Title: Crime on Public Transport

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Synonyms: Public transit, Mass transit, Rapid transit, or Public transportation

Overview: This entry examines how crime concentrates and is potentially specialized within and around the public transport system. It begins by defining public transport for the purposes of this discussion and outlines why this is an area of importance. It also discusses some of the reasons why there is a paucity of evidence into crime on public transport and the unique challenges this system poses for identifying and analyzing concentrations of crime. It describes how public transport networks provide a number of unique settings (places and times) across which crime and disorder can occur. These include in and around stations and stops and on board moving vehicles. The public transport network brings increased accessibility to places, and this creates distinctive patterns of offending. This entry reviews the international evidence for the manifestations of crime in these situations and considers the theoretical reasons and explanations for such events and the extent to which these may be specialized. It then examines the prevention opportunities offered by the crime concentrations and specializations identified and some emerging trends and future avenues for research.

Crime on Public Transport

1. Introduction

This entry considers crime and disorder on public transport, the ways in which it concentrates and the extent to which it is specialized. It begins by defining public transport for the purposes of this discussion and emphasizes the importance of reducing crime and disorder and associated fears of personal security on the public transport network. It will then review the empirical evidence for the concentrations and specializations of crime and disorder evident on public transport systems and assess the theoretical perspectives that can be help understand and explain these patterns. It will describe how the public transport system provides unique settings (places and times) that subsequently create distinctive crime patterns that encompass a variety of changing environments. These include stations, stops and interchanges and "en route" and '"line of route" offenses, and therefore, a description is given of how the public transport network serves settings that incorporate both static and dynamic situations of crime and disorder (Newton, 2005). This entry will explore how concentrations of crime manifest across each of these settings and highlight some of the unique challenges faced when attempting to explain and prevent crime on the public transport network. It will conclude by discussing some emerging trends and avenues for further research in this field.

For the purposes of this entry, the term *public transport* is used to capture what North American readers may think of as "public transit", "mass transit", "rapid transit" or "public transportation" systems. There is no clear consensus of a definition of public transport, and therefore the following are adopted as forming key components of the public transport system:

- Public transport is used to describe a system used by the public, often a means of transporting passengers in mass numbers, generally a for-hire system that occurs across a fixed route or line.
- It consists of a range of transport modes, including railway (railroads, light rail, metro/subway/underground railway, high-speed rail, and intercity rail), buses, trolleybuses, and trams; ferries; coaches; airlines; water taxis, gondolas; and pedi cabs.
- Bicycle hire schemes are becoming more popular in urban areas and could be included as part of the public transport system although they are not discussed here.
- In some regions "collective transport" is also considered as a form of public transport, for example a minibus or fixed group taxi (e.g., South America and Russia).
- "Paratransit" is an expression sometimes used in areas of low demand and for people who need a door-to-door service.
- There are distinctions between multimodal and intermodal systems: a multimodal system accommodates different modes of transport, whereas an intermodal system ensures strategic connections between different modes.

- There is a debate as to whether or not taxis are part of the public transport system although they are not discussed within the context of this entry.

1.1. Why Examine and Reduce Crime and Disorder on Public Transport?

There are a number of reasons why understanding and preventing crime on public transport should be of interest. Firstly, public transport has an important role to play in reducing social exclusion, by providing access to facilities such as work, health, leisure, and employment. In Great Britain, for example, the 2011 National Travel Survey estimated that about one quarter of households do not have access to a car. There are also obvious environmental benefits in promoting public transport as a means of sustainable travel, and hence, the use of public transport may be expected to grow over time rather than decrease. A number of surveys have identified that fear of crime and personal security is a major inhibiting factor to the use of public transport, second only in many surveys to reliability and accessibility. Indeed, a report in the UK by the then Department for Environment, Transport and the Region (DETR) suggested that reducing fear of crime could increase patronage by three percent at peak and ten percent at off peak times (Newton, 2004). One of the clear messages from this is the significance of making passengers actually feel safe, and Smith and Clarke (2000) suggest this should be a mandate shared across all transport systems.

