The Importance of Studying Co-Offending Networks for Criminological Theory and Policy

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ABSTRACT

Though the group nature of much crime and delinquency has been well documented for decades, there is relatively scant research on co-offending networks. This paper highlights the compelling and unfortunate nature of this void, arguing that it hampers the development and assessment of theory and policy, as well as stunts basic knowledge about criminal behavior and processes. More specifically, this paper argues that attending to the ways in which co-offending networks shape and affect criminal behavior, as well as how individual and situational attributes shape the tendency to join such networks and adopt certain roles within them, has broad and important implications for criminology and criminal justice. In making this argument, the paper highlights recent empirical examples and lays out specific directions for additional research on this form of illicit criminal networks.

For nearly a century, criminologists have been well acquainted with the group nature of crime. In the early part of the 20th century, Shaw and McKay (1931) observed that the vast majority (approximately 80%) of juveniles who were seen in the Cook County Juvenile court were suspected of committing crimes with accomplices; similar findings have consistently emerged in the decades since with regard to both official records and self-reports, as well as across a wide range of locations (e.g. Carrington, 2003; Sarnecki, 2001;,Warr, 2002; c.f. Stolzenberg and D'Allesio, 2008). Indeed, Breckenridge and Abbott's (1917) observation that a delinquent who offends alone is a rarity can, at this point, rightly be called a criminological "fact" (McGloin et al., 2008).

It is not surprising then that several core criminological theories either directly root etiological processes in social networks or, at the very least, integrate them into explanations of crime (Akers, 1998; Cloward and Ohlin 1960; Cohen 1955; Shaw and McKay 1942; Short and Strodtbeck 1965; Sutherland 1947). Even though so many of our seminal theories use the group nature of crime to buttress their propositions, however, there is minimal research on co-offending patterns, processes, precursors and consequences. Such a gap leaves answers to even basic questions about why individuals co-offend and the impact that such group behavior can have on the criminal career under developed theoretically and in need of empirical guidance. Furthermore, despite some evidence that accomplice networks can be used as a means of social control to reduce crime (Kennedy, 2009) and can enhance prosecutorial strategies (see Natarajan, 2000), policy makers rarely integrate the tendency to offend with accomplices as part of interventions aimed at preventing, ceasing, or punishing criminal activity (Kennedy, 2009).

Perhaps, in part, this void is the result of viewing co-offending simply as a characteristic of the criminal event or as evidence of the power of criminogenic social influence, rather than as holding any unique meaning in and of itself. In recent years, however, researchers have made significant strides in narrowing this empirical gap and, as a consequence, have demonstrated that co-offending is a worthy and important domain of criminological inquiry. There are clear indications that group crime can alter and change offending pathways and that understanding the patterns and processes of co-offending can provide important guidance for law enforcement interventions. For example, Conway and McCord (2002) suggest that co-offending increases the likelihood of persistent criminality, especially when coupled with early onset. On the policy side, Piquero and Blumstein (2007) argue it is important to understand co-offending dynamics because on one hand, imprisoning one co-offender may not have an effect on the actual crime rate if his/her accomplices continue to offend. On the other hand, imprisoning one co-offender may have a strong deterrent effect for the others, thereby significantly impacting the number of crimes saved.

A significant portion of the insight gained from this research has benefited from the expanding and deepening parallel literature on criminal networks. Over the previous two decades, there has been a marked growth in discussions and empirical investigations about criminal networks, as scholars embraced the fact criminal enterprises in general were better described as dynamic networks than as stable, centralized, hierarchical structures (Bunker and Sullivan, 2001; Clarke and Brown, 2003; Coles, 2001; Eck and Gersh, 2000). As a result, there are numerous examples of several scholars translating concepts and methods from the social network analysis tradition to bear on street gangs,

organized crime, and other criminogenic networks (e.g., McGloin, 2005; Morselli, 2009; Natarajan, 2006; Papachristos, 2006). Indeed, Morselli's (2009; see also Morselli, 2005) recent book, "Inside Criminal Networks", not only offers original analysis that sheds insight on various criminal organizations, but also makes a persuasive case that the integration of network perspectives into criminological research is not simply "fashionable", but benefits theory and offers important guidance for law enforcement.

