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**Understanding criminal co-offending: A historiography of
research literature**

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ABSTRACT

There has been a recent surge in the amount of literature on the topic of criminal co-offending that exists outside of organized crime organizations and gangs. This paper presents how co-offending has been studied or, how approaches to studying co-offending could be studied from various theoretical perspectives. Ideas from routine activities, strain, social learning, differential association and crime pattern theories are presented. A discussion of the importance of understanding co-offending for modern law enforcement agencies is included.

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Introduction

Historically, crime has been an issue of importance and intrigue to the public. In the United States, a growing fear of crime in the early part of the current decade seems pervasive among citizens and contributes to crime being reported as the nation's most serious problem on a reoccurring basis (Levine, 2006; Weerman & Smeenk, 2005). Environmental criminologists argue that patterns of crime exist that would ultimately help crime control agencies better predict and analyze who offenders are and exactly where and when they are committing crimes. Some research has found that most crimes are committed in pairs or in groups, a process known as co-offending (Andresen & Felson, 2010; Felson, 2009; van Mastrigt & Farrington, 2009). In addition to common spatial and temporal patterns, there are patterns within the offending population as well which enable the identification of offenders that offend at a higher rate than others and offenders who co-offend. Further, prolific offenders, and prolific offenders who co-offend, create patterns of high frequency offending (Croisdale, in press).

Numerous studies have revealed that co-offenders commit more crimes than solo offenders (Andresen & Felson, 2010; Carrington, 2009; Felson, 2009; Stolzenberg & D'Allesio 2008; Weerman & Smeenk, 2005). Research also links prolific offending and criminal co-offending to greater levels of violence along with increased risks for recidivism and more prolonged criminal careers (Felson, 2009; Stolzenberg & D'Allesio, 2008) and victimization (Farrell & Pease, 2008). These relationships suggest that individuals who engage in the co-offending process have a heightened risk of becoming more established and serious criminals. Therefore, specific attention to co-offenders can be beneficial in preventing crime, not only by disbanding individual criminals but by diffusing larger criminal organizations as well. Fully understanding the process of co-offending can be a crucial detail in not only understanding and analyzing crime patterns accurately but for crime prevention as well.

Before examining co-offenders in more detail, we need to better understand the process of co-offending. Until recently, co-offending was a phenomenon that had received very little attention from researchers and crime analysts (Levine, 2006; Piquero, Farrington, & Blumstein, 2007). Co-offending, the act of committing crime alongside one or more accomplices has become a well-documented phenomenon. Co-offending can also include larger groups, or networks, cooperating sequentially or simultaneously, knowing each other, or at least knowing about one another. The term “extended co-offending” is often used to include varieties of crime organizations, crime networks, gangs, and criminal clusters. Extended co-offending also includes distantly organized crime repetitions, and can vary accordingly (Andresen & Felson, 2010; Felson, 2009; Piquero et al., 2007). Criminal cooperation can be unlimited in time, space, numbers of persons involved, and types of crimes committed. The extension process has a very wide span of possibilities, which is crucial for law enforcement agencies to understand.

The prevention of co-offending has become a major concern for police and crime control agencies, particularly in the 21st century with the ascension of terrorism worldwide and the problems associated with inner city gangs. The growth of both terrorism and gangs further supports and compounds the problem of the co-offending phenomenon. Since co-offending is most common among early adolescents, it likely exposes them to longer periods of criminal participation and personal harm. If co-offending is itself criminogenic, then reducing co-offending merits extra attention, and more accurate estimates of co-offending certainly have significant policy relevance.

Toward fully understanding why certain individuals choose to commit crimes in groups, this paper will focus on the theoretical perspectives used in research examining the prevalence of crime in assorted neighborhoods, distinguishing factors asserted to determine involvement in criminal activity, criminal careers and the importance of co-offending. First however, the review of literature on the theories used to study co-offending is framed through an examination of the amount of offending in general.

Age-crime curve

Age is a fundamental a construct related to offending and the research findings are commonly termed the age-crime curve. The age-crime curve is characterized by a sharp incline in offending behavior during early adolescence, peaking during the mid to late teenage years and then declining steeply to the mid 20s, and thereafter, more steadily. The view that involvement in crime diminishes with age is one of the oldest and most widely accepted in criminology. Beginning with pioneering research by Adolphe Quetelet in the early nineteenth century, criminological research has consistently confirmed that the proportion of the population involved in crime tends to peak in adolescence or early adulthood and then decline with age (Carrington, 2009; Croisdale, in press; 2007; Haynie, 2002; Solzenberg & D'Alessio, 2008; Warr, 1998). This age-crime relationship has proved steady across historical periods, geographic locations, and crime types.

