SAFETY IN TRANSIT ENVIRONMENTS

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ABSTRACTS

Apple picking: The rise of electronic device thefts in Boston subways
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As mobile technology advances and increases in popularity – and the demand for WiFi and cell phone coverage booms, theft of electronic devices is becoming a growing problem in several metropolitan public transportation systems around the world. Using transit police reports, this study applies crime opportunity theories and situational crime prevention techniques to better understand which factors increased electronic device theft in Boston subway stations from 2003-2011. This approach addresses a gap in previous studies regarding crime on public transportation, robbery and larceny on subways and electronic device theft – as none of the literature has focused specifically on the problem of electronic device theft in subways. The findings from negative binomial regression models suggest that precinct crime rates and subway station characteristics may help transit police understand why certain subway stations serve as activity spaces for electronic device theft. Relevant recommendations and policy implications are discussed.

Keywords: electronic device theft; transit crime; environmental criminology; situational crime prevention.

Crime, transportation and malignant mixes
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To examine how public and private transportation processes can lead to "malignant mixes" of daily activity, affecting specific crime patterns. Methods: These ideas are applied to robbery in the Bronx, New York and aggravated assaults in or near parks in Houston, Texas. This paper interprets local crime maps by considering how crime clusters in terms of proximate land uses. Results: In the Bronx, robbery hotspots are quite different in the afternoon compared to the nighttime. Afternoon hotspots are interpreted as a malignant mix between a problematic high school and a near-by Subway station. Nighttime robbery hotspots occur where concentrated bars mix with near-by Subway stations. In Houston, parks have more crime if traversed by roads, and less crime if streets only go to their edges. Conclusions: Without denying the importance of connectivity for crime, we suggest paying greater attention to combinations of land uses or activities. Malignant mixes prove quite useful for interpreting local crime maps and considering how transportation interacts with other activities, thus affecting crime.

In and Around: Exploring potential attractors and generators of theft on the London Underground
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Interstitial Crime Analysis (ICA) enables a robust systematic analysis of pocket-picking offences at different settings on the London Underground. Risk is shown to be non-uniform

and time specific. Evidence is presented of a transmission of theft risk, between transit stations and nearby environs; evident especially at peak-travel times. Potential attractors and generators of theft are explored through regression analysis. Accessibility, mixed land use, and nearby theft rates, variables selected from both the internal and the external transit settings, are shown to be significant predictors of theft. This offers additional support for a transmission of risk between the two settings. Stations are classified into six typologies of risk; high, medium, low, and intermittent; based on both theft incidence and theft rates. Predictor variables of theft are more influential at stations with characteristics of crime generators; than those with crime attractor traits. Implications for crime prevention and future research implications are discussed.

Keywords: Mass Transit, Theft, Attractor, Generator, Risk, Public Transport, PickPocketing.

Assessing guardianship opportunities at underground stations
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Previous research has shown that environments of transport nodes influence guardianship, which in turn influences crime levels. The aim of this article is to examine whether opportunities for guardianship are affected by the social and physical environment of underground stations and their surrounding areas. Surveillance and visibility possibilities are used as key indicators of the environment's capacity to influence opportunities for guardianship in underground stations. The analysis is based on fieldwork data from Stockholm's underground stations, socio-economic data from the neighborhoods they are located in, and logistic regression modeling. Findings show that the presence of people, formal guards, good sightlines and overviews, and tools for surveillance (like mirrors and CCTV units) promote the potential for guardianship in underground stations, even after controlling for endogeneity (guardianship still reflected the presence of people, formal guards and mirror placements). The article finishes by presenting how guardianship opportunities can be improved as a means of reducing crime at transport nodes.

Key words: safety, transport nodes, surveillance, visibility, Stockholm.

Street robbery and public bus stops: A case study of activity nodes and situational risk
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Existing scholarship suggests that crime concentrates in close proximity to public bus stops. However, the importance of particular combinations of crime generators and attractors in the proximate environment around public bus stop locations has not been empirically documented. The current study uses a matched sample of robbery and robbery-free locations in Henderson, Nevada to extend previous research by addressing three questions about street robberies around bus stops and the other activity nodes in the proximate environment. First, what type and combination of activity nodes are most commonly found in the proximate environment of street robberies? Second, what is the likelihood that a public bus stop is part of this proximate environment? And third, what is the relative risk of robbery victimization across different environmental contexts that are defined by the combination of activity nodes when public bus stops are also present/absent? Findings are discussed in terms of crime prevention strategies and future place-based research.