Though some may view co-offending networks as significantly less complex (or even less compelling) than more traditional criminal networks (see Morselli, 2009), a strong case can be made for viewing co-offending connections as a specific and important form of the criminal network (c.f., Felson, 2003). As Waring (2002: 43) declared, "the treatment of co-offending as a network phenomenon is particularly powerful because it has the potential to contribute both to the incorporation of co-offending into models of other aspects of crime and to the location of social organization of crime within the broader range of forms of social organization. Even before Waring's conceptual argument, several scholars in Sweden and the Netherlands were using network analysis to study co-offending relationships, offering novel insight for the field. For instance, Sarnecki (1990, 2001) gathered data on individuals aged 20 and younger who were suspected of crime during particular time frames in Sweden (1975-1977, 1991-1995). From these official data, he used information on accomplice ties to create numerous sociograms, which illustrated that even seemingly unconnected crimes could often be tied together in larger offending networks (see also Hakkert, 1998; Pettersson, 2003).

This paper argues that it is important to firmly place group crime in the larger

research agenda on criminal networks and to build on the recent interest and growth in co-offending research. In furthering this argument, we will provide evidence that researching group crime will pay dividends for theory and policy, as well as further general knowledge about offending pathways and processes. Furthermore, we argue that attempts to reduce group crime are important for law enforcement officials and interventions. In the sections to follow, we will first illustrate the importance of investigating group crime. Second, we discuss the applicability of network structure in the investigation of co-offending networks. Third, we examine the salience of particular roles that individuals play within criminal and co-offending networks. Finally, we offer some avenues of future research.

Why Should We Care About Group Crime?

Although the bulk of research on the detrimental influence of criminogenic groups focuses on deviant peers and street gangs, co-offending networks can also impact criminal careers in meaningful ways. These networks are defined by instances of collective action, rather than others forms of social ties, but group crime nonetheless has the ability to further embed individuals in criminal lifestyles, as well as expand and deepen offending repertoires (Andresen and Felson, 2011). This process can happen through several, often complementary, routes. Group crime provides an opportunity for individuals to learn deviant behavior and attitudes, as well as the ability to recognize a wider range of criminal opportunities. As McAndrew (2000) argues, co-offending connections "can lead to sharing new methods of committing crime, identification of potential targets, information about police activities and opportunities to be part of specific criminal enterprises" (p. 53). In this way, both the criminal repertoire and

awareness space can expand (see also Hochstetler, 2001; Mullins and Wright, 2003). Thus, a theoretical case can be made that reducing instances of group crime can limit the extent to which offenders become committed to and embedded in criminal lifestyles.

On some occasions, this learning occurs in the context of a mentorship relationship, which ties nicely with Sutherland's (1947) discussion of tutelage. Several seminal pieces in criminology call attention to the importance of learning from criminal mentors (e.g., Cloward and Ohlin, 1960), though Sutherland is often credited for calling specific attention to this unique and salient relationship within criminal networks. In his work on professional thieves, he observed "any man who hits the big-time in crime, somewhere or other along the road, became associated with a big-timer who picked him up and educated him" (Sutherland, 1937: 23). In short, Sutherland argued that some offenders–notably the "successful" ones–benefitted from the tutelage of more experienced and established offenders, from whom they typically learned while "on the job", that is while engaged in criminal action together.

There are several examples of the mentorship process in qualitative, narrative work (for a more detailed review, see Morselli et al., 2006). Perhaps the best-known is Shaw's narrative of the delinquent Sidney, whose criminal history has been used frequently to call attention to the importance of co-offending (Shaw, 1931). In discussing his illegal enterprises, Sidney often spoke of learning from older, better-established criminals in his neighborhood. For instance, he spoke of one boy in the following way: "I would walk behind him and as soon as he would pick up a piece of fruit I was supposed to do likewise. It took lots of practice and he had to set many examples before I could at last gain enough courage to follow suit" (Shaw, 1931: 58).

McCarthy and Hagan (1995) hypothesized that being embedded in criminal/deviant networks facilitate the establishment of important tutelage relationships. They tested this hypothesis with models of prostitution, theft and drug selling among a sample of homeless youth and find that exposure to tutelage relationships enhance the frequency of offending. McCarthy and Hagan suggest that tutelage relationships further embed individuals in criminogenic lifestyles because they enhance criminal skills and attitudes, assets they call "criminal capital".

