problems.

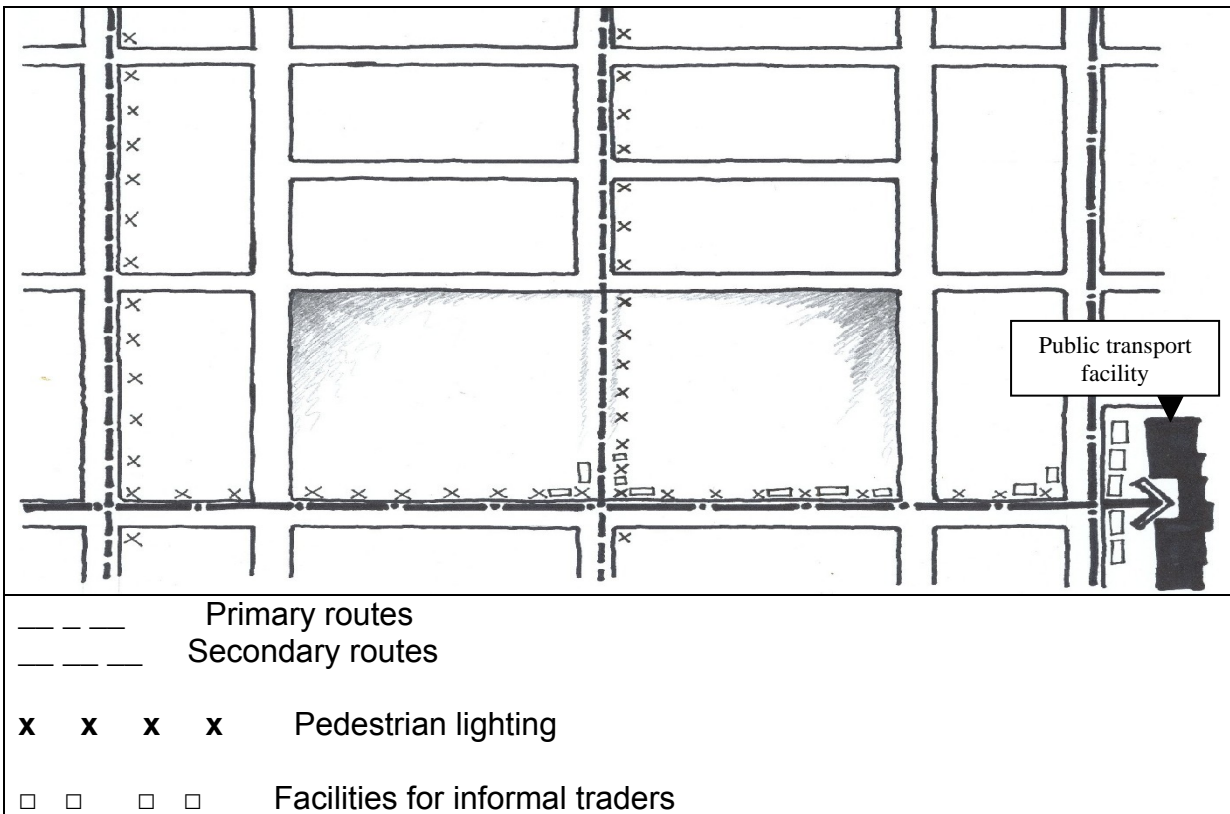


Figure 7: Map of a neighbourhood indicating a network of pedestrian routes.