It is evident in the literature concerned with the fear of crime, however, that reducing actual levels of crime does not necessarily equate to reductions in people's perceptions of crime risk. The factors that contribute to worries over personal security on public transport are not disparate from those associated with fear of crime outside of the transport network, and the dynamics of vulnerability on public transport include variation by gender, ethnicity, age, familiarity with, and levels of public transport usage (Yavuz and Welch, 2010). However, there are some features of the public transport network that are perhaps distinctive. As will become more apparent in this entry, the dynamic nature of the public transport system creates unique environments, through which specific modes of transport traverse, transporting potential targets and victims, on a system that passes through areas with different levels of crime risk, and therefore continuously receives different inputs and outputs over time. This creates a unique, potentially specialized, and certainly concentrated arena within which crime and disorder may occur.

1.2. Context and Scope

While the definitions of public transport alluded to earlier suggest that it is a for-hire system of mass transportation used by the public, in its broadest sense the public transport journey should actually be viewed in its entirety, what the then DETR called the "whole journey approach" (Newton, 2004). This not only consists of travel on actual vehicles or different modes of transport, but when waiting at a stop, station, or interchange, and also walking to and from stops and stations

at the start and end of journeys, or even potentially transferring between different modes of transport. As suggested by the DETR, negative experiences across any part of the journey might actually influence fears of personal security and change travel patterns, perhaps to the extent that passengers may stop using public transport altogether. While the notion of the whole journey approach is critical to public transport travel, the majority of the limited empirical evidence is focused on the “at stop or station”, “en route”, and “line of route” offenses. Therefore, the content of this entry will naturally focus on these situations in detail - there being a paucity of research into the *walking* parts of the journey. In addition, as much of the literature is focused on bus and rail travel, the scope is also limited to these two modes of transport. However, many of the concentrations and potential specialism’s identified and the theoretical concepts used to explain these can be readily applied to other parts of the public transport network and other modes of public transport vehicles. Finally, this entry does not examine security at a wider level than crime and personal security, and therefore, terrorism is excluded from this discussion.

2. The Nature and Extent of Crime on Public Transport

There is limited information available as to the extent of crime and disorder on public transport and, furthermore, discrepancies exist as to the actual levels of crime and disorder on public transport. The most likely reasons for this include the following: the multiple agencies responsible for maintaining and operating the various systems, the lack of standardized reporting and recording of crime and disorder on public transport, difficulties in analyzing the available data, and the different policing and security arrangements in place across the network, and the likely levels of underreporting on the system (Newton, 2004).

One of the definitive references in this area (Smith and Cornish 2006) identifies six categories of crime that are typically evident on the public transport network, these being antisocial behavior; crimes against passengers including theft, robbery, and assault; crimes against employees including assault and robbery; vandalism and graffiti; and line of route crimes which are offenses along routes that cause delay or affect safety. In addition, it is suggested that it is extremely useful to distinguish “en route” offenses from those at stations and stops (Newton, 2004). This entry will review the empirical evidence of the concentrated nature of these six types of offenses, both in time and place. It demonstrates the spatial and topological patterns of crime evident on the public transport network, and it is contended that these are a result of the movements on the system in terms of offender and targets, and the increased accessibility it provides to the places the network serves. A question this raises is whether this leads to unique opportunities for offenders to specialize on the public transport network.

There are sizeable differences in published figures regarding the extent of crime and disorder on public transport. A study in the UK by the Department for Transport (DfT, 2010) suggested that during 2008-2009, there were 12 crimes per million passengers on the bus network and 13 crimes per million on the underground and over ground services. This also indicated that the rate of offenses varies by type of crime and based on 2006/2007 data, estimating that the number of offenses (per million passenger journeys) were as follows: on the rail network, 11.9 for violence against the person offenses against passengers, 4.5 against staff, and 39.1 for theft from person and robbery offenses. On the bus network, the rates were 9.0 per million passenger journeys for violence against the person offenses against passengers, 4.1 against staff; and 15.01 for theft from person and robbery offenses. By contrast, a study in Los Angeles suggested an average of 1.55 crime incidents per 100 rides (Loukaitou-Sideris et al, 2002). A 1990s passenger study in England and Wales by Easton and Smith indicated 5% of passengers had been threatened with violence and 4% had been the victim of theft, and in Victoria in Australia, a 1990s study by Carr and Wright identified 690 crimes against persons on public transport over twelve months in the context of 300 million passenger journeys per year. While discrepancies will exist in crime rates across countries and different cities, it is suggested those found with the figures presented here are due to differences in recording and reporting practices rather than international or even national variations.