Morselli et al. (2006) recently renewed interest in mentorship by extending the discussion in important ways though the integration of criminal capital. Social capital, or resources gained from social relationships, is associated with achievement in the legitimate market and individuals with mentors typically have access to additional social networks, which allows them to build and cultivate greater levels of social capital. In this way, mentorship not only can lead to direct tutelage, but can also support success indirectly through social networks. Morselli et al. (2006: 19-20) translated these concepts to the illicit sphere, arguing "the impact of mentors on achievement may be particularly salient for criminal careers relative to conventional ones. Most offenders earn little money from their crimes...[and] there are no schools for crime…The inherent secrecy of crime and consistent threat of arrest means that offenders are often outsiders to one another… Mentorship addresses the need for security that strong ties offer, while opening doors to the more efficient extensions that emerge from weak ties. In this sense, the criminal mentor is an asset." Perhaps not surprisingly, when relying on data from over 250 inmates housed in Quebec prisons, Morselli et al. (2006) found that having criminal mentors was associated with greater criminal success, as defined by criminal earnings.

Of course, this mentorship process speaks to a particular sort of co-offending relationship–one that is more stable than the modal connection observed in empirical research. To be clear, the notion and process of mentorship assumes some kind of enduring connection, certainly past the typical duration of most accomplice relationships. As Warr (1996: 33) noted, "delinquent groups are short-lived groups, so short-lived that it may make little sense to even speak of delinquent groups at all" [emphasis in original], and that, "if groups are defined by the unique combination of individuals that comprise them, the modal life expectancy of offending groups is one event" (p. 23). Of course, Warr's point speaks to the duration of the group as a whole, but even work focusing on single relationships echoes the theme of transience.

Based on official crime data in Sweden, Sarnecki (2001) found that most co-offending relationships last a single event. Furthermore, when focusing on offenders in the Cambridge data set with at least 10 crime convictions, Reiss and Farrington (1991) found that only 43 out of the 205 identified co-offenders were used more than once (see also Sarnecki, 2001). More recently, McGloin and colleagues developed a measure of co-offender stability, which ranged from 0 to 1, with 0 indicating no stability of co-offenders and 1 indicating that the same co-offenders were used for all instances of group crime. This measure provided an overall sense of the extent to which individuals tended to use the same people in their accomplice network over criminal events. Out of the 218 juvenile offenders in their sample who committed at least two group offenses, 128 had a co-offending stability value of 0, indicating that they did not "re-use" a single accomplice across co-offending incidents (this stands in contrast to the 5 subjects who showed complete stability of co-offenders).

In light of such "instability" then, should we *only* be concerned about the ability of group crime to embed and expand individual's offending repertoires in the (relatively) rare situations of mentorship or longer-lasting networks? Unfortunately, the answer is no. Studies have demonstrated that even the typical fleeting and swift co-offending connections are related to more "risky" or serious offending profiles. For instance, returning to the data that informed McGloin et al.'s (2008) co-offender stability findings, Conway and McCord (2002) found that when individuals who had no official record of violent crime offended with accomplices who have a history of violent behavior, they were significantly more likely to "switch" towards violence.

<u>The importance of network structure</u>

At the start of this paper, the argument was offered that attending to the network structure of co-offending groups lends important insight. Mentor relationships and the offending history of the accomplices to whom subjects are linked can certainly fit within a network view, but there is compelling evidence that more traditional network characteristics can also lend insight. Though the research on co-offending remains a minimal part of that on criminal networks at large – and is an even smaller part of the literature on peer influence – this small literature nonetheless has made strides in recent years by thinking about the role of network structure.

For example, perhaps the most basic network attribute is size. Research has established that most accomplice networks are small, typically dyads, but there is significant variation in the number of people who partake in group offenses. Most work that discusses the size of co-offending networks is simply descriptive (Andreson, Felson and Frank, 2008; Hakkert, 1998; Suzuki et al., 1994; Reiss, 1988), but a recent piece by

McGloin and Piquero (2009) agued the size of the accomplice network may have criminogenic importance, by embedding it in the literature on collective behavior. Granovetter (1978) argued that some people need minimal situational inducements to engage in deviant behavior (in his discussion, rioting); other people, however, have a much higher threshold and need substantial situational pressures, opportunities, or inducements to partake in deviant behavior. The presence of others who are willing to engage in deviance – that is, the opportunity to be part of collective behavior – can serve as substantial motivation (Granovetter, 1978). Thus, individuals who, under typical conditions, are not prone toward engaging in deviant behavior may be swayed to engage in deviance when in the company of others – and this likelihood increases as the size of the accomplice network grows.