Since the impact of age on criminal involvement has become one of the strongest factors associated with crime, research has prompted the controversial claim that the age-crime relationship is universal and invariant. However, researchers have identified considerable variations that exist among offenses and across historical periods in specific features of the age-crime relationship, such being, peak age, median age, and rate of decline from peak age (Warr, 1998; Weerman, 2003). Therefore, claiming invariance (albeit slight) in the age-crime relationship overstates the case and obscures crucial statistical data. The existence of the age-crime curve has become one of the least contended issues within criminology. Many researchers have argued that during a long period of change and development, the age-crime curve has remained constant, following a directly similar pattern across time periods, among different populations, and even between genders (Carrington, 2009; Felson, 2009; Haynie, 2002).

Despite broad similarities in the curve's appearance, research shows that the ever-present curve does in fact vary quite extensively in specific terms: the peak may be more or less distinct, the peak age may be higher or lower, the skew may be more to the left or right, and so on. All of these differences have definite significance in terms of interpretation of data and the calculation of crime statistics. The age-crime curve is typically presented as a count of the total

number of crimes committed within a specific time period. However, it is often presented in terms of prevalence of offending, for example as a count of the number of people within the population who have committed crimes (Carrington, 2009; Haynie, 2002; Weerman, 2003). When compared, the shape of these two curves tends to be broadly similar.

There has been ongoing debate about whether the prevalence of offenders or the incidence of individual offending that most readily explains the age-crime curve (Haynie, 2002; Warr, 1998). The debate focuses on whether the age-crime curve depicts the total number of offences committed accounted for by the known increase in prevalence of offenders, or if an increased frequency of offending among offenders is responsible for the materialization in the crime data.

Gottfredson and Hirshi (1986) argued that there is no point in studying an individual's frequency of offending because crime when compared with age is fixed regardless of time and place and follows a unimodal curve invariantly. However, in their review of data from the Glueck's longitudinal Boston cohort, Blumstein, Cohen, and Farrington (1988) found contradicting evidence. In their study, they discovered that the number of arrests per person remained constant over time, whereas the total number of arrests fell. From this study, Blumstein et al concluded that the reduction in the number of arrests was due to a decrease in the incidence of offenders but there was no reduction in frequency among the active offenders.

Existing evidence suggests that the age-crime curve largely reflects changes in prevalence of offending rather than frequency. The sharp rise in crime rates in the teenage years therefore, must be due to an increase in new recruits rather than an increasing production of offending among existing offenders. However, research indicates that this may be true for some offenders more than others.

An important factor to consider when analyzing the data on age and crime is that a majority of the data used as a foundation for this debate are from official sources rather than self-reported offending (Carrington, 2009; Piquero, et al., 2007). Many researchers have argued that the rate of offending varies greatly depending on types of crimes and offenders and that this is characteristic of the enormous variety in individual criminal behavior over an offender's life span.

Although the debate persists, it is clear that much more evidence needs to be collected from self-report studies on the frequency of offending and its relative importance in understanding patterns of crime. Nonetheless, the age-crime curve provides an excellent illustration of offending in general.

Routine activities theory

In the 1970s, most criminological research focused on the motivations and characteristics of offenders. In contrast, Cohen and Felson (1979) investigated the characteristics of the criminal event rather than the characteristics of the offender. They did not intend to examine why individuals or groups are inclined criminally, but rather took criminal motivation as a given in their examination of how the placement of individuals, when performing their normal activities, helps people to translate their criminal inclinations into action (Lu, Liu, & Crowther, 2006; Pridemore, 2007; Spano & Freilich, 2009). Since their theory focused on individuals and their lifestyles, Cohen and Felson's theory was of crime, not criminality.

Cohen and Felson (1979) argued that studies using social disorganization theory did not explain how changes in social structure generate changes in opportunity for the criminal to commit crime. Therefore, integrating social disorganization theory into an individual opportunity based perspective such as routine activities theory was necessary to apply their theory to the wider society. In a larger scale, their approach ties social changes to crime rates. More specifically however, they hypothesize that the shift in routine activities away from the home was the source of the crime rise experienced during the 1960s. Since Cohen and Felson's groundbreaking work, researchers have identified the role of an individuals' routine activities as facilitating or hindering the convergence of offenders, targets, and capable guardians at the same time and in the same place (Spano & Freilich, 2009).

