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CRIME PREVENTION IN FRANKFURT'S TRAIN STATIONS

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by

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Abstract

This project, prepared for Worcester Polytechnic institute (WPI) in conjunction with Technische Universität-Darmstatd (Darmstadt, Germany), will examine the crime in Frankfurt's train stations and passengers' fear of it, and propose solutions to reduce them. Working from observations, interviews, ethnography, and surveys, we will determine why the crime is occurring at these stations and what crime prevention practices the City of Frankfurt is using to reduce these crimes. We will propose solutions based on 1) The Broken Windows Theory, 2) Crime Prevention Through Environmental Design (CPTED), and 3) crime prevention through increased enforcement.

Authorship Page

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Executive Summary

The "Crime Prevention in Frankfurt's Train Stations" project was completed cooperatively with Technische Universität Darmstadt. The project was designed to measure the amount of crime in Frankfurt's train stations and propose solutions to reduce it.

Data collection methods used in this project are ethnography, interviews, naturalistic and participant observations, and surveying. In addition to these methods the Schrägometer was used in coordination with a physical survey to evaluate all of Frankfurt's train stations.

The analysis of data revealed that many of Frankfurt's train stations had problems with drugs and vandalism. This information was determined from multiple methods, indicating that the results were correct. In addition, major jurisdiction problems were also discovered during our research. There were several companies responsible for crime in various locations throughout the city's transit systems. Complications in jurisdiction commonly resulted.

Recommendations for this project included several solutions to crime throughout the transit system. The primary recommendation is to implement the Broken Windows Theory in Frankfurt as used by the New York City Police Department. In addition, unification of a policing force must be realized, or the concept of hot pursuit must be implemented. Other recommendations include a complete redesign of the Eschersheim station using Crime Prevention Through Environment Design.

1.0 Introduction

The subject of this Interdisciplinary Qualifying Project (IQP) is the perception of personal safety and crime among passengers using Frankfurt's train stations. Every day thousands of commuters use Frankfurt's train transportation systems to commute locally, domestically, or internationally. In general, passengers are filled with a sense of fear that primarily derives from disorderly people, and crime (Kelling and Wilson, 1982). It is also important to note that disorderly people are not necessarily criminals. While the term "disorderly persons" can describe violent demonstrators and indecent exposures, it can also describe homeless persons, loud drunks, rowdy teenagers, and the mentally ill. Furthermore, the fear of crime among passengers is increased due to the nature of train stations, which is inviting to criminals. Train stations attract criminals due to the abundance of people, easy mobility, and open exchanges of money. By removing passengers' fear of disorderly persons and crime, safer stations are created and passengers feel more relaxed.

Currently, New York City implements several practices that are greatly reducing their crime rates and creating a positive sense of personal security among the passengers of New York City's train systems. These practices include increased law enforcement and implementation of both the Broken Windows Theory and Crime Prevention Through Environmental Design (CPTED). Similarly, the City of Frankfurt is practicing crime prevention and fear reducing tactics in their train stations. However, Frankfurt may be able to benefit by using some of New York's other crime preventing tactics.

We used several methods to complete the research necessary to reduce crime and fear among passengers in Frankfurt. These methods were deep ethnography, interviews, naturalistic observations, participant observations, and a survey.

The Schrägometer is a tool developed specifically for this project. This tool is used to evaluate train stations according to "The Broken Windows Theory" and Crime Prevention Through Environmental Design (CPTED) standards. The data required for evaluation by means of the Schrägometer is collected through naturalistic observations and physical surveys. A description of the Schrägometer is located in our Results and Data Analysis sections. Through these methods we hope to obtain significant data to offer proposals that will benefit a wide range of people.

A project based on the personal safety of passengers is in the interests of a large number of people. Thousands of commuters travel on Frankfurt's trains each day, all of whom are benefited by safer stations. In addition, by proposing solutions based on crime prevention practices of the United States, policing agencies in Germany are able to see what practices the United States is using, as well as their results.

In conclusion, detailed proposals on how Frankfurt and New York may benefit from each other's practices have been created and are located in the Recommendations and Conclusions portion of this project.

2.0 Literature Review

Before we could propose solutions to reduce the crime and the passengers' fear of it in Frankfurt's train stations, we acquired knowledge of several important subjects. We became familiar with the practices of crime prevention that the police in the United States are currently using, as well as design practices of urban transportation systems. A clear understanding of these topics allowed us to make the most effective proposals to reduce the crime and fear in Frankfurt's train stations.

Safer stations benefit all law-abiding citizens. If passengers feel safer about the stations, they will use them more frequently. This creates increased business for the train stations and the stores within them.

2.1 Train Stations

There are no standard criteria for the design of train stations (Lawson, 1992). Train stations are designed to allow traveling passengers to enter and exit trains as quickly and easily as possible, so their architecture and size are chosen to best suit their needs. Train stations have several types of trains to accommodate. These include light commuter trains, heavy trains, street trains, and subways (Lawson, 1992). Train stations may be designed to accommodate a single type of train, or they may provide service to several types of trains within one station. One example is New York City's Grand Central Station, which on its upper level has Amtrak heavy trains and has light trains of the Long Island Railroad (L.I.R.R) and New York City subways on its lower level (NYPD, 1999). Regardless of the station type, there are numerous design characteristics that are commonly found at train stations.

The interior designs of train stations have many common characteristics. Many of these characteristics are used in a majority of train stations, while some may

be found in only a few stations. Some larger train stations have stores and shops within them for passengers to purchase newspapers, periodicals, and concessions. New York City's World Trade Center and 33rd Street stations have shopping malls built within them. Often, train stations contain ticket-vending machines and ticket booths. Depending on the type of station, escalators, stairwells, and elevators may exist to get passengers to the various levels of the train station. Also, most train stations provide public restrooms and information booths. In addition to interior characteristics, train stations also have several common exterior characteristics as well.

There are several design characteristics that are commonly found on the exterior of train stations. Windscreens and vestibules that shelter passengers from the weather are just a couple of these characteristics. They may also have benches for waiting passengers. The designer's ability to combine any number of these, as well as the interior characteristics, makes train stations extremely diverse. Although no two train stations are identical, all train stations have certain qualities that make them appeal to crime (Newman, 1972).

There are several characteristics of train stations that invite crime. The most important of these characteristics is the large number of potential victims, ease of escape, the open exchanges of money, and the presence of status symbols (Mladnich, 1996). Due to the presence of these characteristics, train stations are subject to every type of crime. These crimes vary from the more minor crimes of graffiti and vandalism, up to murder (NYPD, 1999). Therefore, train stations are not exempt from any type of crime.

A train station has several characteristics that allure such a wide variety of crimes, the first and foremost being a large amount of people (Brennan and Zelinka,

1998). During rush hour, thousands of people fill the stations and are crammed into train cars. When this occurs, pick pocketing and theft are crimes commonly committed. In an overcrowded train, brushing against other passengers is inevitable, and the feeling of a pickpocket's hand in a passenger's pocket is assumed to be nothing more than the result of crowded trains. Overcrowded trains and stations can also provide an additional advantage to criminals (NYPD, 1999). Crowded stations not only allow crimes to occur more readily, they also aid in the criminals' escape. Criminals have the advantage of easily disappearing in a crowd of hundreds of passengers (Newman, 1972). Even if the criminal is spotted while the crime is being committed, a criminal is more than likely to lose his pursuers in a crowd of people (NYPD, 1999). However, people are not the only characteristic of train stations that aids in a criminal's escape.

Specific characteristics of each station can permit a criminal to escape. In a busy station, criminals can change to numerous trains and travel several miles in only a few minutes (NYPD, 1999). At a less crowded rural station where trains do not run continuously, criminals are also at an advantage as they may run down the tracks or into the nearby woods (Mladnich, 1996). Along the tracks and woods are areas in which law enforcement agents have little ability to patrol or to pursue fleeing criminals (NYPD, 1999). Numerous police departments, including the New York City Police Department (NYPD), have policies forbidding a lone officer to enter areas like these unless a second officer is present (NYPD, 1999). Consequently, by the time a second officer arrives, the criminal is already several steps ahead of his pursuers (NYPD, 1999). Therefore, it is impossible to make a general statement as to which type of station, rural or urban, is safer for the passengers' personal security, since both are advantageous in different ways to the criminals. In general, lesser and property

crimes occur more frequently at less-frequented rural stations, while more-frequented urban stations tend to be subject to the index crimes. Index crimes are the seven crimes the United States Federal Bureau of Investigation uses as a general measure of crime. They include murder, aggravated assault, rape, robbery, burglary, larceny, and automobile theft (NYSDOCJ, 1999).

The last characteristic of a train station that is appealing to criminals is the open exchange of money and the presence of status symbols such as cellular phones and expensive jewelry. Many stations have vending machines, restaurants, and shops. These create open exchanges of money between the passengers and vendors, which in turn make the situation even more inviting to criminals. Whether a person is buying a paper or receiving their token at a vending machine, exposed money is an invitation to criminals (USDOJ, 1984). The same holds true for people possessing status symbols such as expensive jewelry, cellular phones, and even some clothing brands. For example, in New York City, muggings were occurring for the sole purpose of stealing Nike Air ™ shoes and Tommy Hilfiger™ apparel (NYPD, 1999).

2.2 Safer Stations

Police Departments of the United States are currently practicing several crime prevention and urban design tactics to create safer stations and reduce crime. Some practices are intended to alter the station's environment and structures, while others target crime itself. Crime prevention by enforcement, application of the Broken Windows Theory, and Crime Prevention Through Environmental Design (CPTED, pronounced *sep-ted*) are the practices currently in use.

2.2.1 Crime Prevention by Enforcement

The easiest and most common practice of crime prevention is an increased number of police officers (NYPD, 1999). There are two ways in which this can be accomplished. One way is to augment the entire police force with additional manpower. Increased enforcement can also occur internally. An internal increase of manpower is a common practice that divides an existing police force into subdivisions that will allow certain officers to concentrate on specific problem areas. Some examples of subdivisions are transit bureaus, traffic departments, detective bureaus, and homicide divisions. Use of this method makes passengers, vendors, and patrons feel safer due to the presence of additional police, even though crime rates may not be changing (Kelling and Wilson, 1982).

In the mid 1970's, the Newark Police Department (Newark, New Jersey, USA) took part in a government-funded project which forced motorized patrolmen to patrol on foot (Kelling and Wilson, 1982). At the conclusion of the project, the neighborhood residents showed an increase in their feeling of personal safety, even though crime rates had not dropped (Kelling and Wilson, 1982). Obviously, this practice had instilled a sense of security among the residents since the police were interacting with the neighborhoods instead of merely driving through them (Kelling and Wilson, 1982). It was the officers' presence that created this increase. The Newark Police Department concluded that police patrolling on foot were an ideal method to use in order to instill a sense of safety in communities. Though lower crime rates may instill a sense of safety in some residents, it can be concluded that police presence alone can also create a safer environment.

Hiring additional officers or having existing officers patrol on foot causes cost increases to a police department budget. Though residents often desire personal safety, they do not desire higher taxes since most state, county, and local police

departments are funded by tax dollars. Since the removal of police officers from their cars drastically reduces the area they can patrol, it creates a need to hire additional police to patrol the area no longer capable of being patrolled by the foot patrolmen. Consequently, hiring new officers is expensive since it results in additional salaries. This obstacle is currently being addressed by the use of police patrolling on bicycles. This increasingly popular practice in the United States allows more interactions between the police and the community, while providing more mobility and coverage than police officers on foot patrol (City of Austin, 1999). Police departments can also provide increased enforcement by creating individual areas of responsibilities known as jurisdictions. Jurisdictions can be created internally in a police department by creating subdivisions, as well as physically by creating natural boundaries that determine the jurisdictions.

The area of responsibility that a given police department is responsible to patrol is referred to as its jurisdiction. It also defines the area where a given police force is allowed to patrol and enforce the law (NYPD, 1999). Generally, police of one jurisdiction cannot enforce the law in a different jurisdiction if that jurisdiction is patrolled by a different police department (NYPD, 1999). However, the creation of internal jurisdictions within a police department allows inter-jurisdictional law enforcement. For example, New York City Transit cops with a jurisdiction of Manhattan subways can enforce the law anywhere in Manhattan, in addition to the subways. Additionally, they can enforce the law in another borough of New York, e.g. the Bronx. However, they do not have the right to enforce the law in Yonkers, the town adjacent to New York City. It is important to note that this is only the case in New York City. Rules and regulations may vary slightly between other state and municipal police departments.

Jurisdictions are areas a police department patrols that are designated by their administration and governing body (NYPD, 1999). Police departments' jurisdictions are most commonly decided by using previously determined state, national, county, and municipal borders. Such examples of this include The New York State Police (state), the Federal Bureau of Investigation (national), the Bergen County Police Department (county), and the New York City Police Department (municipal) (NYPD, 1999). Since police forces are funded by taxpayers within state, national, county, and municipal borders, it is logical to have these police departments only patrol where the residents who pay their salaries reside. However, creating jurisdictions based on borders is difficult due to the large size of some counties and cities.

It is often necessary to divide large cities and counties into numerous smaller jurisdictions. In a city such as New York, a single police station will not be effective due to the city's enormous population of 7,320,477 residents, and its land area of 321 square miles (New York State Department of Criminal Justice, 1999). As a result of the city's large size, the New York City Police Department (NYPD) consists of 50,000 police officers, making it the largest police force in the United States. The 50,000 officers are distributed throughout New York City's five boroughs (Manhattan, Bronx, Brooklyn, Queens, and Staten Island) in the most effective manner (NYPD, 1999). The New York City Police Department (NYPD) accomplishes this by dividing their force into ninety-seven individual jurisdictions called precincts. As previously mentioned, a police department division of this nature allows each subdivision to enforce the law within the entire city.

The police department is not distributed equally throughout these precincts. The manpower of each precinct is determined by its location, the size of the jurisdiction, and the crime rate of the area. The NYPD web page offers detailed

information on the manpower and size of each precinct (NYPD, 1999). The manpower and the area of jurisdiction of each precinct depend on demographics like population density, crime rates, and property value of the neighborhoods. The diversity of NYPD precincts is best seen by examining the demographic differences of two precincts, the 001st precinct and the 66th precinct. The 001st precinct's jurisdiction is only one-square mile in the financial district of Manhattan. This encompasses the World Trade Center and its subway station, as well as the Holland Tunnel. On the other hand, the 66th precinct's jurisdiction is three square miles and is located in a residential area of South Brooklyn, which has 200,000 inhabitants. This comparison displays how demographics determine the station's jurisdiction and size.

One concern that plagued police departments with respect to jurisdictions was the concept of "hot pursuit" (Wright, 1999). Hot pursuit is the term used to define the instance when a criminal commits a crime in a jurisdiction of one police department and then enters a jurisdiction of another police department to escape his pursuer. Although hot pursuit is not an issue among the subdivisions and precincts of a single department, it is a concern for the jurisdictions of different police departments, be it state, county, or municipal police departments. Eventually, the courts granted police departments the right to continue the pursuit into the next jurisdictions, as well as the ability to apprehend and arrest the criminal (Wright, 1999). In this instance, the crime is then considered to be a crime in the neighboring jurisdiction as well. Therefore, the neighboring jurisdiction has the ability to aid in the pursuit. However, if the criminal is apprehended, their arrest is documented and booked through the jurisdiction where the crime was initially committed. So, where the criminal is apprehended is irrelevant since the crime is recorded only in the jurisdiction where it occurred. However, one exception to that rule is the fact that United States policemen

cannot chase criminals across foreign borders. This law was created to prevent an occurrence in which United States police officers would enter into another country unknowing to the government of that foreign country. In these instances, the concept of hot pursuit is invalid (Wright, 1999). Hot pursuit is the only universal policing rule regarding jurisdictions. Rules and regulations may vary between different states and cities. Hot pursuit aids in the establishment and effectiveness of jurisdictions.

The jurisdictions of trains, which quickly travel through police jurisdictions, created a major issue within the NYPD during the early 1980's. The World Trade Center station, lies within police jurisdiction of the 001st precinct. However, once a train leaves this station, it has also left the jurisdiction of the 001st precinct. This created the concern of who polices the trains, which on a single journey travel through as many as twenty-five jurisdictions. To answer this concern, the NYPD created what is known as a transit police. Literally, the New York City Transit Police (NYCTP) patrol the areas of transportation. This includes the trains, stations, buses, and ferries.

The only difference between transit police and regular police are their responsibilities and jurisdictions. Regular police officers patrol within their precinct's jurisdiction, while transit police officers patrol the stations and tracks within their precinct's jurisdiction. Furthermore, Boston, Baltimore, New York, and Washington DC, four of the major cities lying within the most heavily traveled railroad corridor in the country (USDOT, 1999), have their own transit police.

The New York City Transit Police (NYCTP) has played a significant role in the recent reduction of New York City's crime. Currently, the NYPD has 3,000 officers assigned to policing the subways, ferries, and train stations. These 3,000 officers make up the New York City Transit Police (NYCTP) (Mladnich, 1996). The

NYCTP has responsibility of policing the United States' largest public transportation network.

The NYCTP has a large jurisdiction to patrol. New York City's Subway system consists of 230 miles of track, some of which is suspended 88 feet in the air, while some stretches of track lie 40 feet beneath the street surface (NYPD, 1998). The New York Transit Authority, who is responsible for the maintenance and scheduling of the city's transportation network, provides 468 stations to service the 3.8 million passengers that use the system daily (Mladnich, 1996). At Grand Central Station and the Times Square Station, the subways handle 100,000 passengers during the afternoon and morning rush hours alone (Mladnich, 1996). As a result of the network size, the NYCTP effectively uses its 3,000 officers by dividing them throughout the city into 14 different precincts. To become even more effective, the NYCTP has divisions that are devoted entirely to a single type of crime.

One of the most commonly occurring crimes that the NYCTP deals with is vandalism (NYPD, 1999). In the United States, vandalism is defined as a crime. Since few people are victims of vandalism e.g., owners of the vending machines, phones, and storefronts, and no passengers are direct victims of vandalism, many Americans are mislead to believe it is not a criminal offense. However, vandalism is against the law. Because of the nature of vandalism, in which there are few victims and any damage is to property, the NYPD categorizes it as a quality of life crime (NYPD, 1999).

To address the city's vandalism problem, the NYCTP created a 70-officer subdivision called the Vandal Squad. The Vandal Squad is New York City's response to the graffiti found throughout the train and subway stations and on the train cars themselves. "Everyone is the victim of graffiti", stated Vandal Squad Lieutenant

Steven Mona (Mladnich, 1996). The Vandal Squad goes after vandals as if they were robbers or assailants. In addition, "tagging" (the street slang for graffiti), has become an individual offense and is no longer classified under the broad category of vandalism (Mladnich, 1996). "Taggers" were once arrested for vandalism; they are now arrested for the more specific charge of graffiti, or "tagging." The Vandal Squad chases "taggers" throughout the city's five boroughs. Once vandals are caught, they are brought to the police station, fingerprinted, booked, and then released. If they are convicted, they will have a misdemeanor on their record (Mladnich, 1996).

In addition to cracking down on graffiti, the Vandal Squad lectures sixth graders throughout the city's school system. They portray vandalism as a crime instead of art, by explaining how it devalues property and the entire community pays for it. Graffiti, in addition to vandalism e.g., littering, property destruction, are two of the crimes that the NYPD are targeting in compliance with their interpretation of the Broken Windows Theory. By targeting these lesser crimes, they hope to prevent bigger crimes and also increase the station's overall appearance by removing them of the vandals and "taggers" who deteriorate its appearance.