By integrating Granovetter's (1978) work with other literature on how groups can impact social behavior, McGloin and Piquero (2009) offered the hypothesis that in a large accomplice network, it is easier to feel anonymous and diffuse responsibility, or to "deindividuate", which can reduce the associated risk of engaging in deviance. Furthermore, the associated cost of *not* engaging in the collective deviance can increase, as fears about nonconformity with the social group rise. They also argued that this connection between the network size and crime would resonate strongly with regard to violence. Using data from juvenile offenders in Philadelphia, McGloin and Piquero (2009: 336) found that: "the odds of an individual's first group offence being violent increases for every additional accomplice present during the event, independent of whether these co-offenders had a history of prior violence." In this way, even something as simple as network size can be (one of) the deciding factors as to whether a person

engages in crime or not. [1]

Though the bulk of (minimal work) that speaks to the properties of accomplice networks tends to focus on the stability of the ties and the size of the network, scholars have recently made the case that relatively more complicated structural attributes also hold insight on various outcomes that can further embed and attach individuals to a criminal lifestyle. To be clear, personal co-offending networks vary markedly across offenders, not just in terms of their size but also with regard to the pattern and quality of the links. Though networks some are quite simple – perhaps a single dyad or triad – others are quite complex and reflect an impressive culmination of co-offending relationships. For instance, consider Figure 1, which provides sociograms for three juvenile offenders who were criminally active in Philadelphia at some point during the late 1970s to the early 1990s (for additional insight on the co-offending networks for the full sample, see McGloin and Piquero, 2010).

-- Insert Figure 1 Here --

In these graphs, links are based on shared criminal events (i.e., group crime) during the offenders' juvenile years (i.e., up to age 18). Because the original researchers also reviewed the criminal records of the subjects' accomplices (see McCord, 2004), the network also accounts for any co-offending relationships among the accomplices in

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[1] From such arguments, one might assume that co-offending networks have little impact on the pathways of chronic offenders given that they do not need the presence of others to provide sufficient criminal motivation (Moffitt, 1993). But, this does not mean that serious chronic offenders do not also derive some benefit from co-offending. Offending with others can make crime easier, by requiring less effort through the division of labor, by using others for their own gain, or by bringing more awareness of criminal opportunities to the table. In short, co-offending oftentimes can be a beneficial instrumental decision (McCarty et al., 1998; Wright and Decker, 1994). In support of this premise, McGloin and Stickle (2011) recently documented in the Racine cohort data that chronic offenders were less likely than their non-chronic offender counterparts to say that they engaged in offending because of peers, yet they were just as likely to offend with accomplices (i.e., group crime accounted for similar proportions of their offending histories).

which the subject (or "ego") was not present. In this way, these co-offending networks are ego-centric, with a radius of one. Figure 1a is quite simple – reflecting a juvenile who committed 5 co-offenses, each with a single, different accomplice. Figure 1b reflects a somewhat more complicated network structure, portraying a delinquent who committed a co-offense with one accomplice, and also engaged in a group crime with 5 different co-offenders. Finally, Figure 1c reflects a delinquent who, like the subject in Figure 1a, engaged in 5 incidents of group crime. Four of these criminal events involved two accomplices – one of whom was present as a co-offender for two crimes – and one event involved 14 other accomplices. In light of these varied criminal network structures, perhaps it is not surprising that integrating social network concepts into co-offending investigations has proven beneficial. In particular, a handful of scholars have translated the concept of "network redundancy" to the criminal sphere, leading to significant intellectual gain.