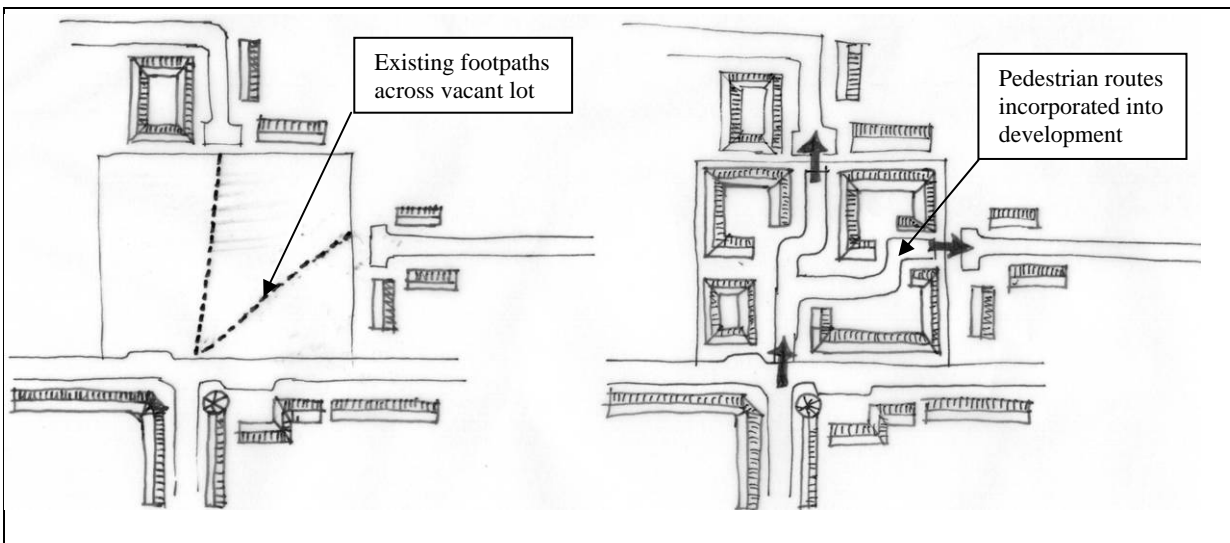


Figure 8: Incorporate existing pedestrian routes into developments where appropriate.

By providing a facility designed to cope with the number of commuters using it, many crime problems could be alleviated (Figure 10). An appropriately laid out facility could assist in improving the effectiveness of traffic and commuter flow and management. This could minimise congestion and limit the opportunities for conflict, while also reducing confusion among users and decreasing waiting time - factors which contribute to the vulnerability of commuters. Ideally, separate areas should be provided for different modes of transport (e.g. taxi, bus) with well-defined areas for pick-up and drop-off and destinations clearly signposted.



Figure 9: A lack of lighting or safe waiting areas for commuters at this taxi rank increases opportunities for crime.



Figure 10: Efficient lighting and signage contribute to reducing congestion and increasing levels of safety.

Clearly marked routes, exits and entrances could assist in preventing people from wandering off into unsafe areas. Signage assists users in orientating themselves and in finding their way, thus reducing levels of vulnerability. By directing people along certain routes, activity levels - and therefore possibilities for passive surveillance - are increased while active policing can be carried out more effectively. Logical and clearly marked pedestrian routes also improve flow and reduce areas of congestion, limiting the opportunities for crimes such as pickpocketing. Physical elements such as kerbs bollards and barriers can be used to channel pedestrians and vehicles in a structured manner.

The design of buildings and other structures could further contribute to reducing crime by maximising opportunities for natural surveillance. Aspects to consider include maintaining clear lines of sight and placing windows such that surveillance of vulnerable areas is possible. By for instance providing transparent bus or taxi shelters, those using them can be seen and that they themselves can observe their surroundings, limiting the possibility of shelters becoming hiding places for potential offenders (Figure 11).

If possible, there should be activity at transport interchanges for as long as possible in order to ensure continued opportunities for passive surveillance and to reduce the vulnerability of commuters during off-peak hours. Many transport interchanges lend themselves to a variety of additional functions such as informal trading, food sales, 24-hour convenience shops, emergency pharmacies, satellite police stations and even entertainment such as cinemas and restaurants. However, liquor outlets should be avoided. Designated areas for hawkers should be provided to reduce congestion (Figure 12, 13).