In addition to the Vandal Squad, the NYCTP has a Homeless Outreach Squad (HOS). Though homeless people are often non-offensive, they create a negative atmosphere and a feeling of discomfort for most people (Andrews and Mladnich, 1999). The HOS is composed of 50 officers who deal with homeless people in a humane way. Prior to the unit's creation in 1990, homeless people were treated as offenders of the law (Stannard, 1997). For instance, homeless people would be banned from the transit station as punishment for loitering in the stations. Currently, HOS brings an average of 5,000 homeless persons to shelters and residences each year (Stannard, 1997). Since the creation of HOS, they have managed to reduce the

number of homeless deaths in transit systems from 79 in 1981, to 11 in 1997 (Stannard, 1997). They have also reduced the number of homeless persons who use the transit system as a residence from 5,000 to 750 in the same period of time (Rowland, 1998).

The last practice the NYCTP is using is the initiation of Part 1050 of the New York Code of Regulation and Rules (NYCRR). Though many acts under Part 1050 of this code are not illegal in the city, they are considered illegal in areas of public transit and may be enforced as crimes should they be committed. Some of the offenses listed under this code include the playing of musical instruments, soliciting, spitting, eating on trains, smoking, and distribution of leaflets and campaigning (NYPD, 1998). By establishing the above rules, the NYCTP have additional criminal offenses on which they can issue a summons to passengers and ask them to leave the stations.

None of the above mentioned rules are crimes in any part of the city with the exceptions of the train stations. However, they are acts that create an unsanitary environment and may cause a feeling of discomfort among passengers. By enforcing Part 1050 of the NYCRR, the police are creating a cleaner and safer atmosphere at the stations, and passengers are beginning to establish a sense of proprietary right to them (Mladnich, 1996).

The New York City Transit Police have also advertised rules, policies, and safety tips to help create a safer environment. Numerous signs banning smoking, spitting, and eating can be found within the stations and on the train cars (NYPD, 1999). Figure 2-1 shows one of these signs found in a New York City's World Trade Center subway station. The police also distribute pamphlets and post signs with recommended practices. These signs urge passengers to keep their money and valuables stored away, not to fall asleep on the train, and to stay clear of any

disruption on the train as this may be a tactic to draw the passengers near (Rowland, 1998).

The efforts of the NYCTP combined with the NYPD's interpretation of the Broken Windows Theory have played an important role in the recent reduction of crime in New York City. Increasing enforcement is one way to reduce crime and instill a sense of personal security among the residents and passengers. When enforcement is not an option a police department's application of the Broken Windows Theory can be used to achieve safer cities and to lower crime rates.

Figure 2-1 Sign Found in New York City Subway Station

Photo taken by Aaron Schräger

2.2.2 The Broken Windows Theory

Application of the Broken Window Theory is an effective way to reduce crime and to create a feeling of safety among passengers and residents. James Q. Wilson and George Kelling first stated the Broken Windows Theory in 1982 (Kelling and Wilson, 1982). The literal translation of the theory states that if a window is broken in a building and not repaired quickly, more windows will soon be broken (Kelling and Wilson, 1982). The broken window creates a sense of disorder and degradation, and a general feeling of neighborhood community is lost. Consequently, residents will no longer feel that the neighborhood belongs to them, yet they will feel that the criminals control their neighborhood. Additionally, since the crime and fear will control the

residents' actions, they will lose that feeling of community they had and develop no sense of proprietary right to it (Coles and Kelling, 1996). When a loss of community occurs, residents stop caring and expressing concern for other residents' belongings and safety, since they are only looking out for their own personal belongings and safety (Kelling and Wilson, 1982). However, if the buildings within a community are well maintained, the residents develop a sense of social order (Kelling and Wilson, 1982). If the buildings are not maintained and have one or more broken windows, people perceive that crime and disorder exist. Thus, when the broken window is not repaired, an environment of public apathy and neglect is created, which in turn invites additional crime (Kelling and Cole, 1996).

If a window is left broken, Kelling and Wilson state that it is more than likely that more windows will be broken soon thereafter. An unrepaired broken window indicates that the community does not care. Kelling and Wilson feel this signal invites people to break additional windows since it costs the individual nothing. According to Kelling and Wilson, disorder and crime are inextricably linked at a community level. On the one hand, in an established neighborhood, families and neighbors keep close watch on the other neighbors' belongings. Thus, a sense of pride and community is created within the boundaries of the neighborhood. On the other hand, as disorder takes root, families begin to worry about their own belongings at the expense of their neighbors. They become selfish with their worries and may even leave the neighborhood. Indeed, people who do not possess the ability to move away are forced to stay, e.g. the poor and elderly. However, they are victimized less by crime and they have less fear of it. Due to their inability to leave the area, they have no choice but to learn to cope with the aforementioned urban decay. Since they cannot move away, they learn to live with their environment by taking the required

safety measures of additional locks, pepper spray and mace to protect themselves from offenders, as well as staying behind locked doors (Montgomery, 1998).

Even though the Broken Windows Theory speaks of physical damage, it can aid in the reduction of passengers' and residents' fear of crime. According to the Broken Windows Theory, there is a direct relation between preventing decay of an entire neighborhood, and reducing passengers' and residents' fear of crimes (Kelling and Wilson, 1982). To prevent urban decay, the theory states that by fixing minor signs of deterioration such as broken windows, it prevents the situation from worsening (Kelling and Wilson, 1982). Similarly, the removal of disorderly people from the neighborhood creates a feeling of security among the residents (Kelling and Wilson, 1982). Such people need not be violent or even criminal, but Kelling and Wilson (1982) depict rowdy teenagers, drunks, addicts, prostitutes, panhandlers, loiterers, and mentally-disturbed as examples of disorderly people. Kelling and Wilson (1982) believe it is these lesser crimes that theoretically result in the occurrence of bigger crimes. In their theory, by reducing the number of disorderly persons or small crimes, this will prevent the increase of more violent crimes. New York City has had significant reduction of crime since they have implemented the Broken Windows Theory.

In 1993, New York City Police Commissioner William Bratton initiated the Broken Windows Theory in New York City. Since the theory was implemented, New York City's crime rates fell to a thirty-year low (Montgomery, 1998). His plan consisted of targeting the lesser crimes. He anticipated that this would prevent the occurrence of the greater, more violent crimes. He believed this would succeed because it prevents the lesser criminals from slowly progressing from petty crimes, to more serious and more violent crimes. This plan has proven successful.

After being implemented for five years, there have been significant changes in crime rates. Between 1993 and 1998 total reported crimes have decreased 40.6% (NYSDCJ, 1999). There have been 60.5% fewer murders and motor vehicle theft is down 53.8% (NYSDCJ, 1999). Overall, violent crimes declined 39.5% (NYSDCJ, 1999). Hence, New York City's interpretation of the Broken Windows Theory and their transit police force have helped instill a feeling of safety for the residents and passengers (Mladnich, 1998).

Many cities across the country have attempted crime programs based on the Broken Windows Theory. Each have met with varying levels of success (Montgomery, 1998). The most successful program has been New York City, because the NYPD has employed the theory in a different manner (Montgomery, 1998). Other cities that abandoned their Broken Windows Theory-based cleanups would perform an initial criminal crack down through areas of extensive crime to arrest obvious criminals like drug dealers and prostitutes e.g., Dallas, TX and Baltimore, MD (Montgomery, 1998). The city would then proceed by having crews of city workers make minor improvements such as fixing streetlights and removing graffiti and implement extensive projects such as the demolition of abandoned buildings. In this respect, Dallas and Baltimore were applying very literal interpretations of the Broken Windows Theory. Unfortunately, after such a sudden massive cleanup, the neighborhoods slowly deteriorated back to their previous states. By taking the literal translation of the Broken Windows Theory, the cities were constantly fixing broken windows, instead of constantly removing the criminals. In the failed attempts made by Dallas and Baltimore, the lights were getting broken as soon as they were fixed, and graffiti was being sprayed as soon as the walls were wiped clean. As a result, Dallas and Baltimore have both cast aside their respective

plans, because after an initial drop the targeted area's crime rates increased to levels higher than before the program implementation (Montgomery, 1998). In these instances, the criminals were merely temporarily displaced. After the initial crack down, the criminals returned. Since both of these programs targeted the physical destruction while only completing a one time sweep of the criminals, they both failed to accomplish meaningful and lasting change (Montgomery, 1998). Since the NYPD targeted the cause of the destruction, its approach seems to be the one that is producing lasting results (Montgomery, 1998).

New York City is applying the Broken Windows Theory in a way that has attracted attention from police departments all over the world (NYPD, 1999). In addition to a city cleanup of its deteriorated neighborhoods and stations, New York has been targeting the lesser crimes. When a person is caught panhandling, urinating in public, or jumping the turnstiles to catch a subway, that person is frisked for dangerous weapons, arrested, and always brought into the station for a debriefing. In all instances, the offenders of the law have their mugshots and fingerprints taken by the police (NYPD, 1999). In some instances during this process, the perpetrator offers other information useful to police or confesses to other crimes. Even more important is the fact that many of the people committing these lesser crimes are committing greater crimes as well (Montgomery, 1998). The apprehension of John Roister best exemplifies the concept that lesser criminals are committing greater crimes as well.

John Roister was caught jumping a subway turnstile and arrested. After being arrested, he was brought to the station, fingerprinted, and then released. Three months later, his fingerprints were found at a crime scene at a dry-cleaning establishment where the owner had been murdered. Roister was arrested again, and he confessed to

the murder as well as three other assaults. This is only one instance that the NYPD uses to demonstrate the success of the new program (Marzulli and Rutenberg, 1998).

As a result of NYPD's crack down on lesser crimes, many positive criminal behavioral changes are being seen (Marzulli and Rutenberg, 1998). In subways in 1993, one of every 438 turnstile jumpers had a loaded weapon (NYPD, 1998). Currently, that number has dropped to one in every 1,034 (NYPD, 1998). This doesn't necessarily indicate that there are fewer guns in New York, but it does indicate that less are being brought into the stations. Also, graffiti on trains is at an all time low since trains will not be put in service if they have graffiti on them.

Figure 2-2 A New York Train Station-Evidence of New York's Application of the Broken Windows Theory

Photo taken by Aaron Schräger

Since New York City's implementation of the Broken Windows Theory, the city has created a safer environment by removing minor offenders from the streets, and by making a cleaner environment. Figure 2-2 depicts the current safe and positive

environment in New York's train stations. This station has no visible litter, graffiti, or disorderly persons.

Figure 2-3 New York City Crime Trends (1994-1998)

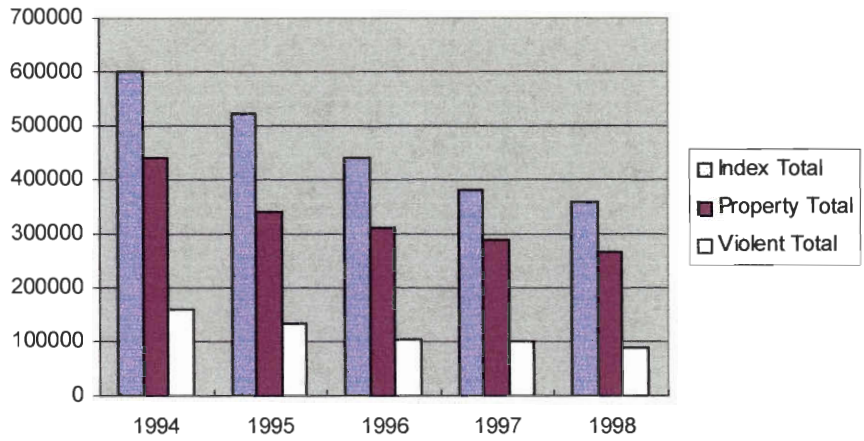


Chart created by Aaron Schräger and Dave Schmeer

Since 1993, when the Broken Windows Theory was implemented, Crime rates in New York have had significant changes. Figure 2-3 shows the crime trends for New York City since the implementation of the Broken Windows Theory. *Property total* and *violent total* indicate the number of index property crimes and index violent crimes were respectively committed. The sum of the two is given by the *Index Total,* which indicates the number of index crimes committed. All crimes are defined in Appendix B.

Figure 2-3 provides evidence of the Broken Window Theory's success in New York City. It is apparent that overall crime has been going down significantly over the last five years. Since the NYPD is targeting the smaller crimes, arrests have increased by 31.4%. This is shown in correlation with the number of crimes in Figure 2-4.

Figure 2-4 Crimes Committed vs. Arrests

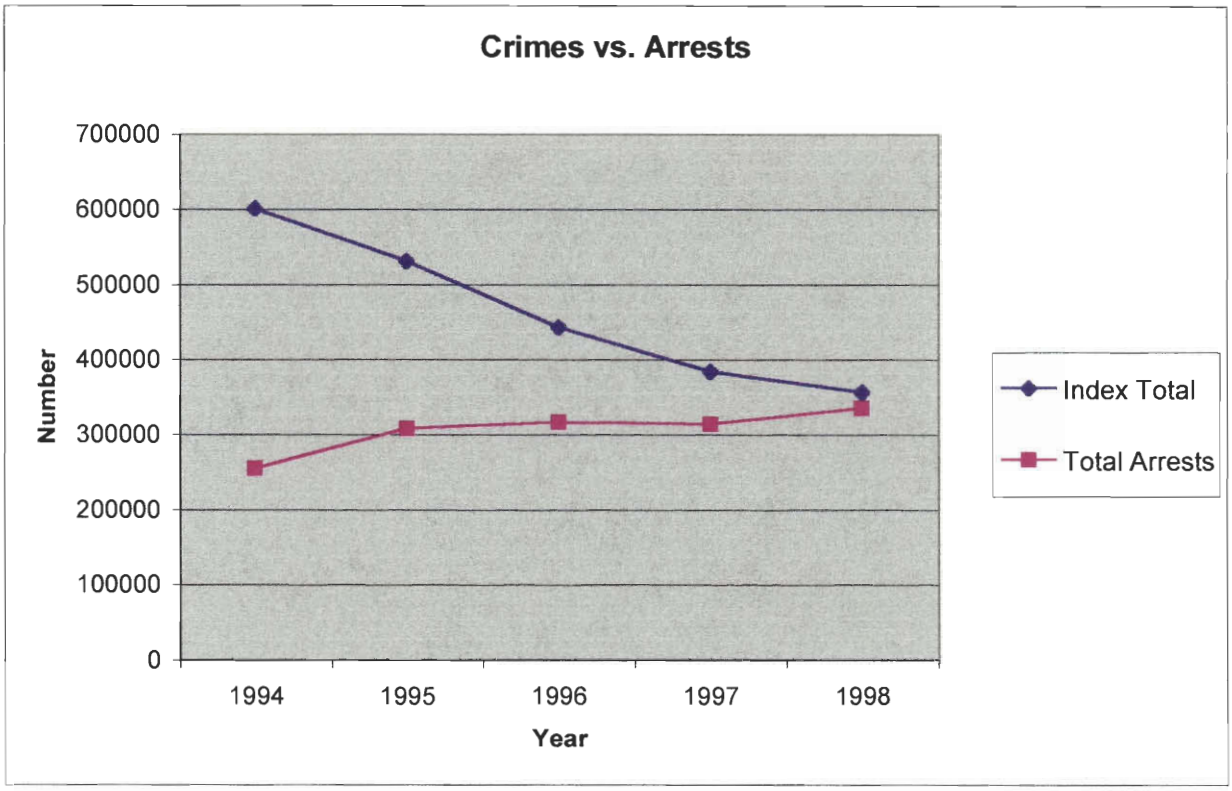


Chart created by Aaron Schräger

Figure 2-4 displays how New York's crack down results in more arrests, which in turn results in less crime. *Index Total* corresponds to the *index total* from figure 2-3, and *total arrests* are the number of arrests the NYPD made in the given year.

Many critics of the Broken Windows Theory feel it merely displaces crime (NYPD, 1999). The critics believe that the NYPD is forcing the criminals to relocate and continue criminal behavior. In addition, they feel the NYPD is not eliminating the crimes, yet spreading them throughout the city. Both figures 2-3 and 2-4 provide evidence that crime is not displaced as it is reduced entirely. Had it been displaced, crime rates would not have been affected, yet only an increase in arrests would have occurred. Critics are arguing that too severe of a crack down is infringing on the individual rights of civilians who are now subject to fines and arrest for even the smallest of crimes (NYPD, 1999). Arguments against individual rights and criticism

of the Broken Windows Theory are inevitable and will continue throughout its implementation. However, New York City sought out to reduce crime rates and instill safety in its residents, so that is what they will continue to strive at. Until it stops obtaining such positive results, it will not abandon its interpretation of the Broken Windows Theory.

The Broken Windows Theory is universal in that it can be utilized by most police forces to reduce crime and instill safety in passengers and residents. It has no limitations. It is unique because it is a mental attitude that a police department adapts to reduce crime. Therefore, it is applicable in any country. Crime Prevention Through Environmental Design (CPTED) is contrary to the Broken Window Theory because it requires efforts on behalf of the entire city planning establishments. Since it is a method that alters the physical and social environment of buildings, it requires more planning and design by the town, as opposed to strictly an effort by the police department such as the Broken Windows Theory.

2.2.3 Crime Prevention Through Environmental Design

The social and physical environment that people are exposed to can have a dramatic effect upon people's feelings and behavior and upon the way in which they view the behavior of others (NCPI, 1984). The term "crime prevention through environmental design" was first used by criminologist C. Ray Jeffrey in his 1971 book (Brennan and Zelinka, 1997). It is a crime prevention method that is becoming increasingly popular among both city planners and police forces (NCPI, 1984). This concept became a public issue in 1972 when architect Oscar Newman published his controversial book, *Defensible Space*. Newman believes that crime within residential areas was related to how well the physical environment allows residents to develop a

sense of territory within the surroundings, what opportunity the environment offers for surveillance by intruders, the location of a site with respect to transportation and surrounding land uses, and the image of the environment and the neighborhood's perspective of it (Newman, 1972). While Newman was not the first to develop this concept, he was the first to make it a public issue. Crime prevention by environmental design had been implemented as long ago as the Middle Ages. During the Middle Ages, European cities were built with moats and gates not only for military purposes, but also to allow residential access to the city excluding criminals and enemies (NCPI, 1984). During the seventeenth century when streetlights were introduced to Paris, they were designed in part to reduce crime on the city's streets (NCPI, 1984).

Before society and technology began to focus on the use of the environment as a preventative practice, crime prevention was focused on three typical philosophies. The first preventative philosophy was punitive, which in effect was an attempt to reduce crime by threatening severe punishments to criminals. The next preventative philosophy was corrective, which consisted of the amelioration of criminals' personal, social, or economic conditions. The last philosophy was mechanical, or the use of physical barriers e.g., walls and moats, that deterred crime (Breslin, 1989). While these philosophies were once effective, society began researching the relation ship between the criminal and their environment.

There is a direct connection between the environment and a criminal's intent. When criminals make their evaluation of the potential crime scene, Brown believes that criminals ask themselves several questions. How detectable am I? Can I be seen through a window or door? How far am I from the street? Are there any real barriers, locks, gates, and alarms? Are there signs of activity? Are people around? Are people

skeptical of me, or can I go about my business? To effectively prevent crime by design, it is critical to answer all these questions a criminal is asking in such a way that the criminal is discouraged from acting (Brown, 1985). The connection between the environment and crime prompted the National Crime Prevention Institute to publish a handbook on the subject.

During the late 1970's the National Crime Prevention Institute (NCPI) created the Crime Prevention Through Environmental Design (CPTED, pronounced *Sep-ted*) handbook (Caylor, 1998). This handbook gives detailed description on how proper design and effective use of the existing environment can reduce the incidence and fear of crime (NCPI, 1998).