Redundant social networks are those in which most nodes are directly linked to each other – in other words, they are dense networks (Wasserman and Faust, 1991). Stemming from Granovetter's (1973) discussion of weak ties and building on Burt's (1992) work on structural holes, scholars have argued that networks with many redundant ties limit an actor's exposure to new information and opportunities. In contrast, individuals who are embedded in less redundant networks have greater returns because they are exposed to different populations, knowledge, skills and opportunities (see also Davern and Hachen 2006; Lin 1982, 1990; Podolny and Baron 1997). In this way, non-redundant networks are often tied to economic and occupational success.

Though some scholars have suggested that redundant criminal networks are

problematic because they reduce the likelihood of prosocial influence and limit information and exposure almost exclusively to criminal influence (Haynie, 2001; see also Krohn, 1986), others have observed that non-redundant criminal networks can facilitate other problematic criminal outcomes. For instance, Morselli and Tremblay (2004) found that offenders whose co-offending networks were less redundant tended to have greater criminal earnings than their counterparts who reported relatively more redundant accomplice networks.[2] Morselli and Tremblay's work in this area not only provided insight into an outcome that can further embed someone to the illegitimate market, as crime is more attractive and rewarding, but it also demonstrated the potential utility of social network concepts for understanding and studying co-offending.

More recently, McGloin and Piquero (2010) connected non-redundant accomplice networks to another potentially problematic outcome among juvenile offenders: offending versatility. Scholars suggest that youth who engage in a wide range of criminal activity are at added risk for serious and persistent offending later in life, perhaps because they are acquiring a generalized proclivity for offending, rather than a preference for a particular type of deviance (McGloin and Piquero, 2010; see also Loeber, 1988; Loeber and Schmaling, 1985). McGloin and Piquero (2010: 67) argued, "individuals with non-redundant co-offending networks arguably have access to an array of criminal norms, skills and knowledge, models of behavior, and opportunities, which may translate into a versatile offending profile." To some extent, this view already had empirical backing stemming from Shaw's (1931) aforementioned narrative of the delinquent Sidney. Sidney transitioned through several different accomplice and deviant peer networks

[2] Please note that this research employed Tremblay's (1993) broad definition of co-offenders, which includes individuals who are instrumental to the crime, not just those individuals who explicitly engage in the crime with the subject.

during his criminal career, thus creating a non-redundant ego-centric network. As he moved through these different networks, his behavior would often change to be consistent with the group, thereby building a diverse criminal career (see also Warr, 1996).

Using data on juvenile offenders, McGloin and Piquero (2010) directly tested and confirmed this supposed relationship between non-redundant networks and versatile offending, showing that individuals whose ego-centric accomplice networks had lower density scores (i.e., were less redundant) were less likely to commit the same crime across group offenses (i.e., they tended to demonstrate greater offending variety across instances of co-offending). Furthermore, this relationship endured even when accounting for the size of the network, demonstrating that it is not simply how many people a person offends with that facilitates versatility, but the structural properties of the co-offending network.

Roles within networks

The larger literature on criminal networks illustrates that networks consist of varied structures and therefore treating all groups as similar is unrealistic. Thus far, research into co-offending networks echoes this finding. In addition to the insight gained from thinking about network structure, recent contributions have considered the different roles in which individuals within a network play. Just as the network structure varies, roles are also varied and investigations into the different roles can have important implications for both theory and policy. As Waring (2002: 39-40) urged researchers to consider, “why do arrests of some members (and other interventions) seem to successfully break up some networks and not others?” In adopting a network perspective, and thinking about the

growing work of different roles in illicit networks, there are several positions that may be of particular interest if the goal is to dismantle the co-offending network: central individuals and cut points.[3]

Regarding the former, though there are several measures of centrality, the basic essence of this concept is individuals who are the most connected in the network. This can be considered in terms of direct connections (i.e., degree centrality), and indirect connections, in that some people are key mediators or "brokers" through whom other actors in the network must go to connect with each other (i.e., betweenness centrality; see Morselli, 2009). From a law enforcement perspective, central individuals are attractive points of intervention because they may hold more responsibility and their removal may disrupt the functioning of the network (Sparrow, 1991). Though it may be tempting to focus on reputations in structuring interventions, research has shown that network analyses can reveal important positions that otherwise may be missed (McGloin, 2005). As Morselli (2010:382) demonstrated with an analysis of the Quebec Hells Angels, "participants with high brokerage level were less likely to be members of the Hells Angels, thus suggesting that targeting strategies must consider the patterns that represent an offender's network at any given time, rather than simply focusing on an offender's status and reputation within a criminal organization." In addition to central nodes, law enforcement may also derive benefits from focusing on cut points. Cut-points are particularly important nodes who serve as a connection between groups that otherwise would be unconnected (Scott, 2000; Wasserman and Faust, 1994; see also McGloin, 2005). In other words, if not for this person, groups (or individuals) would have no