There are additional difficulties with estimating and identifying the levels and extent of crime and disorder on public transport. Levels of underreporting are unknown, and Levine, Wachs, and colleague examined this in California in the 1980s and found figures may underestimate actual levels of crime by 25 to 30 times. There are clear difficulties in identifying true levels of crime and disorder on public transport, and, for reasons that are explored next, this is perhaps more problematic than the issues associated with levels of underreporting found in police-recorded crime figures in general. However, it is believed that levels of crime on public transport have, for the most part, followed the internationally declining levels of crime rates in general (Transit Cooperative Research Program, 2009).

2.1. The Limited Evidence Base

There are a number of reasons why there have been limited studies into the nature of crime and disorder in public transport. These in part relate to the fragmented nature of regulation across the various systems, the number of agencies and organizations who are responsible for providing and regulating public transport services, difficulties in capturing reliable and accurate information on crime and disorder incidents, the different bodies involved in policing and the security of public transport systems, the levels of underreporting of crime and disorder on these networks, and the analytical challenges faced when attempting to investigate patterns of crime and disorder on public

transport (Newton, 2004). While the following examples relate to the organization of public transport in the UK, similar fragmented systems exist internationally.

An examination of public transport on the rail network in the UK reveals the wide range of organizations responsible for delivering this system nationally, these include the following: National Rail, the Train Operating Companies who operate under Strategic Rail Franchise Agreements, Network Rail who are responsible for national infrastructure, and the Rail Safety and Security Board (set up to improve the health and safety performance of the railways). There are also some privately owned systems such as light rail (e.g., the London Docklands and the Manchester Metrolink). However, on the rail network there is a consistent set of information collated on crime and disorder as the British Transport Police (BTP) are responsible for policing the rail networks, and they provide monthly and annual figures on crime on the network (both on trains and at stations).

On the bus network this system is more fragmented in the UK. Outside of London (which is regulated by Transport for London), the deregulation of buses which came into force in 1986 as part of the Transport Act 1985 has resulted in a number of operators who can provide commercial or subsidized services. In the large metropolitan areas, these are coordinated by the seven Passenger Transport Executives (PTEs), and outside of these areas Local Authorities regulate buses. In one of the large metropolitan areas, there were over 50 bus operators providing services, and outside of London there is no requirement to report crime incidents on buses, and this often relies on the good will and time of both operators and police forces. Indeed in 1998 only 19 police forces (less than 40%) provided such information, and only 16 bus companies out of over 100 made returns on staff assaults (Newton, 2004). While this information is dated, there is no evidence to suggest that the situation has improved considerably, and a key factor is that in the UK (and elsewhere) there is no statutory dedicated category for “crime on public transport” to be recorded as an incident in its own right by the police. Some operators retain the services of private security contractors to maintain safety and security on their systems which adds a further layer of incident reporting (which may or may not be passed onto the police).

The third and final complication that contributes to the paucity of evidence on crime and disorder on public transport is the unique analytical challenge that it poses, particularly when attempting to identify spatial concentrations of crime. In addition to the lack of consistent information available, the range of settings and environments in the transport network within which crime can occur presents a major analytical challenge. Examples include the following: criminal damage at a stop or station at an unknown time, graffiti or the slashing of a seat on a vehicle at both an unknown time and location as it may only be reported when a bus or train returns to the depot at the end of the day, and pocket picking that occurs as part of a passengers journey, somewhere between departure and arrival. In addition it is very difficult to pinpoint the location of a crime that occurs on

a moving vehicle, although there are studies that attempt to analyze dynamic crime events (Newton, 2005), for example the development of “hot routes” or “hot lines” (Newton, 2008; Thompson et al, 2009).