The CPTED handbook states useful tactics on commencing a CPTED project. The CPTED handbook indicates that four factors that determine whether a criminal will commit a crime. These include distance, ease of movement, land use, and time. Distance refers to the distance the potential crime scene is from the criminal's house. Criminals feel at home within the realm of their own neighborhood because their own neighborhood is the area they know the best in terms of escape routes and familiarity of the activities and people within it. Ease of movement defines how easily the criminal can get to the crime site and how easily they can flee the scene once they commit the crime. Another motivating factor is land use. A lone commercial store in the midst of a residential neighborhood attracts crime since it is secluded. When it closes for the evening, the shop is left empty, yet all the residents are still in the area. This leaves the store subject to the crime in the neighborhood. Additionally, residential surveillance is considerably less than the surveillance provided on a busy commercial strip. The same is true when a lone residence is built in the middle of a commercial neighborhood. When the businesses are closed for the day, the residence

is left alone in a remote neighborhood with no activity. Another example of land use is how crime within 1/10 mile radius of a bar exceeds the normal level of crime in every major U.S. city (NYDOJ, 1999). This comes as a result of the abundance of disorderly people that can be found around a bar. These disorderly people include drunks, harassers, and vandals. Also, crime is higher in areas of pornographic sales and theaters. This is because quality of life crimes e.g., prostitution, exposure, and vagrancy, generally exist together with pornographic sales and theaters on a common street (NYPD, 1999).

The last factor that influences crime is time. Crimes may occur more often during morning or evening rush hours due to the additional amounts of people who are present at these times, which creates opportunities for pick pocketing. Crimes may also fluctuate around the business hours of surrounding stores, since theft is more common when they are open, while breaking and entering occurs only when the stores are closed. The day of the week also influences crime since most people are working during the week, which means that more citizens can be found in the business districts and transportation stations during the week as opposed to during the weekends (NCPI, 1984). The time of year also plays an important factor. Attempted suicide and theft are just two of the many crimes that occur more frequently in December (USDOJ, 1999). To sum up, crime is dependent upon time. The dependence on time of each crime is related to what type of crime it is. Careful consideration of these four factors will aid in a successful initiation of a CPTED project.

Once the factors of distance, ease of movement, land use, and time at a potential CPTED site have been analyzed, there are four components that have to be designed. The four key components of initiating successful CPTED projects are motivational reinforcement, natural surveillance, activity support, and movement

control (NCPI, 1984). Motivational reinforcement, often referred to as territoriality, defines how well a person establishes a sense of belonging to an area. Motivational Reinforcement is important since it makes the residents of the neighborhood feel that the neighborhood belongs to them. This is achieved by actively increasing public awareness about the CPTED project and the building itself. Therefore, establishing a sense of pride in the community can create natural prevention of crime. If successful, citizens will view crime as an affront against their neighborhood and feel victimized when it occurs, even if they are not direct victims. When this occurs, natural surveillance is created in the neighborhood, which helps in crime reduction (NCPI, 1984).

Establishing natural surveillance will also decrease the likeliness of crime since criminals do not want to be seen. When an environment is created in which criminals feel that they are easily seen, be it by closed-circuit television, police officers, or even bystanders, criminals have hesitation to commit crimes. Likewise, keeping windows clear of advertisement and reducing the amount of unnecessary walls and landscape are two additional ways of creating natural surveillance (NCPI, 1984).

Another equally important component is activity support, which brings a community together as well as marginalizing criminals by keeping potential crime scenes bustling with activities. By promoting existing activities or creating new activities, people become acquainted with one another and this helps residents develop a proprietary right to certain areas. These activities include town festivals, vendors, and permitting usage of the facilities after hours to hold meetings and activities. Ultimately, continuous activity support will allow residents to start to develop relationships with one another and instill a sense of safety. In addition to creating

natural surveillance, properly promoted activity support creates an artificial neighborhood at places such as parks, malls, and train stations (NCPI, 1984).

The CPTED handbook states that movement control is the last component that must be properly initiated. Movement control can best be described as the practice of physically designing a structure to control movement and accessibility. Using train stations as an example, passengers, including tourists who have never used a given station, should have a general feeling of which way to go towards the exits and lobbies. Also, stations should be designed with the optimum number of entrances and exits, but not a single access more than is necessary or required by code. The optimum number of exits is selected based on the number of passengers that the station will handle. Once that number has been determined, local-building codes will require a corresponding number of exits. By controlling the location of entrances and exits, the same effect will be produced. When movement and access are effectively controlled, people will follow a natural traffic flow that will lead them to the exits. When there is an excessive amount of entrances and exits, people have more ability to enter and exit, thus disturbing the natural traffic flow. Furthermore, this leaves open room for loitering. Also, people should be easily lead to exits as to not have unfamiliar passengers or tourists, wander aimlessly around a station leaving them subject to crime (NCPI, 1984).

The CPTED Handbook offers insight on the four major methods that should be used to either change the existing environment, or create a new one (NCPI, 1984). The first such method for change is the use of physical barriers. Physical barriers prevent crime by deterring criminals. Examples of this include closing streets (a component of movement control), better lighting (a component of surveillance), and seating areas (a component of activity support) (NCPI, 1984). The use of social

methods is another method of change that CPTED recommends. These include neighborhood watches and public involvement in all phases of the CPTED project as well as campaigns to promote safety and awareness (motivational reinforcement) (NCPI, 1984). It is essential that a CPTED project integrates the views and opinions of the public since the project is for their safety. This creates a feeling of importance in the residents by informing them how the project is being commenced with their input for their safety. This can help establish a natural sense of pride before the project even begins. It is also important to obtain the residents opinions towards certain recommended methods for change. By surveying the residents the designers can determine if the residents desire a method, e.g. increased surveillance by using halogen lighting, or if they do not wish to have such overwhelmingly bright lights. Since CPTED is being designed to reduce the residents' fear of crime, it is important to determine what would make them feel safer.

Another method is the use of management. Management encompasses the scheduling of all activities to create activity support, as well as rescheduling business hours to assure that all stores close at the same time. By creating uniform closing times, a single store will not be subject to late night robberies, when the others are closed. Another management tool involves acquiring variances from the town to allow the use of security guards. It is necessary to do this to receive permission to have a private company police land owned by the public or by the twon. This allows the building owners to hire their own police for increased safety (NCPI, 1984).

The last method for change recommended by CPTED is increased enforcement (NCPI, 1984). As previously mentioned, increased enforcement is an effective method of crime prevention. It not only aids in crime reduction by having more police to stop crime, but their presence alone creates a safer atmosphere (NCPI,

1984). Increased enforcement is also the easiest in terms of planning. It doesn't require redesigning or strategic planning, but simply the allocation of additional funds to employ a greater number of officers (NCPI, 1984).

Table 2-1 CPTED Components

Surveillance	Movement Control	Activity Support	Territoriality
• Improve interior/exterior lighting (P) • Add windows (P) • Remove Blind spots (P) • Provide guard kiosks (P) • Coordinate business hours (M) • Initiate neighborhood programs (S) • Assign officers to neighborhoods regularly (LE)	• Reduce number of entrances and exits (P) • Provide key access to building interiors (P) • Reduce stairway congestion (P,M) • Issue parking stickers (M) • Institute a courtesy patrol (S) • Lock store entrances during peak robbery hours (M)	• Create indoor/outdoor activity areas (P) • Provide information kiosks and historical markers (P) • Develop no-cash procedures (M) • Hold police sponsored activities for children (LE)	• Improve the appearance of the environment (P) • Personalize the environment (P) • Develop community education programs (S) • Improve police-community relations (LE) • Establish police outreach programs (LE)

P=Physical M=Management S=Social LE=Law Enforcement *Table created by Aaron Schräger*

Table 2-1 lists several examples of the four CPTED components, and the methods for change under which they are classified (physical barriers, social, management, and increased enforcement).

Preventing crime through design should include numerous people, such as the mayor, the chief of police, architects, and engineers. Since CPTED is a municipal project to prevent crime before it occurs, it is important to have a consensus on the design of the CPTED improvements. Table 2-1 displays the need for input from all aspects of the towns' infrastructure. In short, the key to every CPTED project is effective planning (NCPI, 1984).

In brief, Crime Prevention Through Environmental Design is becoming increasingly popular since it is a preventative practice that aims at stopping crime before it happens, as oppose to just reducing existing crime. Every state in the United States has experimented with CPTED projects (La Vigna, 1997). Also, some cities have implemented CPTED projects in transportation systems e.g., Houston and Washington D.C.

Both Houston and Washington D.C. have been using CPTED to prevent crime and create an environment of safety. Houston's sudden growth both economically and population created a need for additional means of transportation and new transit centers (Caylor, 1998). The city's planning board used CPTED to aid in its design of new stations. For example, Houston's Metro stations use windscreens that shelter waiting benches. Traditionally, Houston had been using solid brick walls to construct windscreens. The new design required that translucent glass blocks to be used instead of brick. These blocks allow most light to pass through in each direction. Since the blocks are not 100% translucent like a typical window, people can sit on each side of the walls without the feeling of being watched from behind. This is appealing to passengers and deters criminals; while the natural surveillance of the station has been increased, and the criminals have lost a hiding place (Caylor, 1998).

Another example is Washington DC, where renovated stations' crime rates have been extremely low in comparison to older stations. These low crime rates are being attributed to the design of the new stations and their environment (La Vigna, 1997). As a result, the Washington Metro stations are examples of a successful CPTED project. The subways were designed with long and winding corridors as opposed to the typical design that has 90-degree corners and short choppy stairwells and landings. This gives the passengers the ability to see further ahead, removes

potential hiding spots for criminals, and reduces shadows where visibility is poor (La Vigna, 1997). In addition, the main ceilings of the stations were built higher than required to promote a more open atmosphere. This instills a sense of space for the passengers, contrary to the typical subway design of low ceilings where people may feel suppressed. The Washington Transit Police are also assisted by the presence of a closed-circuit television monitoring service for security surveillance (La Vigna, 1997).

The Washington D.C. Transportation Department also has several rules and policies that aid in its low crime. They prohibit eating and smoking on the trains in order to create a cleaner environment, and there is also a ban against fast food restaurants within the stations, thus reducing litter and minimizing the open exchange of money. To keep loiterers, drunks, homeless people, and vagrants away, there are no public restrooms or lockers. Also, trains are equipped with materials to remove graffiti left by vandals. When graffiti is found, maintenance workers are contacted immediately to remove it as soon as it is spotted. This will ensure a clean environment, and the results tend to be lower crime rates on the subways. In addition, the Washington D.C. Transit Authority promotes and gives rebates on multi trip tickets to make it more appealing for the riders to buy tickets in advance, thus avoiding open exchanges of money in the subway stations (La Vigna, 1997).

One common goal of the social environmental design has been creating a more user friendly transit network. This is true in the subways and trains of cities in the Northeast United States. Advanced ticketing and better displays of the scheduling are the easiest way to ride the trains because it allows the passengers to know exactly when the trains run, which in turn prevents passengers from waiting alone and eliminates the need to muster up change when one must buy a fare. As a result, metro

cards, which allow the passenger to pay using a card that accumulates the fares much like a credit card, as well as season passes, and multi-use passes are all in use by transportation systems. Additionally, pamphlets about safety tips, and closed-circuit television are available in New York's trains to assist riders (NYPD, 1998). Attendants have been hired to help people move around in some of the city's larger stations to increase the passengers' perception of the stations.

In conclusion, Crime Prevention Through Environmental Design has shown positive results. CPTED is highly adaptable and can aid in crime prevention to any environment, social and physical, throughout the world. As a result, It is currently in use by all the countries of North America. (Brennan and Zelinka, 1997)

Increased enforcement, application of the Broken Windows Theory, and CPTED are current possible solutions to crime. Although they can all greatly reduce crime, they can never eliminate crime altogether, since none of these practices can create a social environment in which people of different races and cultures care and share responsibilities for one another. They are valid solutions for crime, but they are not the ultimate ones, as they have yet to be found (Krupat and Kubansky, 1987).

3.0 Methodology

The collection of useful and meaningful data relies heavily on a proper methodology. In this section we will discuss each method used in our project as it relates to assessing crime, and the fear of crime in the passengers at Frankfurt's train stations. These methods involve interviewing officials of the transportation system and police agencies, a deep ethnography with a transit security guard, both naturalistic and participant observation in the stations, and a survey. It is necessary to use multiple methods of data collection to minimize the amount of error in research that is intrinsic in any one method.

By using ethnography, interviews, surveys, and natural and participant observations we hope to find that all of our methods reveal similar results. This will lead us to conclude that these results are accurate. Varying results between different methods will imply that for some reason one or more of our methods did not accurately portray the circumstances of the safety in the train stations.

The first method discussed here is ethnography. Ethnography is an in-depth study of a system while completely immersed in that system. Ethnographies can be either covert or overt, meaning under-cover or open, respectively (Berg, 1998). Ethnographies often make use of a guide. A guide is a person who is part of the system that the researcher wishes to study who can help the researcher "get in" (Berg, 1998). We met our guide through an interview with the *Verkehrsgesellschaft Frankfurt* (VGF), a company responsible for the safety of the U-bahn stations. This guide, Herr Kirk Studebaker, is an American who has lived in Germany for many years and currently works as a K-9 security guard in the VGF stations of Frankfurt. He was able to become a culture broker for us,

describing the intricate details and difficulties of preventing crime in Frankfurt's stations. Because we were formally introduced to the system we wished to study, this was an overt ethnography. This means that we were open about our status as researchers in the field. Because of this openness we were able to arrange observations of what we were interested in studying. However, overt ethnographies also have implicit biases. One common bias of which we were concerned resulted from people trying to alter their normal behavior when they are alerted to the researcher's presence (Berg, 1998). To eliminate this bias it is necessary to become accepted into the system and become essentially invisible (Berg, 1998). This was accomplished in our research by personalizing our relationship with Herr Studebaker. We talked about his personal interests, such as his dog, family, and the United States. After two meetings with Herr Studebaker, it became apparent that he felt a personal connection to us because we were invited to his home for dinner. At this point we could be assured that we were accepted into the system. We then believed that any implicit bias was minimized.

There are two main types of observation used in this project: naturalistic observation and participant observation. While both include observation of informants and subjects, there are distinct differences between the two. The main difference is that naturalistic observation is accomplished without interacting with the studied system, while participant observation involves researcher interaction with the system.

In our project we used naturalistic observation to make our own assessment of the condition of all of Frankfurt's U-bahn and S-bahn stations. We toured these stations taking note of their physical design as well as their condition e.g., cleanliness. It was not important to try to become a part of the studied

environment because we were not interacting with the passengers at the train stations while making naturalistic observations.

While our naturalistic observations were done in all of Frankfurt's stations, we selected specific stations to study during participant observations. Some of these had problems with drugs, the homeless, and alcohol. In these problem stations we acted as passengers to record a typical passenger experience in great detail. Taking notes while observing would seem unnatural to the other passengers and even to the lawbreakers that we hoped to observe, so we opted to strictly observe. Being so open about our position may be damaging to the data collected in the observation session. Criminals who feel watched will most likely alter their behavior. We may seem to take on an authoritative position, urging the people in the station to act as they would when a security guard was present. To avoid this effect on other passengers we took notes after an observation session. Therefore, the observing sessions had to be kept to relatively short time spans in order to be able to record the session as accurately as possible. These observations supplemented the ethnography studies by allowing us the chance to see more than the singular perspective of the security guards patrolling the stations.

In our research we also developed a survey to be given to passengers of the U-bahn and S-bahn trains in Frankfurt. Important aspects of a good survey are brevity, clarity, and ease for the survey to be completed. A selected group of well-phrased questions should be sufficient for a survey (Salant and Dillman, 1994). It is very important that the survey can be easily completed so that the respondents will not give up, thus leaving the researcher without any feedback. This can be accomplished by asking a few short questions to which the researcher will record

the responses in order to avoid the need to return a completed survey form. In addition to the ease of the survey to be completed, brevity also determines the effectiveness of the survey. The respondents will be more likely to participate in the study if it is less obtrusive to their schedule. A survey completed in a face-to-face setting most often yields the highest response rate. This makes a face-to-face survey the best choice for this project since we need the highest number of responses in the limited amount of time that we have.

The Total Design Method is one of the best ways to improve a survey (Salant and Dillman, 1994). The Total Design Method consists of a cycle of four steps that are repeated until the survey satisfies the researcher's expectations. The first step is the design process. After designing the survey the researcher pretests it. To pretest, the researcher gives the survey to a small sub-sample of the frame in order to find any problems or misunderstandings. The researcher then analyzes the results of his pretest. Then the researcher brainstorms to find a solution to the realized difficulties. Finally, to complete the cycle, the researcher redesigns the survey and continues to pretest the survey again. When the researcher finds that his pretest has eliminated any complications, it is ready to be used (Salant and Dillman, 1994). In addition to the pretest mentioned above, the survey should be given to a colleague who is knowledgeable in the topic of surveying, as well as the field of the research in order to identify any previously unnoticed problems (Berg, 1998).

The intricacies of German and the local dialect posed a potential problem unique to our situation. Common knowledge in social science states that in order to correctly translate our survey we needed to apply a simple technique. Once the survey had been created using the Total Design Method in English, a bilingual

student at the university in Darmstadt translated it into German. It is necessary to have a bilingual student translate the survey because we do not speak German natively and may interpret the survey questions differently from the translator. Since the student is fluent in English he was able to translate our survey using correct phraseology. After these steps had been taken the survey was as close to the German equivalent of our English survey as we could make it.

An essential aspect of surveying is the Social Exchange Theory (Dillman, 1978). This theory describes a cost-benefit analysis that every person will complete either consciously or subconsciously when surveyed, thus determining whether or not the survey is worth completing. If it is not beneficial to do so, the respondent will almost definitely refuse to take the survey (Dillman, 1978). In the first moments of contact, the researcher must convey to the respondent the idea that it is important to take this survey. For example, in our survey we should try to convince the commuters of Frankfurt that their opinions will be important in considering changes to the train stations that effect them directly. By convincing the commuters that the costs of taking the survey are outweighed by the benefits, an interest in the survey is created. The response rate will be increased, in turn increasing the effectiveness of the research method.

Lastly, our final method is interviewing. Interviewing provided us with useful information that complemented the other methods we used. Gathering this information was easiest when the respondent communicated his thoughts easily. To allow the respondent to communicate their perspectives, they must be comfortable answering the researcher's questions (Berg, 1998). An important step in beginning an interview is to make a connection with the respondent by discussing a topic that interests him other than the focus of the interview. This

makes the respondent feel more involved with the question and answer process. In addition, the respondent becomes more open to other questions to which the respondent may have otherwise been closed (Berg, 1998). Another factor in improving an interview is that of question phrasing. It is possible to phrase a question so that an incorrect response is given. Also, the respondent may be offended because he misunderstood the intentions of the interviewer (Berg, 1998). It is also quite possible that the respondent does not understand the question because it is too long or confusing. These are difficulties that can possibly be avoided with thorough pretesting (Berg, 1998).

The format of an interview can vary depending on the style of questions to be asked. We applied a semi-standardized format for our interviews. A semi-standardized interview uses some preplanned questions and some probing questions. The semi-standardized format allowed us to probe certain responses. (Berg, 1998). In addition to essential questions and probing questions we used extra questions, which is a reworded essential question that is intended to bring about more detail from the respondent (Berg 1998).

Biased research can also affect results of the project. Because we could not speak German well enough, we were not able to make the contacts for interviews ourselves. This did not allow us to use reference sampling to reduce bias in selection of our interview partners. Reference sampling takes the next interviewee by receiving a reference from those who have already been interviewed (Bailey, 1982). There is also a bias implicit in the language difference. A buffer is introduced between the interviewer and interviewee. The lines of communication are not direct, and a translator was necessary for our interviews. Unfortunately, it is not possible to translate every phrase perfectly into

another language therefore a bias is introduced. One last major bias in our research was that of convenience sampling. Our survey could only be distributed where we had permission to survey. Our survey was originally intended to be used in the S-bahn and U-bahn stations of Frankfurt. We unfortunately did not have the time to get permission to distribute the survey there. Our technical advisor directed us to a school near both an S-bahn and U-bahn station in Eschersheim, a neighborhood in Frankfurt, which was willing to let us distribute the survey. However, this form of sampling for a survey is called convenience sampling, and creates coverage error in the method. Coverage error results from drawing the sample from an incomplete list of the total frame. The Eschersheim School sample included a disproportionate amount of teenagers therefore we could not detect an age dependent trend in fear of crime.