[3] It is important to recognize that there is debate about what positions or roles are the most vulnerable points for intervention in criminal networks (e.g., Carley, Lee and Krackhardt, 2001; Morselli, 2009; Sparrow, 1991).

linkage among them.

However, given the fleeting nature of most co-offending relationships, does it really make sense to think about interventions that are based on a particular role that particular when accomplice networks tend not to endure? To be clear, with somewhat more stable criminal networks, such as street gangs, organized crime, or drug crews, the focus is on strategically breaking up an existing network. But, from a co-offending perspective, the goal is not so much to dismantle a network but rather to prevent it from occurring in the first place. In other words, by preventing or reducing the likelihood of group crime, one could argue that we reduce the burden on the criminal justice system, and reduce the extent to which individuals are introduced to or become more embedded in criminogenic lifestyles (Andresen and Felson, 2011). In this way, prevention, not intervention, is the goal. With this in mind, what – if any position – in a co-offending network provides leverage to meet this goal? Unlike most other criminogenic networks, there is a position in co-offending networks that has clear and undeniable power and thus nominates itself for focus: the instigator.

Despite the long-known tendency of individuals to offend with accomplices, Reiss' (1986, 1988) work on co-offending was perhaps the first in-depth consideration of this topic. In these pieces, he argued that not all offenders enter into co-offending relationships in the same way; put differently, the decision to co-offend is not necessarily a democratic one based on equal levels of motivation and interest (Warr, 1996). Rather, some people, known as instigators or recuiters, are responsible for the idea and seemingly have the ability to convince others to take part. As Warr (1996) observed in the NYS data, subjects reported that the vast majority of group crimes had a single instigator.

Given the fact that co-offending can embed individuals in criminal networks more deeply, focusing attention on the individuals who tend to instigate these criminal events is a wise investment of resources. Indeed, when a person instigates group crime, s/he is is the source of a disproportionate number of cases in the criminal justice system both in an immediate sense, and in the longer term impact on accomplices (Andreson and Felson, 2010). Yet, despite the clear importance of identifying these individuals, there is scarce research and that which does exist is limited. Though there are several articles that discuss recruiters, empirical investigations that test the supposed profile of recruiters are rare. There are conceptual reasons to believe that some individuals, who are older than their less experienced accomplices, high rate offenders, and who rotate through several accomplice groups, are those who are systematically more prone to instigate group crime (see Reiss and Farrington, 1991; Van Mastrigt and Farrington, 2010). Indeed, there are certainly individuals who meet these profiles in various data sets; however, these inquiries did not confirm that these particular individuals were the ones most likely to instigate group crime.

Warr (1996) completed one of the few empirical investigations into patterns of instigation and did find that higher rate offenders were more likely to report instigating group crime. At the same time, however, his work called attention to the situational variation in the tendency to instigate co-offending. Specifically, he noted that individuals tended to be both joiners and followers, suggesting that scholars would benefit from understanding the reasons why people instigate in some circumstances, but not in others. Warr cautioned against the view that certain individuals instigate crime whereas others do not and suggested that the reality was more complicated.

Like many offending characteristics, it appears that both individual-level and situational-level attributes have a role to play in understanding the instigation of group crime. McGloin and Nguyen (2011) recently completed an investigation of the tendency to instigate group offending using data from incarcerated individuals in Colorado. They hypothesized that instigation of group crime is likely to vary across crime types, and that this variation is tied to the level of expertise that offenders have for that particular crime. At the same time, they tested the premise that more serious, chronic offenders – captured by age of criminal onset and number of felony arrests – would have a greater tendency to instigate. Like Warr (1996), they found evidence of within-individual variation in the tendency to instigate co-offending (along with some stability). Using data at the crime-type level, nested within individuals, their analysis revealed that perceived skill at the crime type in question consistently predicted the tendency to instigate, holding a host of covariates constant.

