ny experienced police officer can identify problem areas in his sector: he will be able to point out locations that experience burglaries, or where aggravated assaults occur almost daily. For the most part, what field personnel already know can now be confirmed by descriptive crime mapping. The time of day, day of week and season for peak crime occurrences can be identified. All of this data is essential in developing tactical and strategic interventions to address the problem. The questions as to where and when offenses take place are answered. The "why" question, however, has not been answered.

To answer why offenses take place it is necessary to perform crime analysis. Crime analysis involves the collection and analysis of data pertaining to criminal events, offenders and victims. Crime analysis can provide clues about the identity of suspects, assist in the design of prevention and apprehension strategies, aid in evaluating programs, and help gain a better understanding of environmental factors that may be associated with crime.

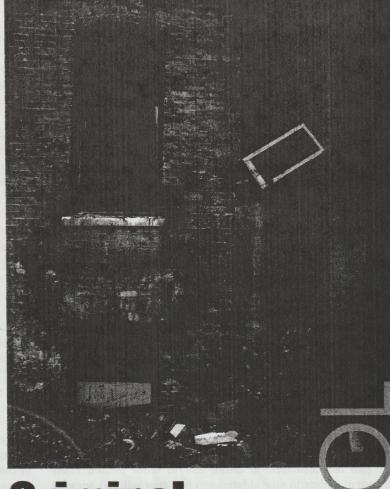
Criminological Theories

The solution to distilling all the variables of crime is criminological theory. Successful analysis of spatial patterns of crime can be guided by criminological theory that can link geography to crime, unravel the spatial characteristics of different types of crime and provide explanations for the high vulnerability of some neighborhoods or demographic groups.

Many experienced police managers will recognize these criminological theories or concepts, maybe not by name but through their experiences. Practitioners can benefit from applying criminological theory to a criminal justice problem. Specific conditions and processes generate identifiable crime patterns. Theories can help us understand these patterns and develop effective intervention. Theory can expand the crime analysis process to allow one to see crime in its backdrop rather than as a self-contained phenomenon with self-contained solutions. The point of using crime analysis based on criminological theory is that a systematic approach to analysis rooted in theory may yield more consistent results with a deeper level of explanation.

Opportunity Theory

The opportunity theory is based on an offender's opportunity to commit a crime. In the context of environmental criminology, opportunity theory has two aspects: target attractiveness, which includes value and portability; and accessibility, which includes ease of physical access, visibility and absence of sufficient guardian. As to the first aspect, the British Crime Survey found that cars of the wealthy within a given



Criminal Theory on the Street

Analyzing Why Offenses Take Place

area were more likely to be targeted. All things being equal, the higher value item is stolen. In the second aspect, it was found that cars parked in a shopping center lot with frequent passers-by suffered far less than those used by commuters who parked at a railway station. Parking lots are easy to go into and out of, and those at railroad stations offer low risk to criminals because there is limited pedestrian traffic that can observe the offense. There is reduced surveillance and an absence of a sufficient guardian.

If through crime analysis visitors' cars at a tourist attraction were broken into and the burglaries were identified as a problem, the opportunity theory could be

applied to develop interventions to address the problem. Interventions to have the visitors take valuables with them or remove them from sight could reduce the target attractiveness and visibility, both elements of the opportunity theory.

Routine Activity Theory

The routine activity theory states the probability a crime will occur at any specific time and place might be taken as a function of the convergence of a likely offender and suitable target in the absence of a capable guardian. The essential characteristic of this theory is the concept of opportunity presented in day-to-day activities.

In applying the routine activity theory, it may be found that a resident who lives alone has an increased probability of being the victim of a burglary, as was discovered by the British Crime Survey. The absence of a capable guardian was increased because the property was left unattended more often. Effective interventions could be developed, like neighborhood watch, tactical alarms, covert surveillance or increased patrols. Of relevance to this theory is self-policing, which involves people taking steps to reduce opportunities to be victimized by various kinds of avoidance behavior. This may include not walking alone at night or not going into certain parts of a city after dark.

Rational Choice Theory

The central premise in the rational choice theory is that people engage in crime primarily because a good opportunity presents itself. The situational decision to offend is taken in circumstances when people think the risk is worth

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taking, when the opportunity is clear and the chances of being seen and caught are small. This is a version of the notion that human action is deterred by pain and driven by pleasure. This theory is more applicable to crime for gain than other crime.