It is important to note that the methods used in this project are subjective in nature. The data is open to the interpretation of the researchers based on their experience and opinions. That is to say that any two researchers may collect the same data from identical research methods and yet draw different conclusions. For example, one interviewer may interpret the nervous reaction of an interviewee to a particular question as an attempt to conceal a secret. A second interviewer however, may think the question touches on a sensitive subject. The first interviewer would then most likely probe the topic further while the second interviewer may decide the interview should be redirected away from this topic. Both actions are based on the opinions and experiences of each respective researcher. The two differing interpretations of the same data can lead to very different conclusions.

By using the aforementioned methods, combined with the knowledge we acquired in the United States on crime and crime prevention, we could create a detailed proposal for the City of Frankfurt.

4.0 Results and Data Analysis

We presented the knowledge we acquired of train stations, the crime within them, and crime prevention practices in the United States, in our Literature Review. To complete our project, it was necessary to acquire knowledge of the same such topics and how they relate to Frankfurt, Germany. Three of the most important topics we needed to investigate were responsibility for the safety and security in trains and stations, current methods being used to reduce crime and alleviate passengers' fear, and the passengers' feelings about crime at Frankfurt's train stations.

We needed to find out who the responsible persons were for the police, the trains, and the stations. We also needed to establish a contact with these companies, which in turn enabled us to learn what was being done at the stations to prevent crime and to reduce passenger fear.

4.1 Responsibilities

Frankfurt's public transportation system is a complex network of multiple companies working together to provide transportation to the city. Immediately we learned that the transportation system is divided into several subcategories. These include ownership, maintenance, scheduling, service, security, and police. Also, we learned that Frankfurt has several transportation vehicles that make up their transportation network. These include U-bahns, S-bahns, commuter trains, international trains, strassenbahns, and buses. Definitions of the aforementioned transportation vehicles can be found in the Appendix of this report.

Once we learned of the organization, we established contacts with responsible persons for each individual company involved in the security and safety in the stations and on the trains. This consisted of the Verkehrsgesellschaft Frankfurt (VGF),

Bundesgrenzschutz (BGS), Deutsche Bahn AG Station and Service, and the Frankfurt Police.

Table 4-1 Frankfurt Transportation System

Transportation System	Ownership	Maintenance	Service	Security	Police
Buses	VGF GmbH	VGF GmbH	VGF GmbH	VGF GmbH	Frankfurt Police
Strassenbahns	VGF GmbH	VGF GmbH	VGF GmbH	VGF GmbH	Frankfurt Police
U-bahns	VGF GmbH	VGF GmbH	VGF GmbH	VGF GmbH	Frankfurt Police
S-bahns	Deutsche Bahn AG	Deutsche Bahn AG	DB Station and Service	BSG	BGS
Regional Trains	Deutsche Bahn AG	Deutsche Bahn AG	DB Station and Service	BSG	BGS
International Trains	Deutsche Bahn AG	Deutsche Bahn AG	DB Station and Service	BSG	BGS

Chart created by Aaron Schräger

4.1.1 Verkehrsgesellschaft Frankfurt am Main mbH (VGF)

The first interview we conducted was with the Verkehrsgesellschaft Frankfurt am Main mbH (VGF). The VGF is the company responsible for the maintenance and security of Frankfurt's U-bahns, strassenbahns, and buses.

When we arrived at the interview, we met with Manfred Jilg. Herr Jilg was the director of VGF's security department. Also, Herr Linek, a public relations representative of VGF, and Herr Rautschka, chief director of the VGF and Herr Jilg's boss, accompanied him. According to Berg (1998), this constituted a focus group and not an interview because the presence of others may have restricted the information provided by Jilg. We believed Linek was there to glorify his company since he did not speak and presented us with large folders filled with information on the positive aspects of transportation with VGF, all of which were irrelevant to our topic. Furthermore, Jilg was the director of the security so he had significant insight on the situations of crime and fear in the stations and on the U-bahns, while his boss Rautschka was the director of the entire company and had less specific, but broader

knowledge of the VGF. Therefore, Rautschka's knowledge was of minimal interest to us, as we wished to only obtain information regarding the security aspects. We believed his presence was to supervise his employee Jilg, and to monitor his statements. However, data that Herr Jilg provided was mostly numerical and factual, so we can assume it was relatively genuine. Although Jilg could have withheld data that would have negatively reflected his company, we feel this was not the case since he provided us with incident reports that displayed the negative aspects of crime and incidents in VGF's stations for the last seven months. This data is presented in Table 4-2.

Table 4-2 Incidents and Hausverbote at VGF Stations (Aug 98-Feb 99)

	Aug98	**Sep98**	**Oct98**	**Nov98**	**Dec98**	**Jan99**	**Feb99**
Incidents	**2338**	**3422**	**4364**	**3989**	**3720**	**3649**	**3429**
Evicted Persons	**5288**	**7752**	**10821**	**11181**	**10171**	**10804**	**10120**
Hausverbote	**22**	**15**	**12**	**12**	**14**	**7**	**6**
TOTAL	**7648**	**11189**	**15197**	**15182**	**13905**	**14460**	**13555**

Chart created by Aaron Schräger

Incidents indicates the number of times that VGF security members had to take action for first aid, information, people riding trains without tickets, or assistance in which no one was asked to leave the stations. Incidents differs from Evicted Persons, which indicates the number of times the VGF security members asked people to leave on the grounds that they violated some of the "house rules" of the station. Lastly is *Hausverbote* that can best be translated as a house banishment. *Hausverbote* are the punishments given out to persons who have been asked to leave the station three times. *Hausverbote* takeaway peoples' rights to use the trains and stations owned and operated by the VGF for times as long as one year.

Since VGF is responsible for the security of its stations, it has its own security team. This team consists of 55 members hired and trained by the VGF. Additionally, the security team has several officers who are trained dog handlers and the officers have several dogs. With the exception of the Hauptbahnhof, these security officers have jurisdiction in all stations of the VGF. Although the Hauptbahnhof houses VGF-owned U-bahn trains, this falls under jurisdiction of another company, the BSG (Bahn Schutz und Service gmbH). Additionally, in exchange for the BSG having jurisdiction in Hauptbahnhof, the VGF assumes full jurisdiction in all of Hauptwache and Konstablerwache stations including where the S-bahns are located.

An important fact we learned was how the VGF security team is not a police force, but a security unit. Therefore, they do not receive federal money to support their cause. Since the governments, both Frankfurt's and the German National government, do not provide Frankfurt's train stations with an independent police force for the sole purpose of transit police (like the NYCTP), the owners of the trains and stations are responsible for the security. Though these security teams have excellent working relationships with the local and federal police departments, they do not work in conjunction with them by any means. We were also informed that the only weapons they carry are police batons. Both Jilg and Rautschka boldly stated that they do not wish for their officers to carry guns.

The VGF security team enforces the *Hausordnungs* of the station. *Hausordnungs* are similar to private laws of the United States and are best compared to Part 1050 of the New York Codes of Rules and Regulations found in the Literature Review of this report. In the event that they are broken, they cause action by the VGF security team. These actions range from evicting people from the stations, fines, and *Hausverbote*.

Jilg showed us schedules and work plans that indicated how 30 of the VGF's 55 security officers work everyday during the 3 eight-hour shifts. They work in teams that are never smaller than two officers. An officer's shift is rotated regularly since the staff uses a 3 days of work, 2 days-off rotation. Additionally, we learned of another company that is hired by VGF, Firma Pedus. Firma Pedus provides 40 additional members that are used each day. Overall, the schedules revealed that shifts fluctuated with manpower based on need and days of the week. A large event such as a football game would require additional manpower.

After both Linek and Rautschka left the room, Jilg gave us a tour of their facilities. He took us to the VGF office of operations, which is located in the Konstablerwache station. This office was not accessible to citizens and a key is required to get the elevator to stop at this floor. We were shown the command desk at which a dispatcher from both VGF and Firma Pedus, work side by side. The only notable difference we saw was their hat color, Firma Pedus employees wear blue berets while VGF wears white berets. We were shown the effectiveness of the communications by a demonstration in which Jilg tracked down one of his teams by entering the team's two-digit code into the computer system. Since his teams are required to call in every time they enter a new station, they can be accounted for at any time of day. We were also told how the hand held radios the VGF and Firma Pedus carry link the officers to the command center who then can call the police should it be needed. At the conclusion of the tour, we were introduced to an officer named Studebaker. He was a United States citizen from California so he speaks English and he immediately expressed great interest in helping us on our project.

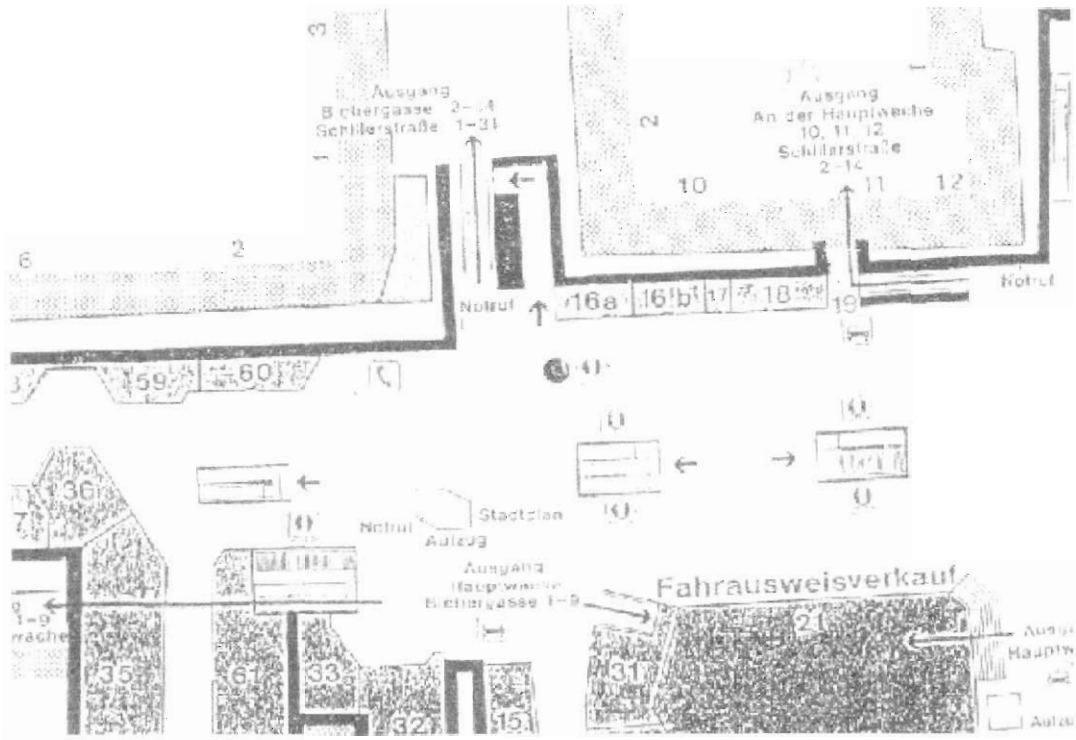
4.1.2 Making Rounds with Herr Studebaker

VGF presented us with an unprecedented opportunity to do ethnographic research through one of their workers, Herr Studebaker. Immediately after our interview with Jilg, he set up a meeting time for us to work a shift with Herr Studebaker.

The first time we met Studebaker he was in street clothes. Regardless, he took us to all the stations he patrols during his typical day. Although he was not in uniform, as we boarded the first tram one man ran away thinking that Studebaker was going to check for tickets. Obviously, the people he is trying to rid the stations of recognize him, even when he is not in uniform. He also pointed out a gentleman on the bench and indicated how this man always carries a big knife with him, and that he is one of the many regulars he sees hanging around his jurisdiction. We proceeded to the Hauptwache where he opened one of the rooms where the VGF have a phone to call in their location and a table and chairs for meetings and breaks. After he called in our location, he showed us the station itself and brought up the topic of jurisdiction. He brought us to a part of Hauptwache where the square tiles suddenly change pattern He informs us that this is an area of the station owned by an insurance company so he is not allowed to patrol here, only to walk through it. Figure 4.1 shows these tiles and how abruptly his jurisdiction stops within the station itself. He showed us a similar situation in the McDonalds in Hauptwache, which has a vestibule that he is unable to patrol. These jurisdictions can be seen in the map provided in Figure 4.2. The shaded areas in are the areas that he does not have jurisdiction in. On this map the number 19 represents McDonald's, and the aforementioned mall begins between stores 36 and 59.

Figure 4-1 Tile Floor in Hauptwache where VGF Jurisdiction Ends

Figure 4-2 Map of Hauptwache



Map provided by Kirk Studebaker

We then continued to Willy Brandt Platz and watched the events at the station. He pointed out regular junkies and dealers, then indicated that this day was a slow day. After minimal disturbances at Willy Brandt Platz, we went to Konstablerwache one

last time. This time there was an abundance of drunks and junkies loitering. We observed this area long enough to meet one of the regular junkies. He was known as Rambo, and has become such a regular drunk that he has befriended all the security officers, since they frequently have to remove him from the station . At a later time while we were walking through the Hauptwache we witnessed a passenger smoking an apparent illegal substance in an odd shaped pipe. Studebaker quickly headed toward the stairwell when he saw the offense occur, and asked the suspect to leave the station. Though the suspect was in shock, he questioned Studebaker's authority immediately, thus forcing Studebaker to show his VFG badge. Later that day, he showed us which junkies had homes that they returned to at night, and which were truly homeless. At this time we departed and he offered us the chance to come to his house for dinner, which signified that we had established an ethnographic contact. In addition, we set up another meeting time for the morning when he anticipated more crimes and criminals.

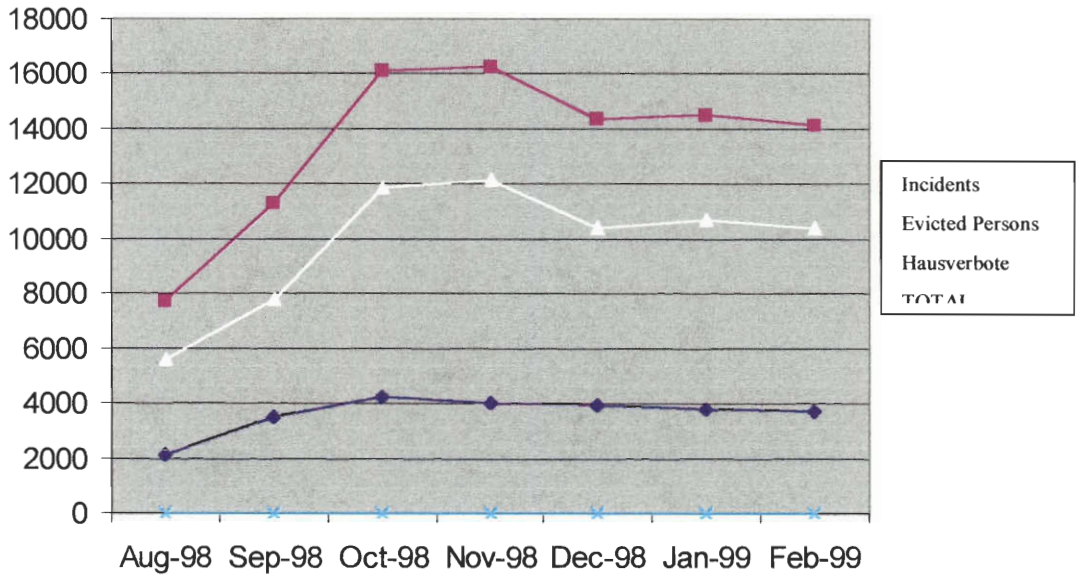
We arrived in Frankfurt shortly after 05:00 to meet Studebaker for the beginning of his shift, which happened to be 06:00 to 14:00 this day. This time Studebaker was wearing his blue uniform and white beret and was with his dog Halk and his partner Felix. Unfortunately, as he pointed out, there was little for us to see. Furthermore, he found it quite humorous how they never have an action filled day when they wanted to. Regardless, we walked his usual patrol route and could not find a single offense or disorderly person. After two hours, he decided we should try another attempt, but he recommended we work the graveyard shift, which runs from 22:00 to 06:00. So we set up yet another meeting time.

Konstablerwache was quiet and empty when we arrived on the last train. After meeting Studebaker, we watched the gates go down since the stations close between

02:00 and 04:00. VGF does this to keep the junkies out at nighttime. During this two-hour break, the VGF and some of their trainees participated in dog training. We were fortunate to be allowed to participate and watch. It took place in the parking garage of the VGF around 03:00. The training seemed very systematic, since both dogs that night went through identical drills. Furthermore, they gave hands on training to the three trainees in regards to apprehending suspects with the dogs present.

At 04:00 we walked slowly toward Willy Brandt Platz in anticipation that we might see some of the crimes and events Studebaker has been describing to us. Finally, we found junkies and perceived drug users at this station. As soon as we walked down the steps to Willy Brandt Platz, the dogs began barking and drunks and perceived drug users immediately flocked out the opposite exits. Although Willy Brandt Platz was closed, it has a design fault of having the entrance gates inside the station, which creates an area where the drunks and junkies can hide. After we exited the station, the criminals had immediately crammed into the phone booths on the street. These were areas the VGF does not have jurisdiction, and they could only walk by and watch as small, odd-shaped pipes were lit and smoked inside of these phone booths. At this point we realized it was a game of cat and mouse going on with the VGF. All they have the ability to do is drive the junkies and druggies to the surface of the streets. However, the Frankfurt Police is not following up by taking away the criminals once they are sent out to the street. Additionally, the Mayor is using the stations to shelter the homeless during the winter months. Although she only allows it during the hours of no operation, this contradicts the concept of the Broken Windows Theory. This can be seen on Figure 4-3, which displays the VGF's statistical trends for the last seven months.

Figure 4-3 VGF's Stations Incidents *Graph Created by Aaron Schräger*



From October to February the total number of incidents remains relatively steady. Studebaker believes the large increase from August to September most likely results from the weather, which gets gradually colder during those months. Therefore, more junkies and druggies are going to the stations for warmth and shelter. This graph shows that criminals aren't being removed from the stations, just displaced to the other stations. VGF does not have authority to arrest the smaller drug dealers and vandals in the stations. They only have the ability to throw them out of the stations within their jurisdictions. The criminals are becoming street smart. They learn the jurisdictions, and they know enough to enter zones in which VGF security has no authority to escape being caught. Two times on our naturalistic observations, we witnessed men sleeping in McDonalds vestibule and watched as the VGF simply walked by, since they cannot do anything.

4.1.3 DB Station and Service

We met Herr Meurer for our interview with DB Station and Service we learned that they are a daughter company of Deutsche Bahn AG with responsibility

for the Hauptbahnhof in Frankfurt and the S-bahn and heavy rail trains there as well. Unlike the VGF, the Deutsche Bahn AG (DB) hires a private company for their security needs. This is the only difference between DB's security company and the VGF. The security force employed by DB is called Bahn Schutz and Service gmbH (BSG).