Often sufficient and appropriate lighting could play a critical role in creating safer environments in and around public transport facilities. What is considered to be sufficient and appropriate will vary according to specific conditions. The levels of lighting (lux), the type of light source (globe), the positioning thereof (high-level masts, task lighting etc.) and other requirements will depend on a number of factors. These factors could for instance include the intended use of the space, whether the light source is environmentally friendly, whether closed circuit television (CCTV) needs to be accommodated and whether the light fittings need to be vandal proof.

In certain situations the use of surveillance technologies such as CCTV can greatly assist with reducing crime in specific areas. However, there are numerous issues to consider with respect to the design, specification, installation and operation of such systems. The

financial implications of the installation as well as future operation and maintenance should be carefully analysed.

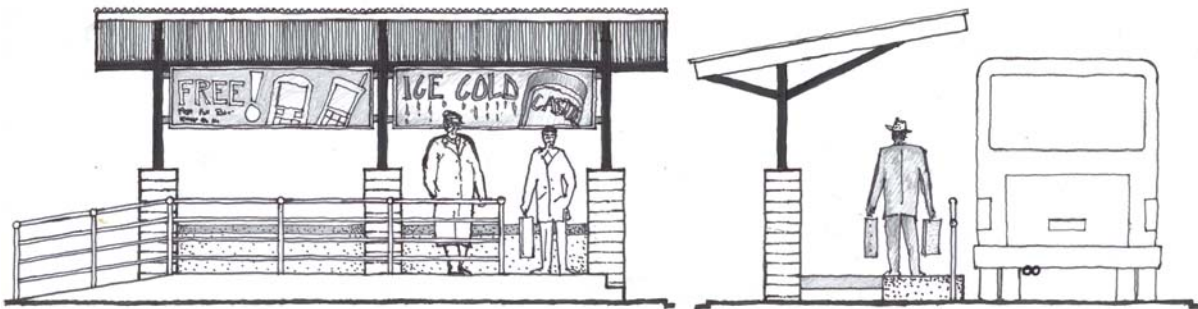


Figure 11: Appropriately designed shelters at bus and taxi stops contribute to the creation of more convenient and safer environments.



Figure 12: Congestion caused by informal traders increases opportunities for crime.



Figure 13: Providing hawkers with facilities at transport interchanges improves levels of safety.

5. CONCLUSION

It is evident that crime in public transport is a real concern, not only in South Africa, but in many countries across the world. The paper highlighted the fact that crime and feelings of fear can influence the use of public transport and, in turn, the revenue of the system. It is critical to ensure the safety of commuters in order for a public transport system to be successful.

It was also pointed out that the relationship between crime and the physical environment is widely acknowledged, and that opportunities for crime could be reduced through appropriate planning, design and management of the environment. From a public transport point of view, the environment includes not only the vehicles such as trains and taxis, but also the facilities where passengers embark and disembark, the areas where they change from one mode of transport to another or walk to/from their final/original destination.

In South Africa, with its relatively high levels of crime, especially violent crime, the physical environment often contribute to an increase in levels of fear and the creation of opportunities for crime. With respect to public transport, this is of particular concern since

the majority of poorer people stay relatively far away from their places of employment, which requires them to spend a considerable amount of time travelling. Commuters are very vulnerable to crime during these journeys, and it is therefore important that crime reduction initiatives be aimed at increasing levels of safety for commuters not just when they are using actual transport facilities, but over their whole journey.

Given the renewed attempts at improving the South African public transport system, and the fact that crime is a key concern in the country, it is of critical importance that any transport strategy have a specific focus on measures aimed at reducing crime in the system. The development of a sustainable, efficient and effective public transport system is to a large degree related to the levels of safety experienced by commuters. It is suggested that a much stronger focus should be placed on assuring commuters of a safe and secure journey. In view of the fact that the paper demonstrated that crime problems experienced by commuters along their entire journey need to be addressed (the whole journey approach), it is clear that a comprehensive, multi-agency approach is required.

A range of role players could make significant contributions on various levels in developing a reliable and safe public transport system in South Africa. In broad terms, opportunities to contribute are for instance available in the fields of research, policy and strategy development as well as implementation.