According to Cohen and Felson, for a direct contact predatory crime to occur three elements must converge at a particular time and place. First, there must exist a motivated offender with both criminal inclinations and the ability to carry out those inclinations. Second, there must exist a suitable target. Third, capable guardians who can protect an individual against a violation either overtly or not

must be absent. If one of these components is missing, then a crime will not likely occur. Routine patterns of behavior affect the convergence of these three elements. Routine activities are defined as recurrent and prevalent activities, which fulfill an individual's physical, emotional, or social needs, whether they be biological or cultural in origin. Routine activities occur in the home, at work, and at other places outside the home where individuals frequently attend. The frequency of their convergence is also dictated by certain ecological factors such as the timing with which events occur and the placement of an offender in relation to the placement of the victim.

General strain theory

One of the most influential theories of delinquency is Robert Agnew's general strain theory. General strain theory offers three specific predictions about the causes of juvenile delinquency. Agnew states that juvenile delinquency results when an individual is prevented from attaining positive goals, when positive goals are removed or threatened to be removed, and when youth are exposed to negative stimuli (Baron, 2009; Hay & Evans, 2006; Hollist, Hughes, & Schaible, 2009; Schoepfer & Piquero, 2009). Agnew's general strain theory focuses on the consequences that victimization takes on the social and emotional health of adolescents. Consequences of strain can take many forms, including psychological distress, poor school performance, depression and anxiety, or withdrawing from relationships. Another potential consequence of being a victim of a crime involves the possibility that victimization increases one's later involvement in delinquency. General strain theory argues that strainful circumstances pressure individuals into committing delinquent acts (Casten & Payne, 2008; Hay & Evans, 2006; Manasse & Ganem, 2009).

Agnew argues that victimization should be important because it will often be perceived as undeserved and distressing, and therefore will evoke negative emotions like anger or resentment. These emotions, in turn, increase the chances that an individual will resort to crime or deviance in an attempt to cope with their strain. Some individuals might choose substance abuse to relieve their stress while others may resort to criminal acts meant to soothe their feelings of anger and frustration (Baron, 2009; Casten & Payne, 2008).

Many previous studies of strain concluded that stress was a result of an individuals' inability to achieve economic or status success. However, general strain theory argued that strain comes from many sources, not just from the limited list researchers had earlier theorized. General strain theory sees strain as resulting from any relationship or event in which the individual is not treated as he or she would like or an event in which the individual experiences undesired outcomes. These ideal types of strain increase the likelihood that individuals will experience negative emotions, the most important of which for delinquency is anger (Baron, 2009; Dobrin, Lee, & Price, 2005; Hay & Evans, 2006). Anger increases the chances of delinquency by increasing the level of assumed injury, creating a desire for retribution, stimulating the individual to seek vengeance, and lowering inhibitions.

Individuals will choose delinquency only when it is favorable to their social and emotional norms. Agnew identified a number of variables that influence the use of delinquent adaptations, including such things as individual coping resources, access to conventional social support, and the disposition to delinquency. Individuals who have lower levels of self-control, less attachment to parents or teachers, and are less involved in their education and future will be more inclined to choose delinquency. Three important generalizations from tests of general strain theory can be made. First, there appears to exist a significant, positive relationship between strain and delinquency. In most tests, strain is defined in terms of negative life events (including such things as divorce, criminal victimization, and death of a close friend), negative relationships with others, or exposure to some other undesirable environment or situation (Hay & Evans, 2006; Hollist et al., 2009).

A second generalization is that anger is a strong precursor to delinquent adaptations. Agnew found that roughly half of strain's effect on serious delinquency was caused by anger. A third generalization is less supportive of general strain theory; many studies found that the effects of strain were not supported by factors previously argued to influence the use of delinquent adaptations (Schoepfer & Piquero, 2009). This included such things as social control, delinquent peers, moral beliefs, and the individual's social support network. There were, however, important and recent exceptions to this pattern.

Agnew, for example, found that abusive peer relations increased crime only for those with personality characteristics, such as impulsivity, that are conducive to delinquency. Agnew argued that the theory must be more specific about which strains should be most consequential as to understand why some adolescents choose delinquency (Baron, 2009; Hay & Evans, 2006).