The jurisdiction of the BSG extends from immediately outside the doors of the Hauptbahnhof to the edge of the platforms where the passengers board the trains. They are also the security company for all the S-bahn stations, with the exception of Konstablerwache and Hauptwache. The VGF assumes responsibility at those. Since Frankfurt Hauptbahnhof is the largest train station in Germany, with over 700 trains operating daily, the BSG aids the BGS in ensuring passenger safety. The BGS is responsible for security on the trains themselves and in the station. The main purpose of the BSG is to deter crime by remaining visible. They are primarily concerned with the increasing numbers of beggars, thefts, and drugs in many stations all over the city of Frankfurt. Since there are twenty-one entrances to the Hauptbahnhof, it is very difficult to control these unwanted groups here. The Hauptbahnhof closes the station's entrances during late night hours, at which time the BSG permits entry only to those who have tickets. This concept of controlling the entrances and exits is in compliance with CPTED. Amazingly, the Hauptbahnhof is a CPTED project within itself.

DB has a initiated a new policy called "3-S". This stands for *Sicherheit, Service, und Sauberkeit*, meaning Safety, Service, and Cleanliness. With this policy they are trying to be an example to other companies and trying to create a clean and friendly environment at the station. DB has hired a professional cleaning service to keep the stations clean all day long, which best exemplifies motivational

reinforcement. When the station is closed late at night, extensive cleaning commences.

For additional security, they increase surveillance by using over 90 security cameras in the Hauptbahnhof alone to monitor the entire station from one room. For the improvement in service to customers of the Hauptbahnhof they built a lounge/waiting area for travelers to relax or work while they wait for their trains. This is also an example of their use of CPTED by promoting activities and a pleasant environment. The shops and stores are not allowed to leave display racks out of their store to prevent theft, and the restaurants use stools and tables made of a heavy metal to provide seating for the customers, yet making them unappealing to steal. Herr Meurer mentioned his attempt to use managerial aspects of CPTED by regulating store hours.

Physically, certain parts of the station have been rebuilt with CPTED in mind. They are trying to revitalize the station, yet keep all the architecture. They want to make everything seem brighter, bigger, and cleaner. Most recently they spent millions of DM to revitalize their main hallway.

Just like CPTED suggests, DB issued a survey to 25,000 of its riders obtain useful feedback about the passengers' fears and the areas of station service that are most important to them. Forty topics were ranked according to how important the average passenger thought the topics were. Due to confidentiality we cannot disclose all results of this survey, but the highest concerns of passengers are listed in table 4-3. This was the information we hoped to obtain through our own surveys, had we been able to do them.

We concluded our interview with a tour of the underground portion of the Hauptbahnhof. Herr Meurer was quick to point out how CPTED can only minimally

help there since there is little you can do for redesigning the subways. They have low ceilings, are underground, and generally dark. As we exited the station, he pointed out the junkies loitering at the exits and expressed his disgust with the Frankfurt Police for not cleaning up what his security company is sending out of the station. He also expressed anger at how the Frankfurt Police would rather have the criminals be contained at the train stations, than to have them be spread throughout the city. This was the second time we have heard such disgust with the Frankfurt Police. VGF had also been upset with their efforts. They try to provide the passengers with the service they desire, but the police are using the stations to contain the criminals.

Table 4-3 Ten Highest Concerns of Passengers

1	Personal safety at nighttime
2	Toilets in the train stations -(clean and working)
3	Safety immediately outside the stations – (station entrances and immediate neighborhoods)
4	Trains that run on time
5	Information about travel – (pamphlets and workers)
6	Short term parking
7	Waiting time to buy tickets
8	Benches and seats
9	Easy entry with baby carriages – (ramps for easy accessibility)
10	Clear announcements of arriving departing trains

Table created by Aaron Schräger

Clearly, the passengers have a wide range of wants from safety to clear public address announcements. The overall average for safety at nighttime received a 1.25 on a scale of 6 to 1, with 1 being the most desired. This was nearly one full point ahead of the second highest concern. This indicates that passengers are extremely interested in their personal safety at train stations. Although we received minimal information about the survey itself, Salant and Dillman suggest using a sample size of

only 1,066 to get results within 3% accuracy based on the sample frame, which is 360,000 at the Hauptbahnhof. The sample size used for this survey was well above the minimum requirement of 1,066 people. We concluded that Table 4-3 portrays an accurate account of the passengers' feelings.

4.1.4 Bundesgrenzschutz BGS

The BGS has jurisdiction for all train tracks and facilities for international, national, and local trains. The BGS also exists to protect the passengers of these trains, as well as the trains themselves. The BGS is divided into four main sections. These sections are *Bahnpolitzei, Grenzpolizei, Luftsicherheit, and Einsatzverbände*. They mean train police, border police, airport police, and large crowd control police, respectively. The *Einsatzverbände* of BGS operates when there is a large event, such as a soccer match or stadium concert. They are specially trained to handle arrests of more than one or two people and also to provide crowd control.

The jurisdiction of the BGS covers all of Hessen and a small part of Bavaria. This area is divided into 5 sections: north, south, east, west, and middle. Middle Hessen includes Frankfurt am Main, Kassel, Gießen, and Mainz.

For several types of crimes the BGS must notify the Frankfurt police in addition to filing their own report because these crimes are outside of their responsibilities. For murder, theft, suicide, assault and other crimes of this nature the BGS will transfer the case to the Frankfurt Police. The BGS cannot allocate resources to such crimes, when they have such a large jurisdiction. In cases of graffiti artists a special team within BGS investigates the offense. They are usually contacted upon the arrest of a vandal, the cans of spray paint are immediately confiscated as evidence and the BGS is allowed to make an emergency search of the suspect's home without a

warrant for evidence of other similar crimes. Graffiti artists often take pictures of their works. If any pictures are found in the suspect's home, the suspect can be prosecuted for the depicted graffiti. Although it is possible for the BGS to complete these emergency searches, the normal procedure for searching a criminal's home is to contact the police and go through the court system to obtain a warrant.

Recently the BGS was involved in trying to unify crime fighting within the city. The BGS meets with the entire 3-S group. These are the Frankfurt Police safety department, BSG, and the Director of Stations and Service from Deutsche Bahn every second Thursday of the month. In this meeting, information on safety issues that each party has discovered is shared with the other groups to help reduce crime.

The BGS is a true police force. All officers carry weapons and have had two and a half years of training before joining the BGS. In the past the BGS was the border police. However, the borders of Germany have recently been opened to the rest of Europe, thus the BGS was not needed to patrol the borders. They now patrol all trains and stations throughout Germany. They enforce passport and visa laws as well as regulations against the import of illegal goods. Their jurisdiction is widespread, covering more than the entire state of Hessen.

4.2 Schrägometer

Upon arrival in Germany, we were not given specific stations in Frankfurt to examine, so we decided to look at every station in Frankfurt. By doing this we hoped to discover trends, and possibly a station that was in dire need of an individual proposal. It was our job to devise a method to examine the train stations whole scale. To accomplish this we first developed a method to take a physical survey of the train stations, and then rank them on a scale. We called this ranking system the

Schrägometer. The criteria for the Schrägometer was an intricate mixture of the Broken Windows Theory and CPTED. Although the Schrägometer is biased to our opinions, it was an excellent tool to examine large numbers of train stations as quickly as possible. Since we were the only two analyzing the physical condition and environment of each train station, they all are equally biased to our opinions. The criteria we used was determined by analyzing what lesser crimes the Broken Windows Theory as used by the NYPD would target. Additionally, we used criteria that a CPTED project would aim to remove or improve.

The first portion of the Schrägometer is primarily based on The Broken Windows Theory. For each criterion we ranked each station on a scale of 1-10. The characteristics we looked for were the presence of graffiti and litter, the overall appearance, and the immediate neighborhood. Table 4-4 gives a description of what each ranking indicated for the characteristics we looked for.

We used this as a basis for Part I. It is important to note that we define a sense of community as the presence of town signs, advertisements, mailboxes with names on them, people outside interacting with one another, and flags.

The final section of Part I of the Schrägometer was the evaluation of the people in general. We counted the number of quality of life crimes e.g., public drinking, drug use, prostitution, and panhandling, as well as the number of disorderly people e.g., drunks, rowdy teenagers, and mentally disturbed. It should also be noted that we are not trained experts so some crimes we witnessed may have only been misled perceptions. Overall, most crimes were blatant e.g., open liquor, the aroma of cannabis, and panhandlers were significant indications of an occurring crime.

Table 4-4 Schrägometer Part I Criteria

CHARACTERISTIC	1	4	7	10
GRAFFITI	NONE	Some visible graffiti on station walls and building	Graffiti on majority of visible walls and station building	Majority of the visible walls, vending machines, and station building painted
LITTER	NONE	Minor debris around benches and trash receptacles	Significant amount of debris around trash receptacles, and on track beds	Litter on the track beds, in landscaping, in and around building, all over platform
OVERALL APPEARANCE	Well maintained, clean, positive social atmosphere, nice landscape	Somewhat positive atmosphere, relatively clean, decent landscape present	Run down, needs repairs, landscape needs trimming, dirty	Broken or boarded windows, broken signs and ticket machines, landscape not maintained, dirty
NEIGHBOORHOOD APPEARANCE	Clean, community, no litter or graffiti	Relatively clean, some sense of community, minimal amounts of graffiti and litter	Substantial amount of graffiti and litter, little or no sense of community	Abandoned buildings, significant graffiti and litter, no sense of community

Table created by Aaron Schräger

We also took a physical count of the number of vending machines at each train station. At train stations with both U-bahn and S-bahn trains, we counted only the machines for the specific type of train we were surveying. Vending machines attract vandalism and panhandlers. The fact that VGF spent 171,000 DM repairing damage to them last year alone is proof that vending machines are targets of vandalism and property destruction.

Immediately after completing Part I we proceeded to Part II which requires an extensive survey of the station's characteristics according to CPTED design practices. The four components of a CPTED program are surveillance, movement control, motivational reinforcement, and activity support. Using the CPTED handbook, we

determined how well each station was designed to deter crime. We used a 1-5 ranking scale, where 1 indicated a station that was compliant with CPTED, and a 5 indicated it would most benefit from CPTED at that given area. We also examined the physical location of the structure. We ranked physical location, on a scale from 1-10, with 1 being the best possible score, and 10 indicating a poorly located station. This was based on how well a station is situated in its environment. The most desirable environment is an open one, where surveillance is excellent. The worst situation is when a station is located in a valley or in the woods where surveillance is low. Stations built underground were given a maximum high score of 4 in the physical location category. Even a well designed underground train station with great surveillance is at the disadvantage of not being visible from the surrounding neighborhood. To determine the score of physical location for underground stations, we analyzed how well the exits were located. Exits that lead passengers into darkened alleyways are less desired compared to ones that lead passengers into a plaza or park. Table 4-5 displays the criteria we used to give each characteristic a score.

When Part II was complete, the scores were totalled. In both summations it was the higher score that indicated the station was more in need of the Broken Windows Theory and a CPTED project.

The process of viewing all of Frankfurt's stations and taking a physical survey of each was time consuming. We arrived at each station by train and then proceeded by taking a physical survey of the station and its environment. The survey was extensive, and averaged 13.1 minutes. Table 4-6 shows our cumulative time data for the stations. We extensively examined the station's interior and exterior. This included entering bathrooms and shops when they were present. We also followed the exit

signs to the street and into the immediate neighborhood. When there was more than one exit to the street, we examined all of them.

Table 4-5 Schrägometer Part II Criteria

Characteristic	1	3	5
Surveillance	Use of transparent walls, visibility from neighborhood and streets, lighting present, no blind spots or dark corners	Decent view from street, some lighting, some dark corners,	Solid brick walls, corners, no lighting, no visibility from street and neighborhood
Movement Control	Minimal exits, natural flow of traffic	Some natural flow, more exits than needed, some boundaries established	No boundaries, to many exits, no natural flow
Motivational Reinforcement	Advertisements, cleanliness, empty garbage cans, information kiosks, attendants present	Moderately clean, some garbage, minimal advertisements and information	Dirty, garbage cans full, no advertisements or information
Activity Support	Benches, shops, neighboring stores,	Some benches, a few shops,	No benches, no shops, minimal people
Physical Location	Elevated on a small hill, no obstructions between structure and ground level	Built on flat ground, some obstructions	In a valley, numerous obstructions between it and street

Chart Created by Aaron Schräger

Table 4-6 Breakdown of Time Spent Touring Stations

Total Number of Stations	104
Total Time Spent Touring Stations	1362 min (22hr42min)
Average per Station	13.1 min

Chart created by Aaron Schräger

The first obstacle we encountered before we could apply the Schrägometer was our inability to determine the boundaries of the City of Frankfurt. Unable to obtain this data, we determined the boundaries on our own. We used a map of the

transportation system that we were given by the VGF. This map had a shaded gray line going around the outskirts of Frankfurt, which was referred to as a tariff zone line. It was an imaginary line the city used to aid in setting the price of their fares. We used this line to set where we would stop our physical surveys since most trains continued far beyond this border. Tables 4-7 and 4-8 indicate which train lines we toured and the stations we used to determine the boundaries. The beginning station indicates where we boarded that specific train, and the end station indicates where we finished taking physical surveys along that line.

Table 4-7 S-bahn Stations Selected

Line	Beginning Station	End Station
S-1	Hocheim	Marktplaz
S-2	Fabwerke	Frankfurt Süd
S-3	Niederhöchstadt	Louisa
S-4	Niederhöchstadt	Louisa
S-5	Rödelheim	Frankfurt Süd
S-6	Berkersheim	Frankfurt Süd
S-8	Flughafen	Marktplaz

Table 4-8 U-bahn Stations Selected

Line	Beginning Station	End Station
U-1	Ginnheim	Frankfurt Süd
U-2	Nieder-Eschbach	Frankfurt Süd
U-3	Niederursel	Frankfurt Süd
U-4	Konstablerwache	Seckbacher Landstraße
U-5	Hauptbahnhof	Preungesheim
U-6	Heerstraße	Zoo
U-7	Hausen	Enkheim

Chart created by Aaron Schräger

In general, stations situated in the immediate vicinity of the Hauptbahnhof were located below ground. However, most stations went above ground once they were a few stations away from the city center. Table 4-9 gives the demographics of the stations.

Table 4-9 Breakdown of Toured Stations

Station Type	Number Surveyed	Number above Ground	Number Below Ground
U-bahn	69	45	24
S-bahn	35	24	11

Once we established boundaries, we toured a total of 104 train stations in the Frankfurt area, and recorded our results for the Schrägometer. We first began by touring all stations that fell within our defined boundaries of Frankfurt on the S-bahn trains. All of our observation occurred between 10:00 and 15:00. We toured each and every station between the beginning station and the end station on each line. One discovery we did have was the Messe station between Galluswarte and Frankfurt West. This newly constructed station was neither on our map, nor on the one in the train itself. Table 4-10 and Table 4-11 present the Schrägometer results for Part I and Part II respectively.

Table 4-10 S-bahn Schrägometer Results, Part I

STATION	TYPE	Appearance (1-10, 1=best)				Quality of life Crimes (#Seen)				SUM
		Graffiti	Litter	Overall	Neighborhood	Quality of Life Crimes	Disorderly Persons	Vending machines		
Niederhöchstadt	S 3-4	3	6	3	4	0	0	2	18	
Eschborn	S 3-4	5	4	4	4	0	0	2	19	
Eschborn Süd	S 3-4	6	4	4	4	0	0	2	20	
Rödelheim	S 3-5	3	7	5	5	0	0	3	23	
Frankfurt West	S 3-6	1	2	2	2	0	0	3	10	
Messe	S 3-6	1	1	1	3	0	0	8	14	
Galluswarte	S 3-6	7	5	5	4	0	0	3	24	
Stresemannallee	S 3-4	1	3	2	1	0	0	2	9	
Louisa	S 3-4	1	3	3	1	0	0	2	10	
Hochheim	S 1	8	2	3	4	0	0	3	20	
Flörsheim	S 1	6	4	4	4	1	0	2	21	
Eddersheim	S 1	7	4	5	4	0	0	2	22	
Farbwerke	S 1-2	4	2	5	5	2	1	4	23	
Sindlingen	S 1	7	6	6	3	0	0	2	24	
Hatterscheim	S 1	8	7	3	6	1	0	2	27	
Höchst	S 1-2	3	5	3	4	3	2	8	28	
Nied	S 1-2	4	4	3	6	0	0	2	19	
Griesheim	S 1-2	3	7	5	8	2	0	2	27	

Table 4-10 S-bahn Schrägometer Results, Part I Continued

Eschersheim	S 6	10	2	8	9	18	12	2	61
Frankfurter Berg	S 6	4	1	3	2	0	0	3	13
Berkersheim	S 6	2	1	2	1	0	0	2	8
Niederrad	S 8	6	3	4	2	0	0	2	17
Sportfeld	S 8	8	5	7	7	0	0	2	29
Mühlberg	S 1,8	7	4	5	5	4	2	4	31
Kaiserlei	S 1,8	1	1	2	3	1	0	4	12
Ledermuseum	S 1,8	1	2	3	3	0	2	4	15
Marktplatz	S 1,8	1	1	2	3	4	1	4	16
Hauptbahnhof	S 1-6,8	2	3	3	4	7	15	12	46
Taunuslage	S 1-6,8	5	1	2	4	0	0	3	15
Hauptwache	S 1-6,8	1	3	3	3	20	3	14	47
Konstablerwache	S 1-6,8	1	2	2	4	10	0	12	31
Ostendstraße	S 1-6,8	2	3	3	8	0	0	4	20
Lokalbahnhof	S 2-6	8	2	5	3	0	0	2	20
Frankfurt Süd	S 1-6	2	4	2	5	0	0	5	18
Flughafen	S 8	2	2	3	4	2	3	4	20
Average		4,0286	3,31429	3,5714	4,0571	2,142857	1,1714286	3,9143	22,2

Italics indicates that the station has both S-bahn and U-bahn trains

Table 4-11 S-bahn Schrägometer Results, Part II

CPTED (1-5, 1=best)					Location (1-10, 1=best)	
STATION					above/under ground	TOTAL
	Surveilliance	Movement Control	Motivational Reinforcement	Activity Support	Physical Location	
Niederhöchstadt	2	3	3	4	6 a	18
Eschborn	2	4	3	4	7 a	20
Eschborn Süd	2	3	4	4	6 a	19
Rödelheim	4	3	5	2	6 a	20
Frankfurt West	2	2	4	3	4 a	15
Messe	1	1	2	2	2 a	8
Galluswarte	3	2	2	3	4 a	14
Stresemannallee	4	1	4	5	2 a	16
Louisa	4	1	4	5	3 a	17
Hochheim	4	4	3	4	4 a	19
Flörsheim	4	3	4	2	5 a	18
Eddersheim	4	4	4	4	9 a	25
Farbwerke	4	3	4	4	6 a	21
Sindlingen	5	4	4	4	4 a	21
Hatterscheim	5	4	4	4	4 a	21
Höchst	3	2	4	2	4 a	15
Nied	3	2	4	5	5 a	19
Griesheim	3	2	4	5	6 a	20
Eschersheim	5	4	5	4	10 a	28
Frankfurter Berg	3	1	3	5	1 a	13
Berkersheim	2	1	3	5	1 a	12
Niederrad	5	3	4	3	1 a	16

Table 4-11 S-bahn Schrägometer Results, Part II Continued

Sportfeld	5	1	5	5	7 a	23
Mühlberg	4	3	3	3	4 u	17
Kaiserlei	2	1	2	3	4 u	12
Ledermuseum	2	1	2	3	4 u	12
Marktplatz	2	1	2	3	4 u	12
Hauptbahnhof	2	3	4	2	4 u	15
Taunuslage	3	1	3	5	5 u	17
Hauptwache	2	5	2	2	4 u	15
Konstablerwache	1	5	1	2	4 u	13
Ostendstrße	4	1	5	5	4 u	19
Lokalbahnhof	4	1	5	5	4 U	19
Frankfurt Süd	4	5	5	3	6 A	23
Flughafen	3	2	4	3	4 U	16
Average	3,2	2,4857	3,54286	3,6286	4,5143	17,3714

Italics indicates that the station has both S-bahn and U-bahn trains

Additionally, the U-bahn results for both Part I and Part II of the Schrägometer can be found in Table 4-12 and Table 4-13.