An offender may engage in rational choice by selecting a victim for robbery and violence. Will he select a 30 year old. fit male, in the middle of a business district during the lunch hour, or an elderly female at night in a secluded area? Using the rational choice theory, obviously he would select the elderly female.

Cognitive Spatial Awareness Theory

Cognitive spatial awareness is based on the postulate that most offenders will not commit offenses in areas poorly known to them. Even search patterns for targets are limited to areas of which they have knowledge. Offenders are most likely to commit crimes where criminal opportunities intersect with cognitively known areas. This theory holds that offenders commit crimes predominantly in areas that they are familiar with and where they feel comfortable. Burglary sites are typically clustered very disproportionately in areas closest to the offenders' normal routes to work and recreation.

This theory helps explain why crimes, especially property crimes by the young, are most often committed in the criminals' own neighborhoods. It can also explain why crime patterns cluster along major arterial roadways: there is more traffic, some of this traffic is offenders, and they become familiar with and comfortable with offending in the immediate area.

Multiple Victimizations

Victimization is the best single predictor of victimization— those who have been victimized are more likely to be victimized again. Re-victimization tends to occur quickly. Repeat victimization contributes substantially to areas of high crime rates and hot spots. A major reason for repetition is the offender takes later advantage of opportunities the first offense presents. The offender who engages in re-victimization tends to be more established in crime careers. The same perpetrators seem to be responsible for the bulk of repeated offenses against a victim.

The West Yorkshire Police in England targeted repeat burglaries in 1995. They developed a graded response to victims based on the number of prior victimizations. These responses were termed bronze, silver and gold. As the number of prior victimizations increased, so did police interventions. These interventions increased police action, culminating in the gold response, which included property marking, security upgrading, focused patrolling and the use of high technology devices like silent alarms. As a result of the initiative, the rate of prior victims becoming repeat victims was cut in half.

Wikstrom's Tentative Model

Wikstrom's tentative model draws on two previous theories: the routine activity theory and the cognitive spatial awareness theory. The two key aspects of this model are the types of activities that take place in an area and the composition of the population at any given time in the area. Wikstrom eases the application of the above two theories to

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include expressive crimes, like assaults or malicious damage, by considering locations where encounters, environments and relationships liable to promote friction might take place.

A 1995 Chicago study of the relationship between the locations of taverns or liquor stores and criminal behavior in neighborhoods found that overcrowding in the establishment was an important predictor of violence and aggression. It was found that neither the density of liquor licenses nor consumption density were related to criminal activity. Interventions by utilizing a fire inspector to prevent overcrowding would be promising. Further, this study supported by Wikstrom's tentative model may have saved police resources by preventing the blanket application of interventions targeting all bars when only the overcrowded bars needed action.

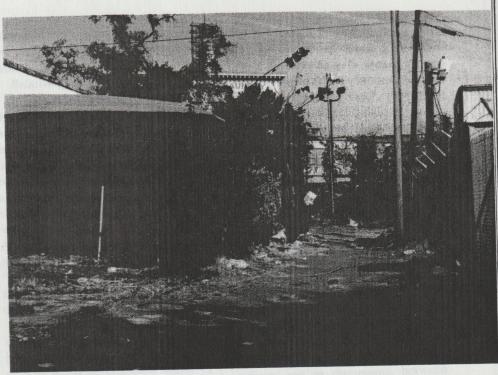
Social Disorganization Theory

The social disorganization theory holds that communities characterized by few friendship networks (like close neighbors or family in neighborhood), unsupervised teenage peer groups (like gangs), and low organizational participation (like low church attendance or PTA involvement) have disproportionately high rates of crime and delinquency. Further, the variations in these dimensions of community social disorganization were shown to mediate in large part the effects of community structural characteristics like low socio-economic status, residential mobility, ethnic heterogeneity and family disruption typically used to explain high crime areas.

One study of this theory found the level of unsupervised teenagers in a neighborhood had the largest effect on all forms of victimization. Effective police interventions could include antigang units, gang reduction programs, development of recreational activities like police boys and girls clubs, summer and part-time job opportunities or other constructive alternative activity initiatives.