3. Theoretical Perspectives: Why and How Is Crime Concentrated on Public Transport?

The environments of the public transport networks are in some ways distinct from other areas of public space due to the locations they serve, the dynamic nature of the system, and the different inputs and outputs to it. However, there is support within the literature for adopting a number of well-established theoretical criminological perspectives to examine crime on public transport. Some of these can be used as a framework for examining the manifestations and concentrations of crime and disorder evident on public transport. A useful starting point is to consider the problem analysis triangle (Clarke and Eck, 2005) as a framework for conceptualizing patterns of crime and disorder on public transport, and three questions arise here:

- Who are the potential targets and victims, and who can act as capable guardians?
- Who are the likely offenders, and who can act as handlers to restrain the otherwise motivated offenders?
- What places and times (settings) within the public transport network create juxtapositions of offenders and victims that increase or reduce crime opportunities, and who can act as place managers for these?

3.1. Victims, Targets, and Guardians

There are a number of potential victims or targets that may experience crime and disorder on the public transport system. The most obvious of these are passengers and staff, and it is important to consider this in the context of all peripatetic staff who may work on the system. The risk to each of these varies across different sections of the transport network. For example, relative to the risk of crime for passengers during busy periods, the risk of crime is likely to be quite different for lone passengers at night and lone staff (at day or at night) who may or may not be carrying cash. There is also risk to the infrastructure of the transport system which includes criminal damage and graffiti of vehicles, stops, and stations, or damage to fixed lines (e.g., obstacles placed on routes which cause damage or obstruct routes) or even theft of copper lines (discussed later under emerging trends).

3.2. Offenders and Handlers

There is a paucity of empirical evidence about the nature of offending on public transport, in particular the characteristics of the offenders, and whether they perhaps specialize in crime committed within the public transport network. Who are the potential offenders and why they may be present at particular places and times, and do they use the public transport network as part of their journey to crime? This is an under-researched area that warrants future research as discussed at the end of this entry. A 1990s study by Belanger, one of the few conducted on this topic, examined the extent to which public transport may facilitate the movement of criminals between areas. This study looked at the travel behavior of a sample of serious offenders across the New York City subway system and found that the distance travelled from home or anchor point did vary and that 56% of offenders travelled within their own borough to commit crime, 29% travelled to Manhattan from another borough, and 12% travelled from one borough to another excluding Manhattan. This raises the question of whether the distance travelled to commit crime differs for those trips that public transport is used and those for which it is not.

3.3. Places, Times, and Place Managers?

When examining the places on the public transport network where crime might occur, it is useful to categorize these settings by the three components of the transport journey: the walking, waiting, and en route settings. There is empirical evidence that crime is concentrated at a small proportion of transport stations, stops, and hubs (Smith and Clarke 2000; Loukaitou-Sideris et al, 2002; Newton, 2004; Smith and Cornish, 2006; and Newton and Bowers, 2007) and "en route" at particular sections of public transport journeys (Newton, 2008; Tompson et al, 2009). These concentrations vary by both crime type and time of day, as will be discussed in more detail below. The *waiting* environment may also include transfer between transport modes within a transport interchange or hub, and this is perhaps distinctive from transfer between transport modes that occurs outside of transport interchanges as this may be classified as part of the *walking* environment. These external transfers and the *walking* environment more generally, for example, from point of departure to stop, or stop to place of arrival, are unlikely to be recorded as part of a public transport journey, and limited information is available on crime and disorder in these components of the public transport journey.

The above discussion has considered who are the likely targets and potential offenders on the public transport and the places, times, and situations where these are more likely to coincide. The opportunities this offers for prevention will be discussed in more detail later but include consideration of the following: who can act as capable guardians for these different targets, who may be an appropriate handler for offenders, and the importance of place management and environmental in reducing crime and disorder on the public transport system.