Table 4-12 U-bahn Schrägometer Results, Part I

STATION	TYPE	Appearance (1-10, 1=best)				Quality of life Crimes (#Seen)			SUM	
		Graffiti	Litter	Overall	Neighborhood	Quality of Life Crimes	Disorderly Persons	Vending machines		
Frankfurt Süd	U 1-3	2	4	2	5	0	0	4	17	
Schweizer Platz	U 1-3	2	3	3	3	0	10	4	25	
Willy-Brandt-Platz	U 1-5	1	1	4	2	12	16	3	39	
Hauptwache	U 1-3	1	3	3	4	20	3	12	46	
Eschenheimer Tor	U 1-3	5	4	3	4	5	5	4	30	
Grüneburgweg	U 1-3	3	4	3	4	4	3	5	26	
Holzhausenstrasse	U 1-3	5	1	4	2	0	0	2	14	
Miquel-Adickesallestrasse	U 1-3	4	4	6	5	0	0	2	21	
Dornbusch	U 1-3	1	3	6	5	0	0	2	17	
Fritz-Tarnow Strasse	U 1-3	4	5	6	5	0	0	2	22	
Hügelstraße	U 1-3	1	2	6	6	0	0	2	17	
Lindenbaum	U 1-3	5	5	7	6	0	0	2	25	
Weißerstein	U 1-3	5	2	6	6	0	0	2	21	
Heddernheim	U 1-3	5	5	6	4	2	0	2	24	
Sandalmühle	U 2	4	6	5	7	0	0	2	24	
Riedwiese	U 2	1	6	7	5	0	0	2	21	
Kalbach	U 2	3	7	5	3	0	0	2	20	
Bonammes Mitte	U 2	8	9	8	6	0	0	2	33	
Nieder Eschbach	U 2	7	9	7	2	0	0	2	27	
Zeilweg	U 1,3	6	3	4	3	0	0	2	18	
Wiesenau	U 3	10	2	7	6	0	0	2	27	
Niederursel	U 3	6	2	4	2	0	0	2	16	
Heddernheimer Landstraße	U 1	7	2	4	4	0	0	2	19	

Table 4-12 U-bahn Schrägometer Results, Part I Continued

Nordwestzentrum	U 1	1	1	1	2	0	0	2	7
Römerstadt	U 1	8	5	7	5	0	0	2	27
Niddapark	U 1	6	3	5	7	0	0	2	23
Ginnheim	U 1	2	9	6	7	0	0	4	28
Alte Oper	U 6-7	2	1	2	2	0	0	4	11
Westend	U 6-7	5	3	3	3	1	7	4	26
Bockenheimer Warte	U 6-7	2	3	3	4	4	6	10	32
Leipziger Strasse	U 6-7	3	1	2	2	1	1	5	15
Kirchplaz	U 6-7	2	1	1	3	0	1	4	12
Industriehof	U 6-7	2	2	2	2	0	0	2	10
Fischstein	U 6	1	2	2	2	0	0	2	9
Hausener Weg	U 6	3	3	3	2	0	0	2	13
Stephen-Heisse-Strasse	U 6	5	3	4	4	0	2	2	20
Friedhof/Westhausen	U 6	6	4	5	4	1	1	2	23
Ebelfield	U 6	3	2	4	4	0	2	2	17
Heerstraße	U 6	2	4	3	4	0	1	2	16
Große Nelkenstraße	U 7	2	5	3	4	0	0	2	16
Hausen	U 7	3	4	3	5	0	1	2	18
Römer	U 4-5	2	4	3	3	2	5	6	25
Konstablerwache	U 4-7	2	7	4	4	7	9	14	47
Musterschule	U 5	3	5	4	4	2	8	6	32

Table 4-12 U-bahn Schrägometer Results, Part I

		Appearance (1-10, 1=best)				Quality of life Crimes (#Seen)			SUM
STATION	TYPE	Graffiti	Litter	Overall	Neighborhood	Quality of Life Crimes	Disorderly Persons	Vending machines	
Glauburgstraße	U 5	4	4	5	5	0	6	4	28
Nibelungenalle/deutsche Bibliothek	U 5	2	4	4	4	0	0	4	18
Hauptfriedhof	U 5	3	5	3	5	0	0	4	20
Versorgungsamt	U 5	4	3	4	4	2	4	2	23
Eckenheimer Landstraße/Marbachweg	U 5	5	6	5	5	0	0	3	24
Gießner Straße	U 5	4	4	4	5	0	2	2	21
Theobald-Ziegler-Straße	U 5	3	6	3	5	0	0	2	19
Ronneburgstraße	U 5	2	4	4	4	0	0	2	16
Sigmund-Freud-Straße	U 5	3	3	5	3	0	0	2	16
Preungesheim	U 5	2	2	5	3	0	0	2	14
Merianplatz	U 4	6	6	6	4	0	1	4	27
Höhenplatz	U 4	2	5	6	5	0	3	9	30
Bornheim Mitte	U 4	2	5	5	5	1	4	5	27
Seckbacher Landstraße	U 4	4	5	6	6	0	5	4	30
Zoo	U 6-7	1	2	1	3	0	0	4	11
Habsburgeralle	U 7	5	3	4	4	0	1	5	22
Parlamentsplatz	U 7	6	4	5	5	0	2	4	26
Eissporthalle/Festplatz	U 7	3	5	4	4	2	0	4	22
Johanna-Tesch-Platz	U 7	2	1	2	4	0	0	2	11
Schläfflestraße	U 7	2	4	5	5	0	0	2	18
Gwinnerstraße	U 7	3	4	4	4	0	0	2	17

Table 4-12 U-bahn Schrägometer Results, Part I Continued

Krupstrße	U 7	2	5	3	3	0	0	2	15
Hessen-center	U 7	1	4	3	3	0	0	2	13
Enkheim	U 7	1	4	3	3	0	1	2	14
Hauptbahnhof	U 4-5	2	4	5	5	10	10	10	46
Average		3,4058	3,8551	4,2029	4,087	1,101449	1,73913	3,405797	21,797

Italics indicates that the station has both S-bahn and U-bahn trains

Table 4-13 U-bahn Schrägometer Results, Part II

CPTED (1-5, 1=best)					Location (1-10, 1=best)		TOTAL
STATION	Surveillance	Movement Control	Motivational Reinforcement	Activity Support	Physical Location	above/under ground	
Frankfurt Süd	3	3	4	3	4	a	17
Schweizer Platz	3	1	3	5	5	u	17
Willy-Brandt-Platz	4	2	4	4	4	u	18
Hauptwache	1	3	2	3	5	u	14
Eschenheimer Tor	4	3	4	5	4	u	20
Grüneburgweg	4	3	4	3	5	u	19

Table 4-13 U-bahn Schrägometer Results, Part II

CPTED (1-5, 1=best)					Location (1-10, 1=best)		TOTAL
STATION	Surveillance	Movement Control	Motivational Reinforcement	Activity Support	Physical Location	above/under ground	
Holzhausenstrasse	4	2	3	3	4	u	16
Miquel-Adickesallestrasse	4	3	4	3	4	u	18
Dornbusch	3	4	4	3	6	a	20
Fritz-Tarnow Strasse	3	4	5	3	6	a	21
Hügelstraße	3	4	5	3	6	a	21
Lindenbaum	4	3	5	3	6	a	21
Weißerstein	4	3	4	3	6	a	20
Heddernheim	3	4	4	3	5	a	19
Sandalmühle	4	4	3	5	6	a	22
Riedwiese	4	3	3	4	8	a	22
Kalbach	3	4	4	4	6	a	21
Bonammes Mitte	5	3	4	2	5	a	19
Nieder Eschbach	3	4	5	2	6	a	20
Zeilweg	5	4	4	3	6	a	22
Wiesenau	4	4	5	4	8	a	25
Niederursel	2	4	5	4	3	a	18
Heddernheimer Landstraße	2	4	4	4	4	a	18
Nordwestzentrum	4	3	4	3	4	u	18
Römerstadt	5	1	5	5	4	a	20

Table 4-13 U-bahn Schrägometer Results, Part II Continued

Niddapark	3	1	5	4	1 a	14
Ginnheim	4	2	4	5	6 a	21
Alte Oper	2	1	3	2	4 u	12
Westend	2	2	3	3	4 u	14
Bockenheimer Warte	2	3	1	1	4 u	11
Leipziger Strasse	1	4	3	2	4 u	14
Kirchplaz	2	3	2	4	4 u	15
Industriehof	1	1	3	3	3 a	11
Fischstein	3	2	3	3	4 a	15
Hausener Weg	4	2	4	3	5 a	18
Stephen-Heisse-Strasse	3	4	4	4	5 a	20
Friedhof/Westhausen	3	3	4	4	5 a	19
Ebelfield	4	2	3	4	3 a	16
Heerstraße	2	2	4	4	3 a	15
Große Nelkenstraße	1	2	3	4	3 a	13
Hausen	1	2	3	4	2 a	12
Römer	2	5	2	3	5 u	17
Konstablerwache	3	2	3	3	4 u	15
Musterschule	4	4	4	4	5 a	21
Glauburgstraße	3	3	3	4	4 a	17
Nibelungenalle/deutsche Bibliothek	2	3	3	3	4 a	15
Hauptfriedhof	3	4	4	3	5 a	19
Versorgungsamt	4	3	2	4	4 a	17
Eckenheimer Landstraße/Marbachweg	3	2	4	4	3 a	16
Gießner Straße	2	3	3	4	3 a	15
Theobald-Ziegler-Straße	3	4	3	5	3 a	18
Ronneburgstraße	4	4	4	3	4 a	19
Sigmund-Freud-Straße	4	4	3	4	5 a	20
Preungesheim	4	4	4	3	4 a	19

Table 4-13 U-bahn Schrägometer Results, Part II

CPTED (1-5, 1=best)					Location (1-10, 1=best)	TOTAL
STATION	Surveillance	Movement Control	Motivational Reinforcement	Activity Support	Physical Location	above/under ground
Merianplatz	4	2	5	4	4 u	19
Höhenplatz	5	4	4	4	6 u	23
Bornheim Mitte	2	2	1	3	6 u	14
Seckbacher Landstraße	2	2	4	5	5 u	18
Zoo	1	1	3	2	4 u	11
Habsburgeralle	2	1	4	4	5 u	16
Parlamentsplatz	1	2	3	4	4 u	14
Eissporthalle/Festplatz	3	1	3	4	4 u	15
Johanna-Tesch-Platz	2	2	4	4	5 a	17
Schläfflestraße	3	2	3	4	5 a	17
Gwinnerstraße	2	2	4	3	3 a	14
Krupstrße	2	2	4	3	3 a	14
Hessen-center	2	2	4	3	3 a	14
Enkheim	1	3	3	3	4 a	14
Hauptbahnhof	2	4	3	2	4 u	15
Average	0,493	0,4638	0,7536	0,7536	0,942	3,4058

Italics indicates that the station has both S-bahn and U-bahn trains

After touring and surveying the 104 train stations in Frankfurt, we tabulated the sum of each station and averaged the individual characteristics for the system as a whole. Part II evaluated the station and how it was effected by the Broken Windows Theory, or the lack of it. Table 4-14 shows which three train stations most need the Broken Windows Theory.

Table 4-14 Three Stations that would most Benefit from Broken Windows Theory.

Station	Graffiti	Litter	Overall	Neighborhood	Quality of Life Crimes	Disorderly Persons	Vending Machines	TOTAL
Eschersheim	**10**	**2**	**8**	**9**	**18**	**12**	**2**	**61**
Konstablerwache U-bahn	**2**	**7**	**4**	**4**	**7**	**9**	**14**	**47**
Hauptwache S-bahn	**1**	**3**	**3**	**3**	**20**	**3**	**14**	**47**

Chart created by Aaron Schräger

There is no maximum high score on Part I of the Schrägometer since it includes the number of criminals and disorderly people seen. Therefore, a score can be infinitely large. In our surveys, we found Escherseim, Konstablerwache, and Hauptwache to score the highest. Eschersheim, the highest scoring station received a score nearly 40 points over the average for the S-bahn stations.

On the contrary, Part I also indicated that some of Frankfurt's stations were in significant lesser need of application of the Broken Windows Theory. Table 4-15 shows the three lowest scoring stations.

Table 4-15 Three Stations most Compliant with Broken Windows Theory

Station	Graffiti	Litter	Overall	Neighborhood	Quality of Life Crimes	Disorderly Persons	Vending Machines	TOTAL
Nordwestzentrum	**1**	**1**	**1**	**2**	**0**	**0**	**2**	**7**
Louisa	**2**	**1**	**2**	**1**	**0**	**0**	**2**	**8**
Stresemannalle	**1**	**3**	**2**	**1**	**0**	**0**	**2**	**9**

Chart created by Aaron Schräger

The lowest score a station can receive from Part II of the Schrägometer is a 4. Norwestzentrum's score of 7 was 15 points lower than the average for the stations. Part II of the Schrägometer analyzed CPTED and whether or not components of it were present at a given station. Table 4-16 displays the three stations in Frankfurt that are most compliant with CPTED design.

Table 4-16 Three Stations Most Compliant with CPTED Design

Station	Surveillance	Movement Control	Motivational Reinforcement	Activity Support	Physical Location	TOTAL
Messe	**1**	**1**	**2**	**2**	**2**	**8**
Industriehof	**1**	**1**	**3**	**3**	**3**	**11**
Zoo	**1**	**1**	**3**	**2**	**4**	**11**

Chart created by Aaron Schräger

The lowest possible score is 5. Messe's score of 8 was nearly 9 points below the average for the system. This newly constructed station was obviously built with CPTED in mind. It was well situated, and had an abundance of translucent windscreens and walls, as well as high ceilings and adequate lighting. Industriehof and Zoo were older stations that were obviously redesigned at some point to become more CPTED compliant.

However, several stations in Frankfurt were older, run-down stations and were not CPTED compliant. The three that received the highest scores are found in Table 4-17.

Out of a highest possible score of 30, Eschersheim again received the highest score of a 28. Eschersheim is in dire need of a complete redesign. Its major problem is its location. Eschersheim is built adjacent to an overpass and a bar. Figure 4-4 shows Eschersheim Station as it is seen from the overpass. It is clearly visible to see

Table 4-17 Three Stations that would most Benefit from a CPTED Project

Station	Surveillance	Movement Control	Motivational Reinforcement	Activity Support	Physical Location	TOTAL
Eschersheim	**5**	**4**	**5**	**4**	**10**	**28**
Eddersheim	**10**	**4**	**4**	**4**	**9**	**25**
Wiesenau	**4**	**4**	**5**	**4**	**8**	**25**

how both sides of the station slope upward toward the residences behind it. This location does not provide surveillance. Since the road goes over it, citizens driving by cannot see the station from the street. The trees on top of the hills prevent the residences from having a view of the station. Also, the benches are sheltered by solid concrete structures to further prohibit surveillance.

The overall appearance of Eschersheim is that of dirt and neglect. Graffiti is present on every visible wall and the vending machines as well. The immediate landscape is not maintained. Grass is not present on the hillside, yet overgrown weeds and barren dirt is present.

Figure 4-4 Eschersheim Overview

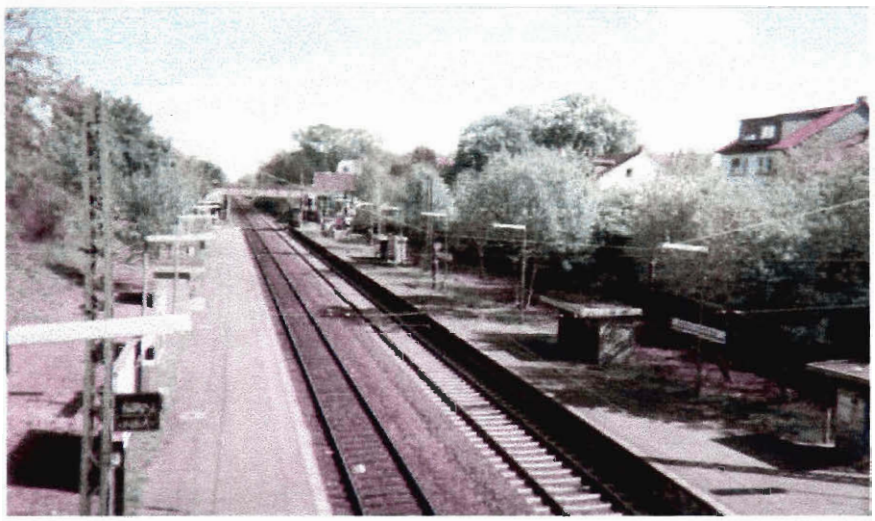


Photo taken by Aaron Schräger

There is very little movement control at Eschersheim. Figure 4-4 shows how the platforms don't have physical barriers that lead people towards the exits. Furthermore, there are no physical barriers that prevent people from wandering under the overpass. This is clearly show in figure 4-5.

Figure 4-5 depicts the graffiti problem at Eschersheim main station. In addition to the walls, it can be seen on the vending machine as well. The dark shadows in the background are cast from the overpass above the station. The building to the right is abandoned and boarded up.

Figure 4-5 Eschersheim Station, Southbound Side

Photo taken by Aaron Schräger

Eschersheim, though poorly designed with respect to CPTED, cannot be used as an example of the stations of the entire city. We already mentioned Messe Station and the efforts being made by DB and VGF to comply with CPTED, Eschersheim is one of the stations we found that have not yet been aided by a CPTED design. Overall the stations averaged a CPTED score of 17 on a scale from 5 to 30 with 5 being most compliant. The 95% confidence interval was 2.3 which indicates that 95 % of the

train stations will fall between 14.7 and 19.3 which can indicate that the stations have some CPTED characteristics, yet could use more work. In general, elements of CPTED can be seen throughout Frankfurt's train station. Though some stations have more characteristics than others, even smaller stations such as Glauburgstrasse have CPTED characteristics. Figure 4-6 shows the extensive use of glass to provide surveillance as found at Glauburgstrasse.

Figure 4-6 CPTED Compliance at Glauburgstrasse Station

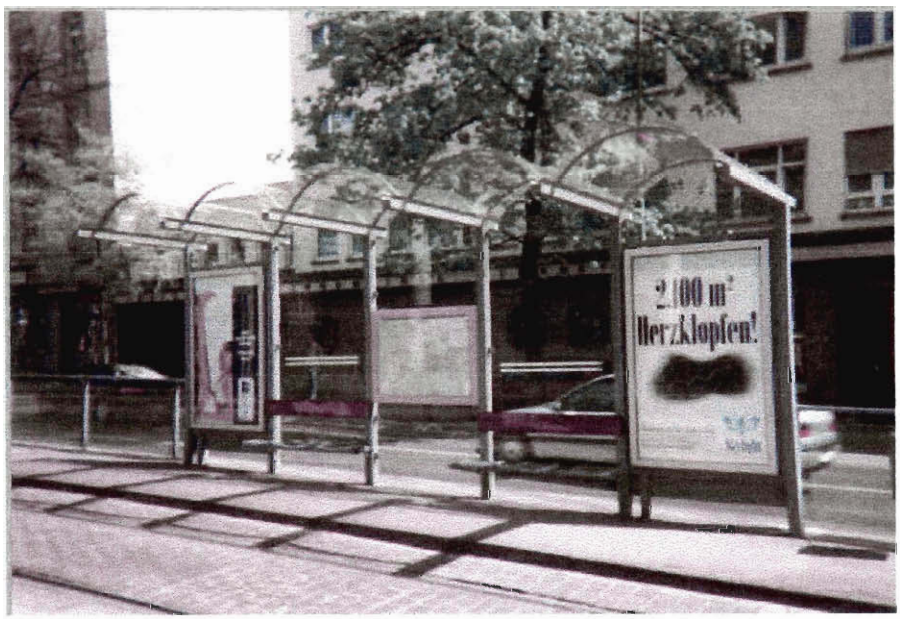


Photo taken by Aaron Schräger

One major trend that the Schrägometer provided us with was the presence of United States defined crimes occurring at the train stations. We encountered a total of 151 perceived crimes while touring train stations, in addition to the 161 disorderly persons we saw. These numbers only account for the time we spent touring each station. These crimes and disorderly persons are hanging out more so in underground stations. This can be attributed to several characteristics of underground train stations. These include, reduced surveillance due to being underground, the dark and enclosed environment of underground stations, and the consequences. Should a criminal get

caught using drugs for example, he would receive a Hausverbote as opposed to an arrest if the city police caught them on the street surface. Figure 4-7 displays the trend of crimes occurring more frequently in underground stations.