Though earlier ages of onset generally identified a tendency to instigate, their investigation made it clear that attempts to identify and limit instigation cannot be simple or solely based on offender attributes. Implications of such findings suggest that criminal justice policy would pay dividends by focusing on identifying certain individuals that meet the instigator/recruiter profile would only partially impact the crime rate. Identifying person based characteristics and situational characteristics of instigators in specific and the mechanisms of co-offending in general are important avenues for future research. The next section considers some additional avenues of future research.

Important Avenues for Additional Research

In the most general and basic sense, there is a clear need for more data on co-

offending. For example, information containing both official records and self-report from people involved in the same event would allow for cross validation and also provide direct commentary on the way in which co-offending crimes are negotiated and completed. Furthermore, collecting this data over time would offer an important contribution (McGloin et al., 2008). Indeed, such information offers the opportunity to better understand how group crime affects and is effected by criminal pathways (Piquero et al., 2007). Researchers who study criminal networks are well acquainted with the difficulty of getting access to necessary data and thinking critically about the validity of this information; co-offending data are no different. Issues such as the fleeting nature of co-offending networks, the flexibility of what defines an "accomplice", and the difficulty of obtaining access are issues with which researchers must creatively contend.

It is also important for future research to study how people find or select co-offenders. Two broad perspectives exist in the treatment of how offenders converge to commit a crime: first, some researchers suggest that co-offending occurs from spontaneous connections forged in common convergence spaces (Stolzenberg and D'Alessio, 2008; Felson, 2003). Contrary to this perspective, other scholars offer an explanation that involves a more deliberate, rational process in the decision to offend with others (Andreson and Felson, 2010; McCarthy, Hagan and Cohen 1998; Tremblay, 1993). Scholars who forward this perspective underscore a process whereby individuals choose to either offend alone or with others based on the potential risks and benefits of collaboration. For example, McCarthy et al. (1998) posit that while there are inherent risks in offending with others, individuals in circumstances of adversity may be more likely to collaborate with others. Weerman (2003) highlights the beneficial aspects of co-

offending and posits that offenders come together in a social exchange process, whereby "material and immaterial goods are exchanged" (p.2003). Despite some different commentary on the mechanisms whereby co-offending groups form, few studies have in fact empirically tested these different hypotheses.

Related to this point, the extent to which co-offending networks overlap with or are embedded in larger criminal networks is also unclear. In other words, we need research on how/why individuals decide to co-offend, as well as on who they select as accomplices. Though there is an assumption that offending accomplices are selected from the larger pool of deviant peers or criminal associates (Warr, 2002), this is speculative. As Figure 2 demonstrates, there are at least three ways in which the pool of accomplices overlap with the more general criminal network: it may be completely contained within the larger network (Figure 2a); it may partially overlap with the criminal/peer network (Figure 2b); or accomplices may be individuals who are not connected to the network of deviant peers or criminal associates (Figure 2c).

-- Insert Figure 2 Here --

If it is the case that the accomplice network is a sub-group of the larger criminal network, then delineating why certain individuals are used as accomplices (while others are not), or at the very least identifying these actors, can lend important insight. As Krohn (1986: S83) argues, "multiplexity in social relationships is likely to constrain individual's behavior." When ties among actors emerge across various social situations and roles, then these links take on added salience and have a greater capacity to shape conformity. In short, individuals who are part of the deviant peer group (or criminal organization) and who are also accomplices in shared criminal behavior may be those

who have the greatest priority and power in learning processes (Sutherland, 1947). Thus, in addition to the fact that group offending can broaden an offender's awareness space, in this situation, it can also strengthen the individual's connection to the deviant or criminal network, embedding him even further in a criminal lifestyle.

If it is the case that some accomplices are from the criminal/peer network, whereas others are not, or that an offender uses accomplices who fully exist outside the boundaries of this network, this too could be problematic. After all, this means that the offender is essentially expanding his illicit social network; it also means that law enforcement efforts to dismantle the criminal network nonetheless leaves this individual with a pool of criminal associates who are willing to join him in crime. Future research thus would be well served by being sensitive to the various ties that can define criminal networks (e.g., McGloin, 2005). Obtaining network information across different roles or relationships most certainly makes the data collection process more challenging and is likely to result in more complicated criminal networks, but it would be worth the effort.