3.4. Crime Pattern Theory and Routine Activities

Two theoretical perspectives that can readily be applied to the public transport network are crime pattern and routine activity theories. Crime pattern theory defines people's activity spaces in terms of three main components: nodes, paths, and edges (Clarke and Eck, 2005). The term node is used to describe where people (both offenders and victims) travel to and from, and the idea of personal activity nodes closely resembles the ideas of a person's routine activities. These nodes are linked by paths, which would include roads or other transport routes. Edges define the boundaries around nodes, within which people reside, work, or are routinely active in. According to crime pattern theory, crimes are likely to concentrate where offender routine activity spaces intersect with those of suitable targets of crime.

Nodes and paths are particularly relevant in the context of the public transport network, with nodes represented by rail stations and bus stops (and so on), while transport routes correspond to the paths that connect the transportation nodes. Edges may even delineate the boundaries of the public transport network, and there may be regulated and controlled entrances and exits to the system (Newton, 2004). Edges can be considered the boundaries of the public transport network, but these become less geographically distinct when considering the walking component of the whole journey approach discussed earlier. Another concept that has been applied to transport nodes is the notion of risky facilities (Clarke and Eck, 2005), further discussed below.

The transport network can be thought of as having the potential to shape the activity spaces (and hence the spatial and temporal concentrations) of offenders and potential targets and thus to increase the potential of crime occurring on the network. There is clear evidence, reviewed below, of crime concentrations on the network at two of the critical sections of the network, in and around stations and stops (nodes) and crime en route (paths). Moreover, the way in which the transport network influences the potential for crime is not limited to where it occurs but also what types of crimes are most likely to occur and potentially which offender specialism's may occur in and around the system.

3.5. Crime Attractors, Crime Generators and the Public Transport Network

A final key theoretical perspective is notion of "crime attractors", "crime generators" and "crime neutral" areas (Clarke and Eck, 2005). A crime generator is an area that attracts large numbers of people for reasons other than to commit a crime. At particular times and places, this concentration of victims and offenders produces an unplanned opportunity for offending. Crime attractors are places that offenders visit due to knowledge of the area's criminal opportunities, such as bars and prostitution areas, in order to commit a crime. A key question of relevance here is do places on the public transport system act as crime attractors or crime generators. Research has suggested that

transport hubs can act as both attractors and generators and that this varies by time of day (Smith and Cornish, 2006).

The work of Levine, Wachs, and colleagues in California in the 1980s found certain crimes, for example rape, homicide, and robbery were more frequent when there were low pedestrian traffic, low surveillance and many concealed areas (Newton, 2004), that is, when guardianship was likely to be low or where it was impeded by the design of the location. A study of graffiti and vandalism by Wilson and Healy in the 1980s on the rail network in New South Wales, Australia, found offenders were principally juveniles and that most damage occurs in unsupervised areas during off peak hours. Burrell (2007) highlights that violent crime on public transport tends to happen in the late evening/night-time when there is less supervision, whereas pocket picking and purse snatching are more frequent during the rush hour. These are all indicative of transport hubs acting as both attractors and generators of crimes (for different crimes and times of day).

In order to examine these theoretical perspectives in more detail and also highlight the empirical evidence that exists as to how crime is concentrated and potentially specialized on the transport network, two of the key settings of the public transport network will now be examined in more detail: the first of these is crime in and around stops and stations, and the second is “en route” crime on a moving (and sometime stationary) vehicle.

4. Crime at Stops and Stations

A number of studies have assessed the importance of environmental design, particularly in relation to underground railway stations including the Paris Metro (Clarke, 1996), the Metro in Washington DC (La Vigne, 1997), and the metro in Gothenburg, Sweden (Ceccato et al, 2011). Similar studies have examined over ground rail stations in the country Wales (Cozens et al, 2004). A clear finding from these studies, particularly in relation to the Washington DC example, was how unusually low crime rates (compared to other systems and local crime rates) could be explained by reference to aspects of environmental design.