Community Change Theory

The community change theory is a three-stage process that appears to underpin the emergence of particular districts as high offender rate areas. The first stage is shifts in land use, like



increase in renting and decline in Second, the owner occupation. changes in population-related features in areas like population decline, increase in unrelated individuals, and

an increase in residential mobility. Third, changes in socio-economic status, like more unskilled people or higher numbers of unemployed. Of



further importance is the speed at which these changes take place.

Possible interventions to community change may be courting businesses or industry to the neighborhood to provide jobs, job training, local codes restricting rents and rewarding owner occupied properties with tax incentives.

Broken Windows Theory

The broken windows theory holds that signs of disorder in an area, such as broken windows, housing abandonment, litter and graffiti, will undermine the subtle and informal processes whereby communities normally maintain social control. These conditions create an environment conducive to offending.

The broken windows theory was comprehensively addressed during a project in Washington, DC, in 1996. In that initiative junked cars were towed, graffiti was removed from buildings, abandoned properties were secured, refuse blocked alleys cleaned, streets were swept, broken street lights were repaired, and vacant lots were

cleared of trash. Significant reductions in violent, property and nuisance crimes resulted.

Relative Deprivation Theory

In the relative deprivation theory the absolute status of an adolescent is not as important as a youth's social status relative to his surrounding population. Those from lower status neighborhoods who live near high status areas committed more crimes than those from lower status neighborhoods who did not live near high status areas. A situation in which the "have not" populations come into contact with "haves" appears to increase the frustration associated with property due to the constant reminder of inequalities.

Interventions in the relative deprivation theory may include making disposition changes in potential offenders, such as moral development helped by "big brother" programs. Initiatives that focus on changing potential offenders' current life circumstances may also prove effective.

The criminological theory applied to underlying circumstances in crime

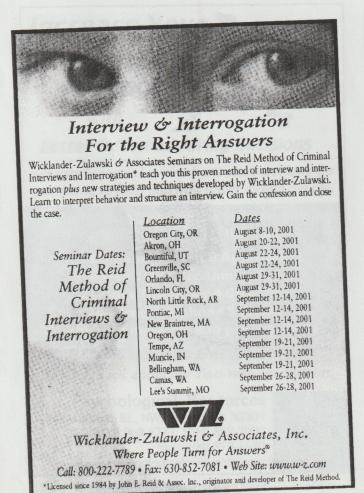
patterns can help to construct the answer to why the events happen in a particular area at a particular time. Criminological theory applied to crime analysis enhances understanding that can ultimately lead to effective interventions.

Criminological Concepts

In efforts to develop and evaluate programs targeted at crime prevention, develop policy, justify budgets and help to identify and define problems, there are other criminological concepts These other that are important. concepts can help in grounding the context of important decisions in the deployment of police resources to prevent and suppress criminal activity. Understanding these terms is also important because they are coming up more and more in practitioner publications and in discussions between operations officers. They are no longer restricted to the social scientist or academic.

Displacement

Displace means to move or put out





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of the usual or proper place. Displacement occurs when offense is replaced by some other behavior or moved from one place to another place. There are six types of displacement:

1) Temporal Displacement: the time the crimes take place is changed to another time. For example, if police use saturation patrol on an open-air drug market during the known peak hours of 8:00 p.m. to 11:00 p.m., temporal displacement could move the peak hours from 12:00 a.m. to 2:00 a.m. when it is seen as less risky.

2) Target Displacement: targets who are difficult are given up for easier targets to victimize. Convenience stores may install bullet resistant glass to separate customers and employees or they may have two employees working at all times. These actions may make the convenience store a more difficult target for a robbery. The offender could displace the target from the convenience store to a person on the street, moving commercial robberies to street robberies.

3) Spatial Displacement: the most recognized form of displacement. It entails offenders moving from one location to another location. The belief is that crime prevention interventions by police cause offenders to move to less protected areas.

4) Tactical Displacement: the type of tactics used in offending are changed to get around police interventions. In tactical displacement, an open-air drug market targeted with a police saturation intervention may change its tactics by moving drug sales to the inside of a house rather than on the street.

5) Perpetrator Displacement: when offenders are arrested, move or cease offending, new offenders move in to take their places. When a drug dealing operation is "taken down," there may be perpetrator displacement if a new drug operation moves in to fill the void because of its knowledge of an existing market.