- **Research**

Research into crime in public transport could provide valuable data regarding the nature and extent of the problem as well as possible responses to reduce incidences of crime as well as levels of fear. Research-based evidence could play an important role in directing policy, strategies, and implementation, both at a national and local level. There seems to be a much larger body of research available on crime in public transport in developed countries such as the USA, Canada and the UK than in developing countries, including South Africa. In particular, international research on crime in public transport is increasingly focussing on the mezzo (neighbourhood) and micro scale (specific hotspot, e.g. transport intersections or bus stops), rather than the city. Studies focussing on particular stations or bus stops and their physical characteristics, assist in identifying specific problems and enable the development of appropriate design interventions. Similar research focussing on the South African context would be extremely valuable.

- **Policy and strategy development**

Comprehensive national policies and strategies could provide much needed guidance and aid the coordination of attempts to increase levels of safety in public transport. In addition, context specific, local level strategies that are integrated with other local strategies and development plans are critical in addressing crime problems holistically. Strategies specifically aimed at the planning, design and management of the physical environment should be linked to other strategies dealing with law enforcement and social crime prevention. Given the fact that that crime on public transport impacts on the wider community, community safety initiatives need to also address crime on public transport in order for them to be effective.

- **Implementation**

Policies and strategies need to be effectively implemented in order for them to have an impact, and to this end implementation plans and guidelines could be useful tools. Such tools may provide guidance with respect to the process of implementing a strategy or crime reduction initiative, or it could provide specific, practical guidance on,

for instance, the design of the physical environment or good practice with respect to crime reduction initiatives. A number of examples of targeted support regarding crime prevention in public transport do exist, but these are primarily aimed at developed countries, e.g. the web-based toolkits developed for the UK (www.crimereduction.gov.uk/toolkits). A high-profile transport initiative such as the Gautrain project provides the ideal opportunity for South Africa to develop and test focussed crime reduction measures from the outset. In particular, this project could demonstrate the value of developing appropriate guidelines for the design of facilities such as train stations and parking lots, as well as the existing urban environments affected by the system.

This paper demonstrated that interventions in the physical environment could make a significant contribution to providing a safer journey as envisaged in the South African public transport action plan. Appropriate planning, design and management initiatives, combined with law enforcement and social crime prevention approaches, are sure to contribute to a reduction in the levels of crime as well as the fear of crime. What is clear, though, is that the provision of a safe journey should be regarded as a non-negotiable priority, demanding a concerted effort by all role players including national government departments, transport authorities, municipalities, the private sector and commuters.

REFERENCES

- Atkins, S, 1990. "Personal security as a transport issue: a state of the art review", *Transport Reviews*, 10 (2) p. 111-25.
- Brantingham, P, and Brantingham, P, 1991. *Environmental Criminology*. Prospect Heights, IL:Waveband Press.
- Burger, J, 2007. "Security arrangements for the 2010 FIFA Soccer World Cup" in *Crime Quarterly*, 19, ISS Publication: Pretoria.
- Clarke, R,V, (ed) 1997. *Situational Crime Prevention - Successful Case Studies* (2ed.) New York: Harrow and Heston.
- Clarke, R,V, and Cornish, D,B, 1985. "Modeling Offenders' Decisions: A Framework for Research Policy." In *Crime and Justice: An Annual review of Research*, 6, Tonry, M. and Morris, N. (eds.), Chicago: Chicago University Press.
- Clarke, R,V, Brantingham, P, Brantingham, P, Eck, P, and Felson, M, 1997. "Designing out crime", *Critical Criminal Justice Issues*, number 158837, <http://www.ncjrs.org/pdffiles/158837.pdf>
- Cohen, L, and Felson, M,F, 1979. "Social Change and Crime Rate Trends: A Routine Activities Approach," *American Sociological Review*, 44 (4) p. 588-608.
- Cozens, P, Neale, R, Hillier, D, and Whitaker, J, 2004. "Tackling Crime and the Fear of Crime While Waiting at Britain's Railway Stations", *Journal of Public Transportation*, 7 (3) p. 23 – 41.
- Crime Reduction Toolkits*, "Public Transport", accessed on 19-02-2007, www.crimereduction.gov.uk/toolkits.