Keywords: public transportation and crime, conjunctive analysis, risky places.

Crime in and Around Metro Transit Stations: Exploring the Utility of Opportunity Theories of Crime

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This paper takes a retrospective look at two studies pertaining to crime in and around Washington Area Transit Authority (WMATA) commuter light rail (Metro) stations. The first study by La Vigne (1996) was conducted to explore the degree to which crime occurring on the rail system was suppressed by the system's design characteristics, management approach, and maintenance practices. The second study (La Vigne and Lowry 2011), launched over a decade later, sought to identify factors associated with the incidence of crime in the above-ground areas served by Metro, and primarily in the commuter parking facilities within which the majority of serious crimes experienced by Metro occurred. Both studies employed opportunity theories of crime and principles environmental design as the guiding theoretical framework with which to pose research questions and illuminate analysis results. Comparing, contrasting, and synthesizing findings across these two studies indicates that this family of theories has high predictive and explanatory power. In particular, these studies underscore the importance of a comprehensive crime prevention approach that includes enhancement of both surveillance and access control.

Public transit riders in New York city: Using area-level data to identify neighborhoods with vulnerable riders

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Public transit operators can use information linked to transit-user residence to assist their security efforts. Using a routine activity theoretical perspective to contextualize the importance of looking at characteristics related to target vulnerability (e.g., being a "transit captive") and to self-perceived vulnerability and fear of crime, the current study examines area characteristics in New York City (NYC) by analyzing the American Community Survey (ASC) 2010, 5-year average data aggregated by census tract. An exploratory principle component analysis identified areas where two distinct types of transit-rider characteristics tend to cluster. NYC Police Department Compstat data for 2010 were explored to provide a backcloth for understanding the types of crime problems vulnerable transit riders may be confronting in local-area precincts. The findings from this study can be used by operators and others to look at building guardianship and assisting in place management in areas with high concentrations of potentially vulnerable riders.

Keywords: public transport, routine activity theory, transit captives, American Community Survey, New York City

Crowding at bus stops in London: self-organization behavior in relation to pick pocketing warning messages

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Crowding at bus stops can create a criminogenic environment where contact crimes can occur. To address this, warning messages aimed to encourage self-protective behaviours are

employed. However, to ensure that interventions influence the micro-level interactions that characterise crowding behaviour, a more detailed knowledge of crowding is needed. This paper aims to provide a first step to using data collected from laboratory experiments to address questions from crime and transport research. The experiment considered differences in interpersonal distances to further analyse crowding behaviour. A threshold measure of closeness was developed, and used to analyse changes in interpersonal distances. Findings indicate that during boarding, passengers experience the highest crowding levels, and that passengers are capable of modifying their behaviour in light of warnings. To conclude, implications of identifying boarding as a problem area, and the effectiveness of warning messages as a situational crime prevention tool are discussed.

Key words: Transport crime, Crowding, Bus stop, Warning messages, Experiment

Assessing the use of navigation system for visually impaired persons' perceived safety
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This study empirically investigates the case of visually impaired persons and the possible effects of a tailored pedestrian navigation system on their mobility. Interview results indicate that with information provision about the built environment and public transportation, positive potential effects include: a greater degree of perceived safety, an increased ability to travel alone and in unplanned or unfamiliar situations, and prioritizing public transportation over special transportation services. As such, ICT may serve an integrity-enhancing function by improving the possibility of leading an independent and autonomous life. While generally optimistic about the possibilities mobility-enhancing ICT presents, the participants also emphasize that ICT, even when universally accessible, is not a silver bullet. As such, this study serves to remind us that a coordinated effort on multiple fronts is vital in addressing users' needs and meeting broader social goals such as social inclusion and the accessibility of transportation, technology, and information.