In addition to the internal design of stations, there have been studies that examine the link between rail stations and their external environments or nearby surroundings. Studies in Chicago (Clarke, 1996; Block and Block, 2000) into street robbery in the vicinity of rapid transit stations found that the street robbery is concentrated near (but not immediately outside) rapid transit stations, and that robbery varied temporally and concentrated late at night (between 11:00 and12:00 p.m., with a peak time of 2:00 a.m.). Block and Block contend that although the behavior of potential victims and offenders and the time of day and other individual features of each situation will affect risk, it is the place and the surrounding or nearby space that is crucial in bringing all these factors together

in what they term the environs of rapid transit stations. A recent doctoral thesis by Herrmann (2011) who examined robbery hot spots in New York provides support for this notion, and this research demonstrated that although all identified hot spots were near subway stations, those that occurred during the daytime (3:00 p.m. peak time) were near high schools but that those occurring in the nighttime (1:00 a.m.) were not, instead being around late night businesses.

In addition to studying crime near railway stations, there have been a number of studies that have examined crime and disorder in and around bus stops and bus stations (Loukaitou-Sideris et al, 2002; Newton; 2004; Newton and Bowers, 2007, Vu, 2009). Loukaitou-Sideris examined the link between criminal activities at bus stops and associated nearby environmental characteristics in a North American city and found that the ten bus stops with the most crime accounted for 18% of all crimes, and although passenger levels at these stops were high, other nearby stops with high patronage exhibited little or no crime. They identified that there were an abundance of "*negative*" environmental factors and a general lack of "*defensible space*" near these high-crime bus stops, including liquor stores, bars, check cashing establishments, seedy motels, pawn shops, vacant lots/buildings, and adult book stores and movie theaters.

This is supported in the UK by Newton and Bowers (2007) who found criminal damage to bus shelters was concentrated at a small number of bus shelters. Examining the criminogenic and socioeconomic characteristics of places, they also identified that bus shelter damage was related in known and predictable ways to characteristics of local neighborhoods. Indeed shelter damage risk was higher in areas with high levels of antisocial behavior, a lack of capable guardianship, and the presence of youths. For example, they found a positive relationship between bus shelter damage and proximity to parks, children's play areas and schools (particularly those whose unauthorized truancy levels were above the national average), and a negative relationship with the presence of pubs and bars, nightclubs, and off-licenses (late night liquor stores).

An interesting feature of the two above studies if that some of the so-called negative environmental features found to increase crime in the US study, namely, the presence of off-licenses (liquor stores), actually reduced the risk of crime in the UK study. This finding is explained best when considering that the US research examined crimes such as assault and violence, whereas the UK study was concerned with criminal damage to bus shelters. The late night land use associated with these features increased violence and assault in one study, but actually served as a deterrent for criminal damage in another study, by increasing the number of persons in the area, whose presence therefore may have actually served as a form of guardianship against criminal damage to bus shelters. It also serves as a clear example of how spatial crime concentrations vary by type of offense and time of day.

5. "En Route" Crime

Few studies have examined crime that occurs while a public transport vehicle is moving, predominantly due to the analytical challenges this poses. A 1970s Home Office study by Mayhew examined damage to buses in Manchester (UK) and found that damage was greatest on buses without a conductor, more prevalent on the upper decks of the bus and especially at the rear of the bus. On buses with a rear staircase, graffiti and vandalism was more prominent upstairs and at the front of the bus. This study concluded that a lack of supervision was an important factor in the occurrence of vandalism and graffiti on buses, supporting the idea that a lack of guardianship or place management on the transport network acts a contributory factor to criminal damage. This study considered the internal environment of a vehicle, but not the external environments it may pass through. There are, however, some studies which have examined how the external environments a moving vehicle passes through may influence crime risk on that vehicle.

Crime and disorder is concentrated on particular routes and sections of routes on the public transport network. A 1980s study by Pearlstein and Wachs examined crime on the bus network in California and concluded that only 88 out of 233 routes (less than 40%) experienced serious incidents of crime and that crime mostly occurred on routes that traversed areas with high crime rates. They also found crime was disproportionately high during late evenings when violent crimes were more prominent and that theft and robberies were most likely during the rush hour (Newton, 2005).