Agnew identified four conditions that characterize strains that have the highest likelihood of leading to delinquency. First, strains are perceived as unjust, rather than as merely a matter of misfortune. Second, they are perceived as high in importance because exposure to the strain may be extreme or it may associate with leading concerns of the individual. Third, significant strains are associated with low rather than high standard social controls. Fourth, major strains are those that create some incentive to engage in criminal behavior, either because they encourage retaliation or stem from relationships with others who encourage involvement in crime (Baron, 2009; Casten & Payne, 2008). Using these criteria, Agnew identified ten strains that should be most consequential for crime, including such things as child abuse and neglect, negative experiences at school, peer abuse, and experience with discrimination based on easily recognized characteristics like race and ethnicity.

Social learning theory

Social Learning Theory, credited to Albert Bandura and Julian Rotter, explored the idea that people learn from one another in various ways, including such concepts as observational learning, imitation, and modeling. Bandura believed that aggression was a learned trait and was realized through a process called behavior modeling (Haynie, 2002; McGloin, Sullivan, Piquero, & Bacon, 2008; Warr, 1998). He believed that individuals did not actually inherit violent tendencies, but they modeled them after three principles. Bandura argued that individuals, especially children learn aggressive responses from observing others, either personally or through media outlets and their environments. He stated that many individuals believe that aggression will produce reinforcements and these reinforcements in turn, can formulate into the reduction of tension, the gaining of financial rewards or praise from others, and the building of self-esteem (Brauer, 2009; Haynie, 2002).

Albert Bandura believed that aggression reinforced by family members was the most prominent source of behavior modeling. He reported that children use the same aggressive tactics that their parents demonstrate when dealing with others. In order to control aggression, Bandura believed that the problem should be diagnosed and treated during one's childhood to avoid future transgressions (Haynie, 2002; McGloin et al., 2008; Weerman & Smeenk, 2005). Bandura believed that children learned to act aggressively when they modeled their behavior after violent acts of adults, especially when those adults were family members. For example, a boy who witnesses his father repeatedly strike his mother will be more likely to become an abusive parent and husband than a child who does not have an abusive father.

Albert Bandura is best known for his Bobo doll experiment, which established the concept of behavior modelling. Bandura believed that aggression must explain three questions: first, how aggressive patterns of behavior are developed; second, what provokes people to behave aggressively, and third, what determines whether they are going to continue to resort to an aggressive behavior pattern on future occasions (Brauer, 2009; Warr, 1998). In the Bobo doll experiment, Bandura had children witness a model aggressively attacking a plastic clown called the Bobo doll. Children would watch a video where an adult model would aggressively beat a doll. After the video, the children were placed in a room with alluring toys, but they were restrained from touching them. The children became frustrated and angry at which time the children were lead to another room where the Bobo doll was located. Bandura and many other researchers found that even after months, children still imitated and reproduced the aggressive behavior observed in the Bobo doll experiment (Brauer, 2009; Warr, 1998; Weerman & Smeenk, 2005).

Observational learning is also known as imitation or modeling. In this process, learning occurs when individuals observe and imitate others behaviors. There are four component processes influenced by the observer's behavior following exposure to the models. These components include attention, retention, motor reproduction, and motivation. Attention is the first component of observational learning (Haynie, 2002; Warr, 1998; Weerman & Smeenk, 2005). Individuals will not learn a great deal from observation unless they perceive and focus on the significant features of the modeled behavior. In the Bobo doll experiment, the

children witnessed the doll being verbally and physically abused by both live and filmed models.

Retention is the second component of observational learning. In order to reproduce the modelled behavior, the individuals must code the information into long-term memory. Therefore, the information can be retrieved and used in the future. Memory is an important cognitive process that helps the observer code and retrieve information. In the Bobo doll experiment, the children imitated the aggression they had witnessed earlier. They aggressively hit the Bobo doll because it was coded and stored in their memory to do so when they came into contact with the doll. Motor reproduction is the third process in observational learning. The observer must be able to reproduce the model's behavior. Once a behavior is learned through attention and retention, the observer must possess the physical capability to reproduce the aggressive actions. In the Bobo doll experiment, the children reproduced the physical aggression by hitting and kicking the doll. The final process in observational learning is motivation or reinforcement. In this process, the observer expects to receive positive reinforcements for the modeled behavior (Haynie, 2002; McGloin, et al., 2008; Warr, 1998). In the Bobo doll experiment, the children witnessed the adults being rewarded for their aggression. Therefore, they recreated the acts in order to achieve the same rewards.