6) Type of Crime Displacement: offenders take up another type of criminal behavior if one type becomes too difficult for them to commit. With the increase in direct deposit of government checks, offenders who relied on theft from the U.S. Postal Service will have to take up another type of criminal activity, perhaps by moving to some type of Internet fraud.

It is often believed when a crime hot spot is identified and a prevention program is put in place, it chases offenders out of the area and across the city, county or state line. Thus the local problem has been solved, but the net general gain is zero, and could be negative if the offenders are displaced to an area that is more vulnerable because of less effective policing. Reviews of the issue of displacement suggest it is not the curse on crime reduction it has often been thought to be. In fact, surrounding areas of the police intervention may benefit. This is called diffusion of benefits effect or prevention diffusion. Areas in the margins of a project area will experience reductions as the good effect is spread. Hot spots may attract offenders, facilitate offending or both.



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This could cause crime to spill into nearby neighborhoods. Effective police enforcement or prevention actions at a hot spot may reduce crime in a nearby area.

Secondly, if there is spatial displacement, the extent of the problem displaced will be reduced. Some years ago, in dealing with a serious prostitute problem in Washington, DC, over 200 prostitutes were working a four-block area of the city every night. The problem was targeted with a number of interventions and eliminated the problem at that location. The prostitutes moved about six blocks away, but there were then only 25 prostitutes working the streets every night. There was spatial displacement but at significantly reduced severity.

Social Crime Prevention

This loosely termed concept is currently enjoying a period of growth. Social crime prevention interventions often focus on changing potential offenders' current life circumstances, like offering improved leisure facilities (Police Boys and Girls Clubs, midnight

basketball). It also includes interventions to improve opportunities for legitimate pursuits and careers (job training, adult education programs). Making dispositional changes such as moral development in potential offenders is also part of social crime prevention (Big Brother and Big Sister programs, boy scouts, mentoring initiatives). It has been suggested that efforts should be made to change the street culture of offenders and that offender-oriented interventions should be included as part of police strategies.

Density Paradox

Density paradox refers to the notion that, on one hand, high population densities create a large pool of potential crime victims because people and property are crowded in small areas: there are more potential offenders and suitable victims. With the increased population also comes increased surveillance, increasing the risk of being witnessed to the offender. Thus, the witness pool takes on the role of guardian. So, even though there may be a large number of targets and

offenders in a small area, the high population of possible witnesses who act as guardians prevent crimes from occurring.

Intensity of Use – Critical Intensity Zone

This concept is based on the assumption crimes on the street are influenced both by the presence of witnesses, which deter crimes, and the presence of victims, which make them possible. Further, different types of land use affect the probability a witness would show up in effective ranges during the time it takes to perpetrate an offense. If the intensity of the land use is low, the theory suggests the level of crime will be low; as the level of intensity of the land use increases, the number of potential victims available increases sufficiently to draw the attention of the potential offender, but people are not sufficiently numerous to provide deterrence through the threat of being a witness. This situation is called the "critical intensity zone." It is in this critical intensity zone that most street crimes





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are postulated to take place. When the intensity of use is very high, the level of activity is high enough to provide an adequate number of witnesses to deter the potential offender.

This hypothesis was tested in a 1994 study in Chicago's northeast side. The intensity of use of place was measured by distance from an elevated train or subway station. Of the street robberies on the northeast side in 1993–1994, 39% occurred within 1,000 feet of a rapid transit station. These robberies were, however, not more frequent close to the station but spiked in the "critical intensity zone" that was identified as a distance between one and two blocks from the station.

This was also shown to be the case in a 1995 study in New York City. In both cities, the number of robberies spiked where the density of the victim pool was still high, but civilian and police surveillance declined.

Distance Decay

Distance decay is connected to the cognitive spatial awareness theory where it is postulated that most

offenders will not commit offenses in areas poorly known to them. A criminal's mental map has a distance decay function. The further from home they travel, the less detailed the map becomes and the less likely the criminal will offend. This suggests it is more likely offenders live close to the sites of their crimes than far away.

A second aspect of this concept is based on the behavioral axiom, the principle of least effort. This principle suggests people usually exert the minimum effort possible to complete tasks of any kind. When multiple targets of equal desirability are available, all things being equal, the closest one will be chosen. (The determination of closest can be somewhat problematic in that there are other influences than just "the way the crow flies" distance. Wheel distance, difficulty of route, expenditure of time and money are just a few.)