Additional studies, such as those by Levine and colleagues in California in the 1980s, support the notion that incidents of bus crime are highest for bus routes that pass through high-crime areas. Moreover, Newton (2008) identified that not only is bus-related crime positively correlated with levels of crime in the areas a bus traverses, and that the risk of crime on those routes that traverse high-crime areas is greater than on other routes, but furthermore that the risk propensity is heightened on routes that go through high-crime areas and have a higher numbers of stops within these areas (multiple entry and exit points). It should be noted that this risk is not just confined to the passengers and staff who travel on public transport but also to the actual infrastructure of the public transport network.

A study into damage to the actual vehicles themselves, using reports on missiles being projected or thrown at buses included objects such as rocks, bricks, and eggs for example, (Newton, 2004) also demonstrated that the risk was highest to those buses passing through high crime areas. In this situation the theoretical edges or boundaries to the public transport network become more blurred, and the interaction between the internal (inside the vehicle) and external environments (that a vehicle passes through) is different to the inputs and outputs of passengers and staff to the

system (which occurs at transport stops and stations or nodes). The latter can be regulated by controlling the entrance and exit points to the system (by offenders of victims), while the former cannot, and this provides an additional layer of complexity to the study of crime on the public transport system.

6. Crime Concentrations on Public Transport and Prevention Implications

Perhaps a key significant feature of the concentrations and potential specializations of crime and disorder that are evident is the prevention opportunities these offer. Crime and disorder has been shown to be concentrated within certain components of the public transport network, and these include along particular route sections of journeys; nearby and within certain stations and stops; and within particular parts of stations and interchanges; and these all vary by offense type and time of the day. There is also a clear interaction between the movement of vehicles and the environments through which they traverse, and regulating access to and from the system (the entry and exit points) can serve as a useful mechanism for reducing crime and disorder on the network.

The design, environment, and management of stations and stops can influence crime rates, and there is a growing evidence based on how improvements to the design of public transport infrastructure can reduce crime levels (Clarke, 1996; La Vigne, 1997; Smith, 2008; Ceccato et al, 2011) including better lighting and illumination and removing dark corners and hiding places. Furthermore ,effective place management of stations (Clarke, 1996), the introduction of capable guardians (Newton et al, 2004), and the use of effective handlers (Van Andel, 1989) can all significantly reduce risk on the public transport network. Many aspects of the public transport network have regulated entrance and exit points that connect the internal environment of a transport journey with its external environment. These offer clear prevention opportunities but these must be contextualized within an intelligence-led or problem-solving approach (Clarke and Eck, 2005), and as already demonstrated in this entry, these differ significantly for offense type and time of the day.

The design of transport systems and the introduction of new technologies can also influence crime rates. For example, a study on the London Underground in the 1980s by Clarke and colleagues revealed that the introduction of subway slugs (foil wrapped around 10 pence coins to create fake 50 pence coins) became widespread as new automated vending machines were introduced. Remedial measures were highly effective in reducing this, but greater anticipation and investment at the design phase may have prevented this. Interviews by Ekblom with offenders on the London Underground (Clarke and Eck, 2005) revealed that offenders would stand by signs warning passengers of “pickpocketing in operation,” as after reading these signs passengers would

frequently pat their own pockets, which was of considerable assistance to the offender in identifying which pockets a wallet was likely to be in.

7. Emerging Issues and Future Debate

There are a number of recent developments that should be mentioned, as they offer insights into potential avenues for further research into crime patterns on the public transport network. One of the issues that was raised but perhaps not answered within this entry is whether public transport systems act as a generator or attractor of crime, or perhaps both. A recent paper (Bernasco and Block, 2011) investigated the distribution of street robberies in Chicago and how this was influenced by crime generators, crime attractors, and offender anchor points. They suggested that stations provide an increased level of accessibility to areas and found that street blocks with a station had four times as many robberies as similar street blocks without them. However, they suggested that the impact of stations alone was not the significant factor, and the combined impact of a number of additional features near to stations was also contributory. Indeed, research in both Vancouver and New Jersey (Sedelmaier, 2003) found no evidence that, on their own, the introduction of a new station to an area increases crime risk.