Environmental experiences are a second influence of the social learning of violence in children. Bandura reported that individuals that live in high crime areas are more likely to act violently than those who reside in low crime areas (Brauer, 2009; Warr, 1998). This assumption coincides with Shaw and McKay's theory of social disorganization, which states that neighborhoods surrounded by culture conflict, decay, and insufficient social organizations was a major cause of criminality.

Today, many theorists have revised Bandura's Social Learning Theory, expanding its boundaries and attempting to explain how and why crime is learned. Bandura's theory has significant implications for both the media and the entertainment industry, suggesting that renditions of violence throughout media outlets have major effects on children and juvenile development as well as social interactions. There have been many debates as to whether violence on television causes

aggressive behavior in children and this continues to be a controversial topic in society today.

Differential association

Developed by Edwin Sutherland in 1939, differential association and was his major sociological contribution to criminological theory. The theory became similar in importance to strain theory and social control theory, in that all attempt to explain deviance in terms of an individual's social relationships. Sutherland's theory departs from the pathological and biological perspectives by attributing the cause of crime to the social context of individuals (McCarthy, 1996; Piquero, et al., 2007; Warr, 2005).

The principle of differential association asserts that through interactions with others, individuals learn the values, attitudes, techniques, and motives for criminal behavior (Carrington, 2009; Piquero, et al., 2007). This theory focuses on how individuals learn to become criminals, but does not concern itself with why they choose criminal paths. They learn how to commit criminal acts; they learn motives, drives, rationalizations, and attitudes. As the individual acclimates, it becomes socially easier for them to commit crimes. The offender becomes inspired through the processes of cultural transmission and construction (McCarthy, 1996; Warr, 2005). Sutherland developed the idea of the "self" as a social construct, which is continuously being reconstructed especially when interacting socially with others who hold a great influence over that image.

Sutherland argued that the concept of differential association and differential social organization could be applied to both the individual level and to the group level respectively. While differential association theory explains why an individual gravitates toward criminal behavior, differential social organization explains why crime rates of different social entities differ in time and space (Carrington, 2009; Warr, 2005; Weerman & Smeenk, 2005). Differential association predicts that an individual will choose the criminal path when the balance of definitions for law breaking exceeds those for law-abiding (McCarthy, 1996; Warr, 2005). This tendency will be reinforced through social associations and active individuals in the offender's life.

To outline his theory, Sutherland utilized a series of propositions. The first proposition affirms that criminal behavior is learned and neither inherited nor invented by people on their own. The second proposition holds that criminal behavior is learned through interactions with persons in a process of communication, both verbal and bodily communication. The third proposition states that the central part of learning criminal behavior occurs within intimate personal groups; media interpretations of crime and criminal behavior play inconsequential roles in the genesis of criminal behavior. The fourth proposition maintains that when criminal behavior is learned, the learning includes both techniques of communicating the crime, which can often be very complicated, and the specific direction of motives, drives, rationalization, and attitudes (Piquero et al., 2007; Warr, 2005; Weerman & Smeenk, 2005).

Sutherland's fifth proposition states that the specific direction of motives and drives is learned from definitions of the legal codes as both favorable and unfavorable. An individual is exposed to persons that define the legal codes as rules to be observed and to other people that are encouraging to the violation of legal codes, which sends mixed messages. The sixth proposition maintains that a person becomes delinquent because of an excess of definitions favorable to violation of law over definitions unfavorable to the violation of law (Piquero et al., 2007; Weerman & Smeenk, 2005; Warr, 2005). In this sense, crime is a product of counteracting forces. Thus, a person might be isolated from anti-crime attitudes and exposed to pro-crime mentalities. In addition, social class, race, and family status influence involvement in criminal activities because they affect the likelihood that individuals will associate with others who present definitions favorable to crime.

The seventh proposition states that differential associations may vary in frequency, duration, priority, and intensity. The eighth proposition affirms that learning criminal behavior happens through associations with criminal patterns and is learned just like anything else. The ninth and final proposition states that while criminal behavior is an expression of general needs and values, it is not explained by those needs and values since the non-criminal behavior is an expression of the same needs and values (Piquero et al., 2007; Warr, 2005; Weerman & Smeenk, 2005).