Figure 4-7 Crime and Disorderly Person Trends

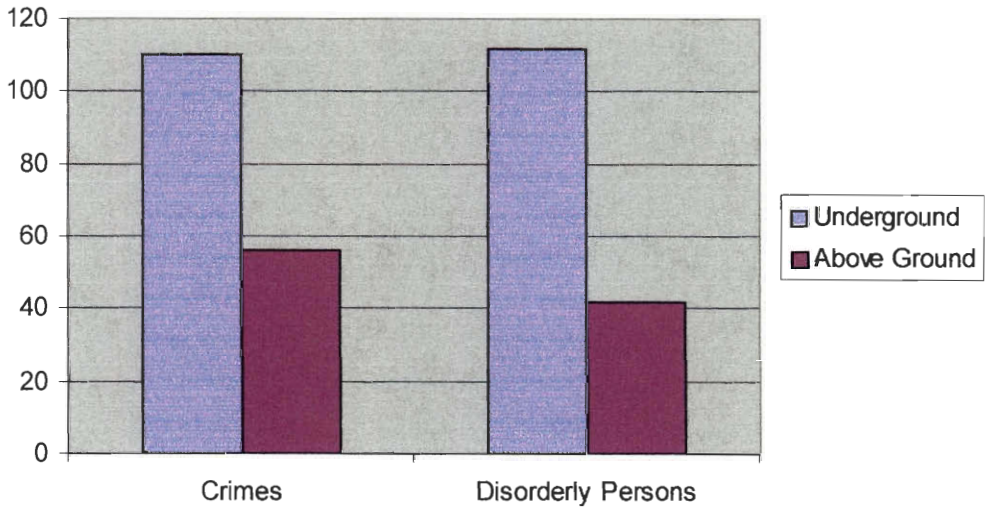


Chart created by Aaron Schräger

This differentiation between the two types of stations is quite large considering there were 34 more station above ground then below ground. As a result, underground stations on average had 3.1 crimes and 3.1 disorderly persons per station compared with .6 and .8 per above ground station.

4.3 Surveys Peter-Petersen Schule

When we lost our ability to do surveys due to our lack of significant time to obtain proper permission, we lost our tool to measure passengers' fear, thus forcing us to alter our project goal. However, we did not wish to have the survey go to waste, so we found a contact at a Peter-Petersen Schule, which is near an S-bahn station, Eschersheim. By chance, this school that we had a contact at happened to be near the station that scored the highest on both Part I and Part II of the Schrägometer. Despite

this being convenience sampling, we hoped to obtain some data regarding the students' level of fear, and perhaps information we didn't anticipate us that could reveal something about the German culture. Our survey can be found in Appendix C. Since we administered the survey through the school, we obtained 100% response rate. We obtained a total of 74 student surveys, age 15-17, and 2 teachers. The demographics of the study are shown in Table 4-18.

Table 4-18 Survey Demographics

Sex	Number	Percent
Male	36	47,4%
Female	40	52,6%
Total	76	100%

Chart created by Aaron Schräger

Though our survey results are completely bias due to convenient sampling, the small sample of the population we did survey, were common users of the system. Additionally the size and nature of the sample we used were not the sample we wished to obtain. Initially we wished to survey riders randomly at various stations to obtain an opinion of all the riders of the entire system. Due to cultural restrictions, namely our inability to interview such persons without a permit, the Peter-Petersen Schule was the only alternative since we had a contact there. We didn't wish to waste the effort we put into our survey, so we took this opportunity. Of the 74 surveys we obtained 60 people (81.1%) rode the trains at the Eschersheim station daily. All 74 rode the trains at least monthly. However, of the 74 surveyed passengers, only 37 (50%) felt there is a problem of crime at the Eschersheim station. A trend developed here when the results yielded that 29 of those 37 (78.4%) were female.

The only category we decided to analyze was the students' perception of graffiti. Having only been in the culture for seven weeks, it was difficult for us to determine whether Germans are offended by the existence of graffiti. In addition, we assumed that Eschersheim's graffiti and appearance were unacceptable to the majority

of people, but according to CPTED we had to gain the users opinions before making proposals.

Tables 4-19 give the results for the survey question regarding their feelings about the graffiti at the Eschersheim station.

Table 4-19 How the Students Feel about Graffiti

	Number or Response	Percentage
Very Negative	2	2.6%
Negative	10	13.2%
Neither Negative or Positive	38	50.0%
Positive	18	23.7%
Very Positive	8	10.5%

Statistical analysis indicates that the average response was a 3.26 and that resulted in a standard deviation of 1.0. Since this was computed with an 85% confidence interval, it can be concluded that this sample has no positive or negative feelings about the graffiti. Although this contradicts what we would have expected, it must be noted that there is a considerable chance the students who responded were the ones doing the graffiti, since graffiti is a crime popular among high school level kids according to our interviews with VGF and BGS.

4.4 Participant Observations during Physical Surveys

During the seven weeks of touring Frankfurt's stations we had the opportunity to become passengers ourselves and make participant observations. We made many observations that supported what we were learning from the VGF, BGS, and Deutsche Bahn Station and Service about problems with drugs and begging. On one occasion we observed a particularly significant series of events. This observation provides strong evidence to support the claims made by VGF in particular that the drug problem in Frankfurt is out of control.

As we entered the Konstablerwache station at around noon on the 13th of April, a weekday, a drug dealer approached us. He offered drugs to us in German, quietly at first. When he discovered that we did not speak German he spoke English and offered us Hashish, again. There was no misunderstanding this time. A similar event occurred three more times in five minutes. Each time a different person offered us drugs openly during one of the busiest hours of the day. The drug dealers did not make any attempt to conceal their offers to us at any time. This could possibly be the result of the lack of police at the time of our observation. In fact, neither of us saw a Frankfurt Police Officer in or around the stations during our physical surveys of the 104 stations.

4.5 Frankfurt Police

The Frankfurt Police Department provided crime statistics for the year 1997. These statistics give us information for only one year and therefore cannot be used to determine the change in crime rates over time.

In addition to the crime rates, the Frankfurt Police provided us with the demographics of the city. This included its population of 646,753, and its land area, 96.9 square miles. The only possibility this presented for us was to compare the crimes occurring per 1,000 population. Naturally, since New York measures its crime according to the seven crimes labeled index crimes by the FBI, we had to find the equivalent German crimes. The German equivalent crimes for the City of Frankfurt totaled 80,823. Table 4-20 is a comparative analysis of New York and Frankfurt.

Index crime per 1,000 population is a common indicator of crime in use in the United States, but not the only means of measuring crime. Therefore, it cannot be concluded that Frankfurt is far more subject to crime than New York City. However,

Table 4-20 New York Crime vs. Frankfurt Crime

	NEW YORK CITY	FRANKFURT
Index Crimes 1997	**356,573**	**80,823**
Population	**7,320,477**	**646,753**
Crimes per 1,000 population	**48.71**	**125.1**

the numbers do indicate that there are 75 more occurrences in Frankfurt per 1,000 inhabitants than in New York. Why wouldn't New York's Broken Windows theory work in Frankfurt? What does Frankfurt have to lose by implementing its own Broken Windows Theory?

5.0 Conclusions

For the past seven weeks we have been spending a significant amount of time surveying the trains and stations in Frankfurt to acquire data for our project and presentation. In addition to performing a research project here, we have been given the ultimate opportunity to live in another country and learn the ways of their society and culture. This additional learning experience has given us extra criteria to make conclusions and judgements outside of the parameters of our research and data collection.

5.1 City of Frankfurt and the Frankfurt Police

From Kaiserstraße in front of the Frankfurt Hauptbahnhof two contrasting sights can be seen. First is the architectural beauty of the Hauptbahnhof, which has served as the central station of Frankfurt for the last 110 years. Kaiserstraße itself was once a commercial center of Frankfurt. The second contrasting sight is the intersection of Kaiserstraße and Moselstraße. A variety of junkies, drug dealers, and drunks loiter around the U-bahn station at this intersection.

The City of Frankfurt and its police department are not targeting the smaller crimes, thus not implementing the Broken Windows Theory. This is evident in the data and subsequent analysis and obvious in the city's train stations. Lesser crimes are going unpunished. The resulting effect is damaging to all of Frankfurt.

It has been shown that Deutsche Bahn AG Service and Station is utilizing Crime Prevention Through Environmental Design (CPTED) in both its Hauptbahnhof, and stations like Messe, which was newly constructed in compliance with a CPTED design. In addition, Verkehrsgesellschaft Frankfurt (VGF) is continually removing criminals from its stations and sending them out to the street. VGF is also using

CPTED on the trams and subways by cleaning up the graffiti, cracking down on vandals, and using special tiles which can be easily cleaned when spray painted. Why are Deutsche Bahn AG and VGF spending millions of DM to keep their environment clean and safe, when the City of Frankfurt will not work to reduce the lesser crimes? CPTED is useless without the Broken Windows Theory. No matter how CPTED compliant a structure is designed, if there is no punishment for the lesser criminals, the stations will slowly erode to urban decay.

Both VGF and Deutsche Bahn Station and Service have stated that Frankfurt Police do not target lesser crimes. Kaiserstraße itself is evidence that this accusation is true. The lesser crimes are not a concern of the Frankfurt Police. Frankfurt needs to win back its streets and to stop succumbing to the criminals who currently have the control.

The main issue is conflict of interest between the Frankfurt Police and the two management companies, VGF and Deutsche Bahn, as well as a lack of unified crime fighting within the train stations. The VGF and Deutsche Bahn Station and Service are throwing criminals out of the stations. However, Frankfurt is using the stations as a means to control crime. The Frankfurt Police feel that the crime should not be allowed to spread through the city if it can be contained in the train stations. The mayor uses the stations as a shelter for the criminals, homeless, and junkies in winter. The City of Frankfurt and the owners of the stations disagree on this problem. The City of Frankfurt wants to control the criminals by keeping them in the stations, while the stations' owners want the criminals evicted from their stations. This is a conflict that needs to be resolved. All parties involved are spending great amounts of money, but not achieving satisfactory success.

The train station security teams are limited in the power they have to apprehend criminals. The VGF can patrol only within its stations, but once the criminals flee, the VGF security has no ability to pursue, so the criminals escape. These escaped criminals will go unpunished and continue to commit more crimes. In addition to not being able to pursue criminals who leave the station, the VGF security cannot patrol some areas of the VGF-owned stations. For example, the Hauptwache station has several areas that cannot be patrolled by VGF security. Two of these areas are a short corridor leading to a McDonald's restaurant and a section of the station owned by a private insurance company. Security in these small sections of the Hauptwache station is left completely up to the insurance company and McDonald's. VGF has no authority in these areas, and is not able to apprehend criminals who enter them. Unfortunately the criminals know the laws and rules as well and use them to their advantage. Often after committing a crime, the criminal will hide in these areas where the VGF has no jurisdiction.

Jurisdiction is a formidable problem in Frankfurt. The jurisdictional control of the city and the transportation system in particular fit together like a jigsaw puzzle rather than one unified body. Each company is limited to policing their own jigsaw piece. Unfortunately, in this case several pieces seem to be missing from the puzzle, such as the two areas in Hauptwache.

These four companies need to unify and work as a team. All of the companies we have interviewed indicated that they have great working relationships with one another through the 3-S group. The 3-S group was described to us by all of our interview partners. 3-S stands *for Sicherheit, Service, und Sauberkeit*, which means safety, service, and cleanliness in English. This group meets every other week to discuss crime fighting tactics and share insight into crime with each other in order to

improve their ability to fight crime. However, the 3-S group does not solve the problems in Frankfurt's train stations. They need new policies, jurisdictions, and more freedom to apprehend criminals and uphold the law. This can be achieved by extensively changing policies, or by creating a Unified Transit Police.

Our report has promoted the use of three types of crime prevention. These include CPTED, use of the Broken Windows Theory, and increased enforcement. All three can aid in crime fighting individually, but none of them will be effective if the Broken Windows Theory is not implemented. No matter how well a station is designed, if there is no reprimand to the first offender that commits a crime, the design itself is useless. Furthermore, if the Frankfurt Police increase the number of officers on the street, it will not have an effect unless they are granted jurisdictions that cover the train stations, given more responsibilities, and more power to keep law and order, including the ability to arrest criminals committing lesser crimes.

6.0 Recommendations and Discussion

This section is divided into two parts. The first part offers technical proposals to the City of Frankfurt on how they can improve the crime in their train stations. The latter part will offer recommendations to potential researchers and WPI students who may wish to further research the topic of crime in the train stations of Frankfurt.

6.1 Frankfurt Recommendations

We would like to offer the following recommendations to the City of Frankfurt to help reduce crime throughout their transit system and reduce the passengers' fear of crime.

6.1.1 Transit Police

A consolidated transit police force working for the city of Frankfurt would best reduce the crime and passengers' fear of it. There are currently four different police and security companies working within the Frankfurt transit system. This indicates that the City of Frankfurt acknowledges the need for policing within the stations, but they are not providing sufficient police service. Instead of having four different companies, Frankfurt should unify all four. This could be accomplished by either hiring additional officers and creating a transit police, or by pooling the resources they currently have, BGS, BSG, Frankfurt Police, and VGF, in to a unified police force. This will remove the current situation, in which the aforementioned companies are investing money towards achieving similar goals, yet each company is indirectly hampering the other companies' efforts. Due to the restrictions placed on each of the companies' jurisdictions, the criminals are being displaced and not removed. When the BSG and VGF chase them out to the street, the Frankfurt Police do not follow up by arresting and taking the criminals away. Therefore, the VGF and

BSG have done their job to their fullest ability, yet the criminals will merely come back to the stations in short time. By creating a consolidated transit police working for the Frankfurt Police, criminals would not have to be asked to leave the station, but arrested and removed from the streets.

6.1.2 Broken Windows Theory

Frankfurt needs to win back its city by cracking down on the smaller crimes, and cleaning up its overall appearance. A city with a strong history like Frankfurt's should not be subject to the urban decay that results from criminal activity. Both Detutsche Bahn and VGF point fingers at the Frankfurt Police for not cleaning up the lesser criminals. This indicates that we should have interviewed a member of the Frankfurt Police. However, in the eight weeks we were doing our research, our liaison was unable to obtain an interview even though he established contact early in the project duration. The crime statistics they did give is from the 1997 year and arrived in the final week of the presentation. The only opinionated information we received from the Frankfurt Police was through our liaison. When our liaison informed us that he had established contact, he also informed us that the police officer he had spoken with was not keen on the zero-tolerance, criminal crack down New York is implementing. We feel we touched upon a sensitive issue when we approached the Frankfurt Police by approaching them with our knowledge of New York. Obviously, since both VGF and Deutsche Bahn are disgusted and they both meet with the Frankfurt Police regularly, we can assume they have been under pressure from companies far more important than two American students. Therefore, they probably did not want to be bothered with two students trying to tell them what they are doing wrong.

In addition, stations cannot be viewed as an asylum for criminals. There needs to be a uniform attitude towards these criminals. When the train security companies chase the criminals out, the police should take them away. This prevents the criminals from constantly returning, and it also prevents the displacement of them.

6.1.3 Eschersheim

According to the Schrägometer, Eschersheim is the worst station in the Frankfurt system. In addition to application of the Broken Windows Theory, the use of CPTED to redesign the station would provide lasting results. CPTED has already been implemented at other Frankfurt train stations, so it is not a new topic to Germans. Should they be able to obtain adequate resources, CPTED should be applied to Eschersheim as well.

Surveillance

The entire Eschersheim station needs to be raised above the valley it is situated in. It should be brought to a minimum height equivalent to that of the surrounding neighborhood, if not higher. This would increase the surveillance of the station, as would trimming the landscape to a height that maintains the beauty and aesthetic values yet still allows natural surveillance to be established. The nighttime lighting at Eschersheim is poor and should either be increased or replaced with high intensity lights. The four windscreens that shelter the seating areas of Eschersheim are constructed of solid concrete and should be replaced with glass to provide better surveillance and reduce numbers of shadows and hiding spots for criminals. The same is true for the stairways and bridges which cross the tracks. The stair and bridge railings are currently constructed of concrete and should be changed to glass panels or steel railings, both of which will provide physical safety, yet increase surveillance.

Movement Control

The boundaries of Eschersheim station are poorly defined. There are no physical or natural characteristics that direct passengers toward the exits to the street. On both sides of the station, the hills run into the waiting platform and are not separated by any barriers. This doesn't assist in the establishment of territoriality and this lack of boundaries provides access to the station at any point along its side. Walking southward along either side of the station eventually brings you underneath a roadway overpass. The overpass is not part of the station, yet is a dark, gloomy hiding spot for criminals. Some sort of low-level fencing should be constructed to establish the boundaries of the train stations, thus creating a sense of where the station ends.

Motivational Reinforcement

A sense of pride needs to be established at the Eschersheim station. One way pride can be instilled in the passengers is by cleaning the environment at the station itself. The amount of graffiti at Eschersheim is ridiculous, and should be addressed. It should be removed completely, and then continuously wiped clean when new graffiti appears. The grass and immediate landscape are not maintained and promote a negative atmosphere. The abandoned building at the southern end of the south bound tracks should be removed. Furthermore, Eschersheim is built next to a local bar. Since our literature states that crime within 1/10 mile of a bar in the United States is doubled, building a bar at a train station is not good CPTED practice (NYDOJ, 1999).

Activity Support

There is little activity at Eschersheim. Information Kiosks should be created, as well as an increased number of benches. Any form of activity will help remove the sullen atmosphere of the station.

Conclusion

It is essential to restate that even an entire reconstruction of Eschersheim will not work unless the lesser quality of life crimes are stopped first. Additionally, millions of dollars should not be invested into a CPTED project at Eschersheim before an in depth study on the neighborhood is completed. If Eschersheim has high crime, a CPTED designed station will slowly deteriorate since the Broken Windows Theory is not being implemented. If the Broken Windows theory is not being implemented, CPTED is useless. Even the best CPTED projects will eventually erode if society lets the lesser crimes go unpunished.

6.2 Recommendations for Future Research

Through our eight weeks of research we obtained significant amounts of data, but we did encounter many obstacles that hampered our efforts. A warning of these obstacles will greatly benefit future researchers.

6.2.1 Surveys

We strongly suggest that future projects use a survey to measure the level of fear in passengers. Unfortunately, we were not able to use our surveys to obtain any significant data. Therefore, instead of letting our efforts go to waste, we wish to recommend the use of our survey. The only option we had to apply our survey was by using convenience sampling. Using this method of sampling introduces a coverage error far too large to make conclusive statements from the data collected. The sample selected in our survey can't represent the reference frame we wished to research

because the informants were not chosen in compliance with the accepted methods of sampling. However, the time spent using our survey has not been a loss. The survey we developed is a good research tool and has been effectively pretested with its application at the Eschersheim School. Some of the conclusions that can be made from the application of the survey at Eschersheim resulted from question three. We intended it to be a filter question, and it appeared to create quite a bit of confusion. The question attempted to reduce what we believed was a bias toward the right side of our five-point scale in question number four. Thirteen students out of seventy-six responded "no" to question three, but then did not follow the directions when informed to skip the next question. We recommend that either the direction to skip question number four be reiterated in the first line of question number four, or that question three be removed entirely. In conclusion, our convenience sampling allowed us to complete an adequate pretest since our surveys were given to a small portion of the sample we hoped to survey.