Block and Block (2000) describe the environs of transport stations and importance of the nearby environment, and Robinson and Giordano (2011) discuss the importance of what they term spatial interplay, the interaction of land uses in relation to crime incidents around transport stations. As described in the Herrmann (2011) study, it is not just the location of subway stations that influenced when and where street robbery occurred but also what was near to the station. A clear area for future study is this spatial interplay of nearby land use with the public transport environs.

Newton et al (forthcoming) examine this interaction by considering pocket picking and theft on the London Underground, and the relationship between what happens above the ground and below the ground, which could be termed the transmissibility of crime on public transport. This research shows that there are distinctive patterns of theft, both outside underground stations and on the network itself. The interesting issue here is that these are policed separately (the underground by British Transport Police and above-ground by London Metropolitan Police), yet offenders do not distinguish between these two settings, in the same way they do not distinguish between the geographical boundaries of different police forces. This demonstrates the need for information sharing between these policing units and also potentially the benefit of joint operations.

It is clear that the environs of public transport and the potential transmission of crime around this system is an area for further research, particularly when examining how offenders may potentially

use the public transport as part of their journey to and or from crime. This is a key question in examining the spatial and temporal patterns and concentrations of crime evident on public transport and perhaps, moreover, in determining the extent to which offenders may specialize on public transport networks. There is little information at present as to whether offenders specialize on the public transport network, and if this is different to, or perhaps an extension of their usual offending patterns, and to contextualize this within the journey to crime research.

The recent work of Reynald (2011) into the relevance of guardianship raises new issues that are particularly relevant to public transport. One of the findings of her research is that the three key aspects of capable guardianship are the willingness to supervise, the ability to detect potential offenders, and the willingness to intervene. Familiarity of context was found to be a very important component of this, but the public transport network provides a dynamic environment which is constantly changing. This therefore makes transport nodes highly dynamic contexts for which perceptions of familiarity may not be time stable. When on board a moving transport vehicle, new people may enter or leave at each stop, and a vehicle may move through both familiar and perhaps unfamiliar environments. This is certainly an area that warrants future research activity.

More recent technological innovations including the use of mobile apps such as barcode scanners and the potential for introducing new payment forms (such as scanning mobile phones to pay for entrance/exit to transport systems) may also alert offenders to more attractive handsets and smart phones, akin to the Ekblom interviews with offenders who stood near signs warning of pocket picking. Gentry (2012) examined theft of electronic products on the Massachusetts rapid transit subway and found that theft of electronic devices was concentrated at a small number of stations. As new technologies are introduced to the system, these will offer new opportunities for offending that should be researched.

A final issue that has become increasingly important on the public transport network is line of routes offenses, not “en route” offenses that occur on a moving vehicle, but those that disrupt lines and delay journeys, for example, damage and obstructions to lines and routes (Smith and Clarke, 2006). The increasing value of metals has resulted in a growing increase in the number of metal thefts, and the rail infrastructure in particular has seen a dramatic rise in the number of copper cable thefts over recent years (Sidebottom et al, 2011). This is an example of an emerging and specific type of crime that may be expected to be concentrated spatially, particular to only a few types of environments, the transport system being a key one, and a crime that is hence likely influenced by criminal opportunities associated with the configuration of the transport network.

Related Entries

Crime Location Choice Essay (00440 77/77)

Crime Science (Essay 00552 82/82)

Crime Prevention through Environmental Design (Essay 00550 80/80)

Criminology of Place: Places and Our Understanding of the Crime Problem (Essay 00663 97/97)

Hot spots and place-based policing (Essay 00264 262/262)

Intelligence-led policing (Essay 00270 286/286)

Routine Activity Approach (Essay 00586 498/498)

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