- Department of Transport, 2003. *The First South African National Household Survey*. Pretoria: Department of Transport.
- DETR (Department of the Environment, Transport and the Regions). 1999. *Personal Security Issues in Pedestrian Journeys*. London, UK: DETR.
- Du Plessis, A, and Louw, A, 2005. "The Tide is Turning", *SA Crime Quarterly*, 12, Pretoria: Institute for Security Studies.
- Jeffery, C,R, 1977. *Crime Prevention through Environmental Design*. Beverly Hills: Sage Publications.
- Jacobs, J, 1961. *The life and death of great American cities*. New York: Vinatge Books.
- Kruger, T., Landman, K. and Liebermann, S. 2001. *Designing Safer Places: a manual for Crime prevention through planning and design*. Pretoria: CSIR.
- Laycock, G, 2005. "Defining Crime Science", in Smith, M.J. and Tilley, N. (eds) *Crime Science: New approaches to preventing and detecting crime*, Crime Science Series. Devon UK: Willan Publishing.
- La Vigne, N,G, 1996. "Safe Transport: Security by Design on the Washington Metro". In *Preventing Mass Transit Crime*, Clarke, R.V (ed), Crime Prevention Studies Clarke, R,V, 6, Monsey, N.Y.: Criminal Justice Press.
- Liebermann, S, Landman, K, Louw, A, and Robertshaw, R, 2000. *Making South Africa Safe: a manual for community based crime prevention*. Pretoria: CSIR Publication BOU / E 0002.
- Loukaitou-Sideris, A, Liggett, R, Iseki, H, and Thurlow, W, (2001). "Measuring the effects of the built environment on bus stop crime", *Environment and Planning B: Planning and Design* 28 p. 255 – 280.
- Louw, A, and Shaw, M, 1997. *Stolen Opportunities: the Impact of Crime on South Africa's Poor*. ISS Monograph 14. Pretoria: Institute for Security Studies.
- Mistry, D, 2004. "Falling crime, rising fear" in *Crime Quartely*, 8, Pretoria: ISS Publication.
- Newman, O, 1972. *Defensible Space: Crime Prevention through Urban Design*. London: MacMillan.
- News 24, 2007. "Good public transport on the way". http://www.news24.com/News24/South_Africa/Politics/0,,2-7-12_2090004,00.html, accessed on 2007/04/03.
- Newton, A,D, 2004. "Crime on Public Transport: 'Static' and 'Non-Static' (Moving) Crime Events", *Western Criminology Review*, 5(3), 25-42.
- Page, O, Moeketsi, P, Schurink, W, Molefe, L, and Bruce, D, 2001. *Crime and crime prevention on public transport*. Pretoria: UNISA Press.

Root, A, Schintler, L, and Button, K, 2000. "Woman, travel and the idea of 'sustainable transport', *Transport Reviews*, 20(3) p. 369 – 383.

Schönteich, M and Louw, A. (2001). *Crime in South Africa: A country and cities profile*. ISS Paper 49, (April) Pretoria: ISS Publication.

Shaw, M. and Louw, A. (1998). *Environmental design for safer communities: Preventing crime in South Africa's cities and towns*, ISS Monograph Series, 24, Pretoria: ISS Publication.

Smith, M,J, and Clarke, R,V, 2000. "Crime and Public Transport", in *Crime and Justice – A review of research* 27 p. 169 – 233.

Smith, M,J, and Cornish, D,B, 2006. *Secure and Tranquil Travel: Preventing Crime and Disorder on Public Transport*, Jill Dando Institute of Crime Science, University College London.

Van der Reis, A,P, 1982. *Black commuting in Pretoria: Attitudes towards Crime Levels*, Special Report BCP 10, Pretoria: CSIR.

Van der Reis, P, 1997. "Transportation Surveys Among Illiterate And Semiliterate Households In South Africa", Conference on Transport Surveys: Raising the Standard, Grainau, Germany, E-C008