One issue that needs to be addressed regarding surveys is the obtaining of a permit from the appropriate companies that will allow you to approach passengers and distribute mail-back or face to face surveys. We strongly recommend this issue be addressed in the first few weeks of the project's initiation if not before. We have discovered that it can take up to three months to acquire the proper permission to administer a survey in the train stations of Frankfurt. Furthermore, a decent German vocabulary will strongly aid in mail-back surveys, and even more so in face to face surveys. The vocabulary list in our Appendices will provide some assistance for technical words that a translator might not know.

6.2.2 Frankfurt Police

We were unable to speak with the Frankfurt Police for whatever reasons. Since this topic focuses on crime and its prevention, it is critical to find out what they are doing from someone who is working for the Frankfurt Police. It is important to establish an interview date as early in the research as possible. It is equally important to approach them as researchers interested in what the Frankfurt Police Department is doing and what the current situation of crime is. When we approached them, we expressed our interest towards whether or not they are implementing the Broken Windows Theory like New York. We feel our approach was a factor in our inability to interview them.

6.2.3 Further Research

Crime and its prevention are relevant topics since they exist in every country and society. There are an unlimited number of resources to use in the field. There is also a wide range of methods that can be used to obtain data from these resources. These include surveys, ethnography, natural and participant observation, historical research, and interviews. All of these methods can produce relevant data for crime related research.

Frankfurt is the most Americanized city we visited while we were in Europe. Most people are able to speak at least conversational English, and some are fluent. Therefore, Frankfurt is an ideal city to do projects that so heavily rely on personal contact with natives, such as this project.

We permit and recommend the use of our project for further research. Additionally, we would like to offer the names of our contacts and their contact information. These can also be found in Appendices section.

6.2.4 Concluding Discussion

It is too easy to demand that Frankfurt needs to spend millions of dollars rehabilitating their stations to accommodate CPTED design. The same is true for the hiring of additional police or to initiate a Broken Window Theory crack down on the lesser crimes. These solutions are simple in the eyes of the third person, especially an engineer who often knows no economic boundaries.

Currently, CPTED, the Broken Windows Theory, and increased enforcement are technology's answer to crime reduction in today's society, but not necessarily the most practical ones. CPTED is restricted by money and social differences.

A city, such as Frankfurt, has a budget that it has to meet. Rarely does a budget of any nature have surplus to renovate structurally sound buildings to potential reduce crime. Frankfurt appears to be aware of this. As a result, Messe, a newly constructed train station, was designed in compliance with CPTED. The Schrägeometer further supports this as Messe was scored most CPTED compliant. Furthermore, stations such as Glauburgstraße, a station that deteriorated and was then renovated, has been upgraded to a CPTED compliant design. Obviously, Frankfurt is using CPTED at a pace that is convenient to its needs. Even though money will play a role in how rapidly cities can become CPTED compliant, one obstacle that CPTED cannot overcome is the differences between the different groups of society.

The German culture has an interesting view on foreigners. After living in Germany for over two months, it was easy to see that minorities, for example the Turks, were always considered outsiders. Even German-born citizens of Turkish descent were still considered Turks in the eyes of a German. Additionally, Frankfurt kept track of its criminal statistics by nationality. This cultural gap cannot be cured by

CPTED. If Germans are going to consider Turks outsiders, they will do so regardless of how CPTED compliant the city may be. It is social issues of this nature that cannot be repaired by a single governmental action, yet need the assistance of the entire community, especially those contrasting groups.

On a positive note, the fact that the United States has had success with CPTED and that it is being used in Germany is significant evidence that its is a reasonable solution. On the personal level, we both felt safer at the stations that ranked well on the Schrägeometer as oppose to the ones which did not fair so well. Naturally, taking into consideration just our two opinions alone is not nearly significant evidence that CPTED is the only solution, but it is the only evidence we have due to our inability to survey the passengers. Additionally, we felt safest on the subways of Stuttgart, Germany in which CPTED had been used so extensively that the trains themselves resembled mobile living rooms not mass transit. The interior and exterior of the trains were miraculously clean, and the seats were made of padded cloth. A new extension of one of Stuttgart's subway lines revealed new stations that had transparent waiting areas, free from obstruction, clean, announcement systems, etc. Basically it promoted an extremely pleasant and safe environment. Stuttgart, as a result of such CPTED stations, possesses crime rates less than Frankfurt's. According to the BGS, the amount of hours invested into train security in Stuttgart was considerably less than in Frankfurt. Due to time restraints and the scope of our project, we were never able to access specific data to further explore this discovery. However the fact that they need less man-hours of surveillance in Stuttgart contradicts our argument that additional police may be the solution to reducing crime.

Previously we discussed increased enforcement as a valid solution. Much like CPTED, though, hiring 100, 200, 1,000 new police officers is easier said than done.

Diminishing budgets also restricts increasing the numbers of law-enforcement officers. However, the concept of increasing the enforcement through internal jurisdictional changes, (I.e., transit police, homicide divisions) can be successfully implemented at minimal amounts of money. We have already explained the jurisdictional problems German police and security companies are faced with, but they should be easily solved with a unifying force. We feel this type of jurisdictional unification is not being implemented because of Germany's history. There appears to be a fear in Germany of letting any one person, any one company, and any one police force become too powerful. This fear most likely comes from the Nazi party that ruled Germany's Third Reich. It is obvious in Germany's police department divisions that every one receives some responsibility, but that nobody receives too much responsibility. Hence, you have VGF, then Frankfurt Police, and then BGS, and lastly you have the military. It is also evident in the matter of the trains themselves. A different company is responsible for each the trains, subways, security, the stations, and the tracks. Additionally, Germany doesn't wish to infringe on the individual rights of any one person. We learned this when Studebaker informed us that the Police and VGF could only remove a drunken homeless person at consent of that drunken person. This was so regardless of the state the drunkard was in. This too is reflective of preventing what happened to Germany under Nazi rule from happening again. This type of attitude opposes any attempt to have a successful application of the Broken Windows Theory. In order to implement the theory as New York does, you would have to remove drunks from the street, as well as reducing prostitution, and panhandling. Though German culture does not condone these actions it does not attempt to stop them. A few blocks from the train station numerous brothels with red lights lined the streets. Frankfurt was contented isolating its prostitution in one area,

regardless of the fact that it was within walking distance from their prestigious train station. Furthermore, neither Frankfurt, nor any other subway system we saw in Germany (Műnchen and Stuttgart as well), had turn-styles to guarantee that persons were paying their fares to ride. On average we would not see VGF or BSG employees who checked passes for a week at a time.

While German culture tries to prevent the growth of a superior company or leader and to not take away any one person's individual rights, they also try to control the people. Contrary to the aforementioned two philosophies, this would be something that does resemble Nazi rule. Our first impression of Germany came when we waited to change trains in Cologne and realized that you had to pay money to use the bathrooms. They systematically could control who went in to the bathrooms by taking away the individuals right to use a public bathroom free. That's an ironic fact knowing one could travel halfway across Germany without a pass, as long as he didn't run into an employee checking passes, but he/she could not use the bathroom in the train station. Another fine example is our survey. The survey we proposed was one that would have been orally given. Therefore, there would not have been any pamphlets or surveys distributed since we would have recorded the responses as they were answered. In essence, we merely wanted to talk to people. The German culture labels this act of trying to communicate to people as an activity that needs a permit, which takes two months to obtain. To sum up, we needed a permit to talk to people. This was very indicative of the controlling ways of the German culture.

These three conflicting trains of thought keep Germany in the cultural stalemate that it is in. Possibly they are aware that a unified transit police would be best for them, but are afraid of having a police force with that much power due to their past history. However, the turn-styles in the bathroom are evidence that their past is

not totally gone. Studebaker, Rautschka, and Käutner did all their job would let them to improve conditions within their jurisdictions, yet none of them felt they were doing as much as they should be and pointed figures at people in superior positions.

This cultural conflict should be expected from a country that was torn numerous times by wide scale war. It is also the country that caused the entire world to come to full-scale war in World War II. The real sociological event that left the greatest effect on the German culture was the Cold War. For fifty years Germans had to live under the notion that Germany would be the place the world would end in the event of a global nuclear war. This came after their country was torn in two by the U.S – Russian division of the country. The most heavily defended border in the world now separated friends and family. Countries that were previously allies, were now enemies and vice versa. In 1999, just ten years after the Berlin Wall's collapse, Germany is in an awkward position trying to regain a name and rebuild a nation.

APPENDIX A

Goal Statement

To assess the crime and passengers' fear of crime in Frankfurt's train stations, and propose solutions to reduce them.

APPENDIX B

Glossary of Terms

Amtrak-the privatized company that has a monopoly on the United States' heavy rail passenger service.

Arrest slips- the form an arresting officer is required to fill out upon making an arrest. It gives demographic information of the criminals as well as the laws they have broken.

BGS- Bundesgrenzschutz. Germany's national police who have the jurisdictions of trains and other international areas of travel e.g., airports and main train stations.

BSG- Bahn Schutz & Service GmbH. The company hired by Deutsche Bahn that provides security on the commuter rail, domestic heavy rail trains, as well as their stations.

CPTED- Crime Prevention Through Environmental Design. A concept of creating safer environments by effective planning to the social, managerial, and physical environments of structures. The handbook is issued by the National Crime Prevention Institute (NCPI), and gives effective strategies to every aspect of executing a CPTED project.

Deutsche Bahn AG- A publicly owned company that runs Germany's national train system. They own all the heavy trains, commuter trains, and tracks.

Heavy Rail- Term given to describe the trains that travel longer distances than commuter trains.

HOS- Homeless Outreach Squad. A subdivision of New York City's Transit Police, they are responsible for the handling of homeless people loitering and residing in New York's subway stations.

Index crimes- Seven offenses defined by the FBI as a basic measure of the occurrences of serious crime. These include the violent crimes of murder, rape, robbery, and aggravated assault; and the property crimes of burglary, larceny, and motor vehicle theft.

Index property crimes- defined by the FBI as burgulary, larceny, and motor vehicle theft

Index total crimes- total number of FBI defined index crimes

Index violent crimes- defined by FBI as murder, rape, robbery, and aggravated assault

Lesser crimes- Lesser offenses are more often referred to as misdemeanors. They include: disorderly conduct, and driving while ability

Misdemeanors- An offense other than a traffic infraction for which the sentence of no more than a year can be imposed.

NCPI- National Crime Prevention Institute. An institute established to help prevent crime. It issues the CPTED-handbook.

NYCTP- New York City Transit Police. A 3,000 officer subdivision of the New York City Police Department. This unit is responsible for the policing of the City's trains, subways, and stations.

NYPD- New York City Police Department.

NYSDOCJ- The New York Department of Criminal Justice. The state governmental organization responsible for criminal statistics and analysis of New York State crime.

Pepper spray- A chemical spray used by law enforcement agents and citizens alike for defensive purposes. When it is sprayed it causes temporary difficulty in breathing and disorientation.

Pick Pocketing- A criminal act in which the criminal takes the victim's belongings.

Private Law- Laws deemed illegal in certain areas by either the municipal or the property owner e.g., no parking zones and no smoking where prohibited.

Quality of life crimes- Crimes that erode the quality of life such as loitering, public drinking, public urination, prostitution, vandalism.

Reference Frame- The total population which is considered in creating a survey and selecting a sample for this survey.

RMV- Rhein-Main Verkehrsgesellschaft. A management company for the trains and schedules of them within the state of Hessen.

Sample- Portion of the total population from which the opinions of the total population will be estimated through surveying.

S-bahn- Schnellbahn. German word for the electric commuter rail trains.

Status symbols- Material possessions that are not a necessity, yet raise the status of the owner e.g., Expensive jewelry, cellular phones, or clothes.

Summons- Better known as a "ticket," a summons is given to people who have broken a private law. A summons will stay on a person or automobile's record, until it is paid in full.

Triangulation- The minimization of error in research by investigating a topic through multiple methods.

U-bahn- Untergrundbahn. The German word for subway.

USDOJ- United States Department of Justice. Governmental organization that compiles the statistics and their analysis of the nation's crime rates.

USDOT- United States Department of Transportation. Governmental department responsible for the maintenance and construction of the nation's infrastructure e.g., interstate highways, waterways, bridges, tunnels.

Variance- A written approval from a municipal government that allows codes and regulations to be null and void in certain circumstances.

Vestibule- An enclosed canopy that is attached to a permanent structure. It allows protection from weather.

VGF- Verkehrsgesellschaft Frankfurt am Main. The company responsible for the maintenance and security of Frankfurt's subways, busses, and trams (Straßenbahn) and stations.

APPENDIX C

Survey

Wir würden Ihnen gerne einige Fragen über die Sicherheit auf Bahnhöfen stellen. Lesen Sie sich bitte jede der unten aufgeführten Fragen sorgfältig durch, und kreisen Sie die Ihrer Meinung nach am ehesten zutreffende Antwort ein.

1. Wie häufig benutzen Sie diesen Bahnhof. Bitte kreisen Sie die Ihrer Meinung nach am ehesten zutreffende Antwort ein. Wobei 1 bedeuten würde Sie benutzen den Bahnhof täglich und 5 bedeuten würde Sie benutzen ihn sehr selten.

TÄGLICH	WÖCHENTLICH	MONATLICH	SELTENER ALS MONATLICH	SEHR SELTEN	WEIß NICHT/ KEINE MEINUNG
1	2	3	4	5	6

2. Wie würden Sie die Verbrechensrate auf diesem Bahnhof auf einer Skala von 1 bis 5 einschätzen. Wobei1 bedeuten würde, daß sich hier täglich Verbrechen ereignen und 5 bedeuten würde daß sich hier nur sehr selten Verbrechen ereignen.

TÄGLICH	WÖCHENTLICH	MONATLICH	SELTENER ALS MONATLICH	SEHR SELTEN	WEIß NICHT/ KEINE MEINUNG
1	2	3	4	5	6

3. Nun möchten wir Ihnen einige Fragen über die Kriminalität auf Bahnhöfen stellen. Sind Sie der Meinung, daß die Kriminalität auf diesem Bahnhof zur Zeit ein Problem darstellt?

JA	NEIN
1	2

(Wenn "nein" beantworten Sie als nächstes die Frage Nr.5)

4. Vor welcher der unten aufgefürten Persohnengruppen und Vorfällen fürchten Sie sich im Allgemeinen am meisten. Bitte kreisen Sie die Ihrer Meinung nach am ehesten zutreffende Antwort ein. Wobei 1 bedeuten würde Sie fürchten sich sehr und 5 bedeuten würde Sie fühlen sich sehr sicher gegenüber der betreffenden Persohnengruppen oder Vorfälle.

Note. This spacing here should be cleaned up when distributed

	GROßE ANGST	ANGST	KEINE GROßE ANGST	KEINE ANGST	SEHR SICHER	WEIß NICHT/ KEINE MEINUNG
a) Banden /Gangs	1	2	3	4	5	6
b) Diebe	1	2	3	4	5	6
c) Überfallen werden	1	2	3	4	5	6
d) Vandalismus	1	2	3	4	5	6
e) Drogenkriminalität	1	2	3	4	5	6
f) Vergewaltigung	1	2	3	4	5	6
g) Herumlungernde	1	2	3	4	5	6

Jugendliche

h) Betrunkene/Alkoholiker	1	2	3	4	5	6

5. Nun möchten wir Sie zu ihrem Gefühl der Sicherheit auf diesem Bahnhof befragen. Wir bitten Sie daher bitten die Antwort einzukreisen, die Ihrer meinung nach am ehesten mit Ihrem Gefühl der Sicherheit auf diesem Bahnhof uebereinstimmt. Wobei 1 bedeuten würde Sie fühlen sich auf diesem Bahnhof sehr unsicher und 5 bedeuten würde Sie fühlen sich hier sehr sicher.

SEHR UNSICHER	UNSICHER	WEDER UNSICHER NOCH SICHER	SICHER	SEHR SICHER	WEIß NICHT/ KEINE MEINUNG
1	2	3	4	5	6

6. Nun möchten wir Sie zu den "graffiti-Malereien" in Bahnhöfen befragen. Wo würden Sie, auf einer Skala von 1 bis 5, Ihre Einstellung gegenüber der "graffiti-Malerei" auf Bahnhöfen einordnen? Wobei 1 bedeuten würde Sie sind diesen "graffiti-Malereien" sehr negativ und 5 bedeuten würde Sie sind ihnen sehr positiv gegenüber eingestellt.

SEHR NEGATIV	NEGATIV	WEDER NEGATIV NOCH POSITIV	POSITIV	SEHR POSITIV	WEIß NICHT/ KEINE MEINUNG
1	2	3	4	5	6

7. Wie sind Sie mit dem Erscheinungsbild und Zustand dieses Bahnhofes zufrieden? Bitte kreisen Sie die Antwort ein die Ihrer Meinung am ehesten zutrifft. Wobei 1 bedeuten würde Sie sind sehr unzufrieden mit dem Erscheinugsbild und Zustand, und 5 bedeuten würde Sie sind sehr zufrieden
damit.

SEHR UNZUFRIEDEN	UNZUFRIEDEN	WEDER UNZUFRIEDEN NOCH ZUFRIEDEN	ZUFRIEDEN	SEHR ZUFRIEDEN	WEIß NICHT/ KEINE MEINUNG
1	2	3	4	5	6

8. Abschließend möchten wir Ihnen noch zwei Fragen zu ihrer Persohn stellen. Sind Sie männlichen oder weiblichen Geschlechts?

MÄNNLICH	WEIBLICH
1	2

Wie alt sind Sie?

UNTER 20 JAHRE	20-28 JAHRE	29-40 JAHRE	41-60 JAHRE	ÜBER 60 JAHRE
1	2	3	4	5

Wir möchten uns hiermit sehr dafür bedanken daß Sie sich die Zeit genommen haben an dieser Umfrage teilzunehmen. Sollten Sie noch Anregungen oder Kommentare zu den oben angesprochenen Themen haben, können Sie diese unten vermerken. Vielen Dank.

APPENDIX D

Technical Vocabulary List for Interviews

Assault	Überfall (m), Vergewaltigung
Attendants	Begleiter –in
Avoid	(person) meiden, (thing) vermeiden
Cleanliness	Sauberkeit (f)
Crime Prevention	Verbrechenverhütung (f)
Crime	Verbrechen (n)
Drugs (narcotics)	Betäubungsmittel (n), Rauschgift (n)
Drugs	Droge (f), Arnzei (f),
Drunk (person)	Säufer –in, Trunkenbold (m)
Effect	Wirkung auf + *acc*, wirken auf (*acc*), bewirken
Fear of Crime	Angst vor Verbrechen
Graffiti	Graffiti (n)
Interview	Interview (n), interviewen
Jurisdiction	Rechtsprechung, Gerichtsbeßirk
Lighting	Beleuchtung (f)
Litter	herumliegender Abfall (m)
Loitering	Trödelei (f), (no loitering) Herumlungern verboten, (loiterer) Bummler –in
Mug	Überfallen
Murder	Mord (m), (er)morden
Pick-pocket	Taschendieb (m)
Police	Polizei (f)
Sexual Assault	Vergewaltigung
Shadow	Schatten (m)
Survey	Umfrage (f), befragen
Theft	Diebstahl (m)
Threat of Violence	unmittelbare Bedrohung (f)
Vandalism	Vandalismus (m)
Violence	tätlicher Angriff (m)
Weapons	Waffe (f)

APPENDIX E

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