Key words: ICT, mobility, perceived safety, independence, visually impaired users

Fear and safety in transit environments from the women's perspective
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Past research has shown that the fears and concerns of transit passengers about safety influence their travel decisions. While the relationship between women's fear of crime and public space has been the focus of considerable research, transit environments – which are especially threatening to female passengers – have received much less attention. This study examines the issue of women's safety in transit environments through a comprehensive review of the literature on the topic and in-depth interviews with representatives of 16 national women's interest groups in the US. Interviewees argued that women as a group have distinct safety/security needs and are often fearful of transit settings with specific social and physical characteristics. Frequently, their fear leads them to adjust their behavior and travel patterns and/or avoid certain travel modes and settings, at certain times. This situation is more acute for particular groups of women, who because of age, income, type of occupation, sexual preference, or place of residence may be or feel more vulnerable to victimization and harassment than others. The women interviewed outlined a series of design, policing, security

technology, and education/ outreach strategies that would make women riders feel safer in public settings.

Key words: Women, safety, transit environments

The impact of crime and neighborhood enclosures on the travel behavior of residents and transport patterns in South Africa
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Crime and the fear of crime remain comparatively high in South Africa. One of the responses includes the closure of existing neighbourhoods. This paper focuses on the impact of crime and the fear of crime on the travel behaviour of residents and transport patterns in and around enclosed neighbourhoods. The paper draws on a study that established the extent of enclosed neighbourhoods in the City of Tshwane and then focussed on a few neighbourhoods to measure the physical impact of neighbourhood closures through an understanding of the distance and time residents spend on roads, as well as the travel behaviour and perceptions of households in these areas. The study indicates that people's responses to security has an influence on general transport patterns in the city, as well as individual travel behaviour and that both of these are modified in response to crime and the fear thereof in South African cities.

Key words: crime in South Africa; neighbourhood enclosures; impact on travel behaviour and transport patterns

Expectation and perception of crime and disorder events in railway stations
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This article assessed the expectation and perception of crime and disorder events experienced in railway stations in Tokyo, Japan. The events included a wide variety of negative experiences, from difficulty purchasing a ticket to being a victim of a terrorist attack. In this study, two types of questionnaires were used. One included questions about the expected frequency and unpleasantness of events passengers might encounter at the station, and the other comprised questions about how often passengers had encountered such events and how unpleasant they were. The methodology was based on the linear mixed regression model. The findings showed that the discrepancies between the expected and experienced unpleasantness were salient when it came to rare events. The results also showed that the experienced frequency of the event was a significant predictor of the unpleasantness of the event. Measures to improve people's comfort when they use railway stations were discussed.

Keywords: railway station; unpleasant events; responsibility attribution; frequency of experience; linear mixed model

Journeys to crime on a newly-introduced transport system
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The introduction of a new public transport system may impact crime patterns in the neighborhoods that the system serves. Specifically, residents in the newly-served neighborhoods may be wary that new access may introduce non-local offenders to previously unexplored 'hunting grounds.' A less common concern, but an equally important consideration, is that the system will deliver new targets to offenders already active in the station neighborhoods. This study seeks evidence that a newly introduced light rail transport system contributes to journeys to crime in a city in the northeastern United States. Chi-square analyses of local arrest data found little evidence that the new system had introduced non-local offenders to its constituent neighborhoods, but may indicate contributions of larger-scale established systems. These findings will be important to transport planners and crime scientists alike, as this evidence may help to reframe thoughts about transport system impacts on local crime.

Keywords: Public Transport, Journey to Crime, Routine Activity, Crime Pattern Theory, Transport Introduction

Adolescents' fears of violence in transit environments during daily activities
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Children use public transportation frequently but little is known about how safe they feel while doing so. We investigated how safe children felt from the risk of being assaulted while in different modes of transportation during daily activities. Methods: Children between 10-18 years old were recruited in Philadelphia, Pennsylvania, USA and interviewed with the aid of a GIS about their activities, between waking up in the morning and going to bed at night, on a recent day. Children reported how safe they felt as they travelled using a 10-point item (1=very unsafe, 10=very safe). Ordinal regression was used to estimate the probability of perceiving different levels of safety based on different modes of transportation. Results: Among 153 randomly selected subjects, routes taken during daily activities ranged from 0.1–13.2 street miles (median=2.7) and included between 1–4 transportation modes (median=2). Three-quarters (75.8%) felt less than very safe (ie, <10) at some point while traveling. Perceived safety did not vary by mode of transportation during daylight hours. However during nighttime hours, the probability of reporting a safety of >8, for example, was 0.94 while in a car and 0.88 while on a bus but was 0.78 while on foot and 0.54 when on a subway or trolley. Also during nighttime, perceived safety was lower among older children. Conclusions: Efforts that target transportation environment-related risk factors are warranted to help children feel safe during daily activities.