Although Sutherland's theory was probably one of the most popular criminological theories of the twentieth century, many researchers have attempted to modify or build on Sutherland's original ideas. Differential association has influenced many other social learning theories and scholars continue trying to empirically test the usefulness and validity of Sutherland's concept. Through these efforts, Sutherland's theory is still being modified and developed to explain offender behavior and deviance.

Crime pattern theory

In 1984, Brantingham and Brantingham first present their theory on crime patterns; crime is not random but rather, is highly patterned. Since, crime pattern theory has been used to propose and test hypotheses leading to the study of crime patterns from a variety of pattern-searching approaches such as from geographical (spatial) and temporal aspects. The tenets of crime pattern theory coupled with the perspectives of other theories and ideas that influenced the formulation and development of crime pattern theory, another relationship of patterns is revealed that suggests there is much to be learned about patterns of high frequency offending and of co-offending. Examination of co-offending furthers understanding of patterns since co-offenders not only offend individually, many are also high-frequency, persistent offenders who contribute significantly to the overall spatial and temporal patterns of offending.

To better understand co-offending, and the spatial and temporal crime patterns they produce, researchers must better understand that population of offenders responsible for most of the offending. Thus, one must consider the variety of offending exhibited by the busiest offenders. We must also keep in mind that while studying offender patterns developed through frequency of offending, that opportunities, motivations, activity spaces, and crime templates affect offending to create dynamic offending patterns (Brantingham & Brantingham, 2008). Examining co-offending from a crime pattern perspective does not move us away from the traditional analysis of place, or from spatial and/or temporal analysis but rather, focuses those and other types of analyses on a population of offenders who co-offend (see Croisdale, in press; 2009, 2010). The number of examinations of

co-offending from a crime pattern perspective has increased over the past couple of years and we should see those and future studies in upcoming publications.

Conclusion

A significant amount of research has been conducted in the area of criminal behavior and the causes of crime in specific neighborhoods. Numerous studies have focused on the distinguishing factors that determine delinquent behavior and the traits that are conducive to criminality. Recognizing the need to focus on offenders of crimes and more specifically co-offenders, has allowed police and individual communities to alter policies to better address the ever changing needs of problem neighborhoods. This aim fits well with environmental criminology theories such as routine activities and crime pattern theory in which there is a focus on elements of the criminal event rather than on the offender.

Research in the area of offending and more specifically crime mapping has been crucial to understanding co-offenders and patterns of crime which can then be used to reduce crime. One focus of co-offending has centered on identifying and measuring the frequency of various types of crimes that co-offenders tend to commit, such as burglaries and robberies. Other research has focused on why co-offenders commit more crimes than solo offenders and why this phenomenon seems to vary dramatically depending on age, gender, and social class.

The importance of accurate measurements has long been a problem in research fields, including criminology. Crime data have so many sources of systematic error that crime researchers often settle for simply deducing whether an effect is large or small, ignoring the details that would expel the most information and be most beneficial to crime statistics and data analysts. Precise measurements may seem unrealistic for most researchers when so many crime details remain unknown to police and many variables could influence the measurement processes.

Criminologists often supplement police statistics with alternative types of data, such as victim surveys and offender self-reports. These data sources serve to round out our knowledge on the subject yet, alternative data sources are problematic in their own ways and often produce new and competing estimates on the constraints of crime. New data sources outside the United States have

expanded greatly in recent years and some have allowed for great progress on understanding co-offending and extended co-offending.

Modern law enforcement has a strong technology component including forensic sciences, offender profiling, and crime and intelligence analysis. Ultimately, understanding patterns of co-offending and determining or, developing, and maintaining accurate crime statistics will be necessary for effective and efficient crime control. With police efforts focused on prolific offenders, co-offending, and neighborhoods where co-offending is most prevalent, crime prevention efforts can be geared to stop groups of co-offenders who are committing crimes instead of focusing on single offenders as is common in traditional policing models. Historically, agencies have not shared data. Law enforcement agencies can contribute to crime reduction efforts by developing partnerships with researchers and allowing access or, providing data for analysis and research. Administrators of law enforcement agencies should be encouraged to abandon long-held apprehensions of sharing data (which ultimately become obtainable at some level by researchers examining arrest records). Apprehensions seem to be born from the fear that the data will reveal information which could put the police in a poor light. These apprehensions must be transformed into a desire for data to be used to inform and provide information and intelligence – hence the term, intelligence-led policing. The justice system as a whole can contribute to crime reduction and prevention efforts by directing effective measures and policies at the problem of prolific offending and co-offending.

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