Buffer Zone

There may be a buffer zone centered around an offender's residence, within which the criminal sees targets as being too risky to attack

because of their proximity to the offender's own residence. If one can visualize a donut, the hole in the center would be the buffer zone with the donut itself creating the spatial distribution of offenses.

A study was conducted on the Hillside Strangler case in 1987 that plotted fatal encounter, body or car dumpsites, and victim's residence locations on a map of Los Angeles. It detected the presence of an area surrounding the home of Angelo Buono in which no crimes were known to have occurred. Discovery of such a phenomenon, presumably resulting from a desire on the part of the killer to avoid drawing attention too close to his home, could alert detectives to investigate the significance of the area.

Neighborhood Permeability

Neighborhood permeability is the number of access streets from traffic arteries to the neighborhoods. This concept subscribes that, all things being equal, opportunities have a greater likelihood of being exploited if they are on relatively accessible and frequently traveled streets—the higher the traffic on the streets, the higher the introduction of potential offenders to potential targets.

Some studies have found that permeability had a significant effect on burglary rates. Here the potential influence transportation can have by shaping travel times and destinations, determining travel paths and influencing the types of crimes that occur at a location, can be seen.

Police could benefit from a better understanding of the effects of different types of transportation, such as cars, buses and trains, on the spatial distribution of crime. Further, the reduction of neighborhood permeability may be an effective preventive intervention.

Residual Deterrent Effect

Residual deterrent effect can be described as when the application of police interventions targeted at problems is removed and the problem does not immediately re-surface at the same intensity. If the problem resurfaces it does so after a delay. What this suggests is that police interventions are effective for some period



of time even though they are no longer in place.

For example, a saturation patrol operation is used to target an open-air drug market. When the operation is shut down for the night the street dealers and customers do not suddenly re-appear the minute the police vacate the area. It could take hours to reach the level of dealing that was ongoing prior to the saturation patrol. Take the example of a longer-term operation, like an effective gang reduction program. If the intervention abruptly ends because of funding cessation or some other reason, the level of gang participation does not suddenly spike to pre-intervention levels. It could take months or years for it to reach old levels.

Two important points are suggested in residual deterrent effect. Police operations do not need to be operating on site all the time to be effective. A squad of officers in a directed patrol tactical operation could target several problem areas during a tour of duty to good effect. Rotating from one site to

another, the residual deterrent effect would maintain for some period the beneficial effect of the intervention. The second point is interventions are effective if they are able to progressively extend the time period of the residual deterrent effect. Carried to its logical conclusion, one residual deterrent effect would run into the other, meaning the targeted problem would be eradicated.

Situational Crime Prevention

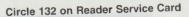
Situation crime prevention centers on reducing opportunities to commit crimes. Situational methods are generally directed to specific forms of crime, involving the management, design or manipulation of the environment in as systematic and permanent way as possible to reduce opportunities. The goals of the design or manipulation are to increase the effort needed to commit the crime, increase the risk of committing the crime, or reducing the reward of committing the crime. This concept is grounded in the rational choice theory,

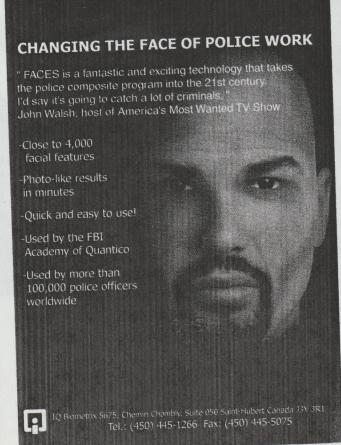
where offenders will weigh the likelihood of being caught with the potential benefits of the crime. Situational crime prevention also relies on the routine activities theory. Routine activities theory relates that offenses occur when a motivated criminal converges on a suitable target when there is a lack of a guardian. An effective method for preventing crime is to increase guardianship as suggested in routine activities theory, which increases the risk of committing the crime as in situational crime prevention.

The application of criminological theory to crime analysis helps to avoid the risk of ignoring important connections to the community-based environment. Crime analysis based on criminological theory offers a systematic approach to analysis that may yield more consistent results with a deeper level of explanation.

Ross E. Swope is the Deputy Director of the United States Mint Police in Washington, DC.







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