In conclusion, though researchers have made significant strides in co-offending research in recent years, the literature remains small and in need of further development. Ideally, scholars interested in group crime will join the momentum of the expanding work on criminal networks and think critically about the way the structure of and one's placement in this specific criminal network both impacts and is impacted by the criminal career. Doing so will not only push the development of theory, but will also serve as additional guidance for policy-makers and practitioners interested in integrating knowledge about illicit networks into their intervention strategies.

Figure 1. The accomplice networks of three juvenile offenders.

1a.

1b.

1c.

Figure 2a. The co-offending accomplices are drawn from the pool of individuals in the larger criminal network.

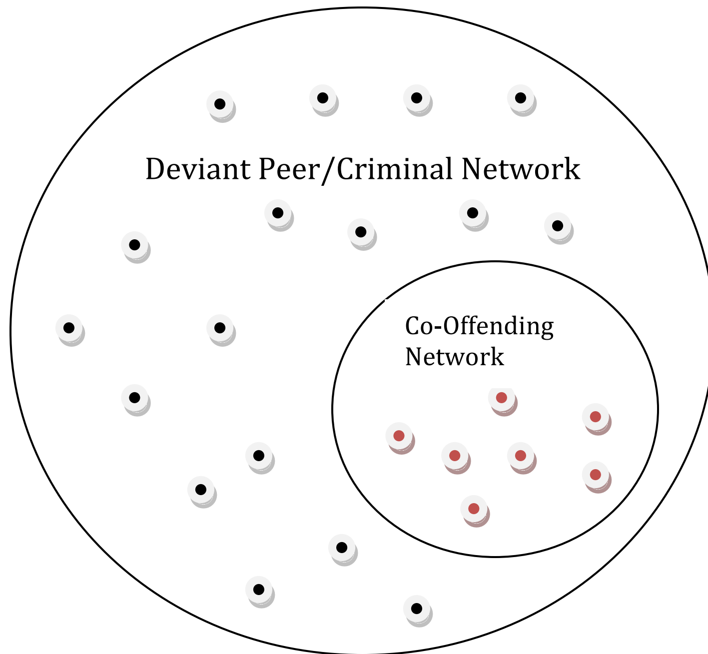


Figure 2b. Some co-offending accomplices are drawn from the pool of individuals in the larger criminal network, whereas some are not.

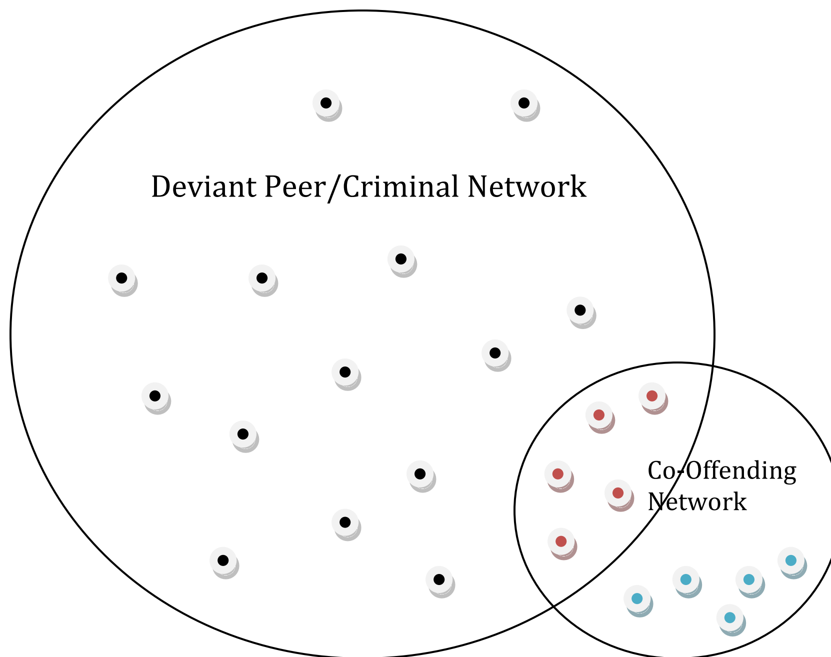
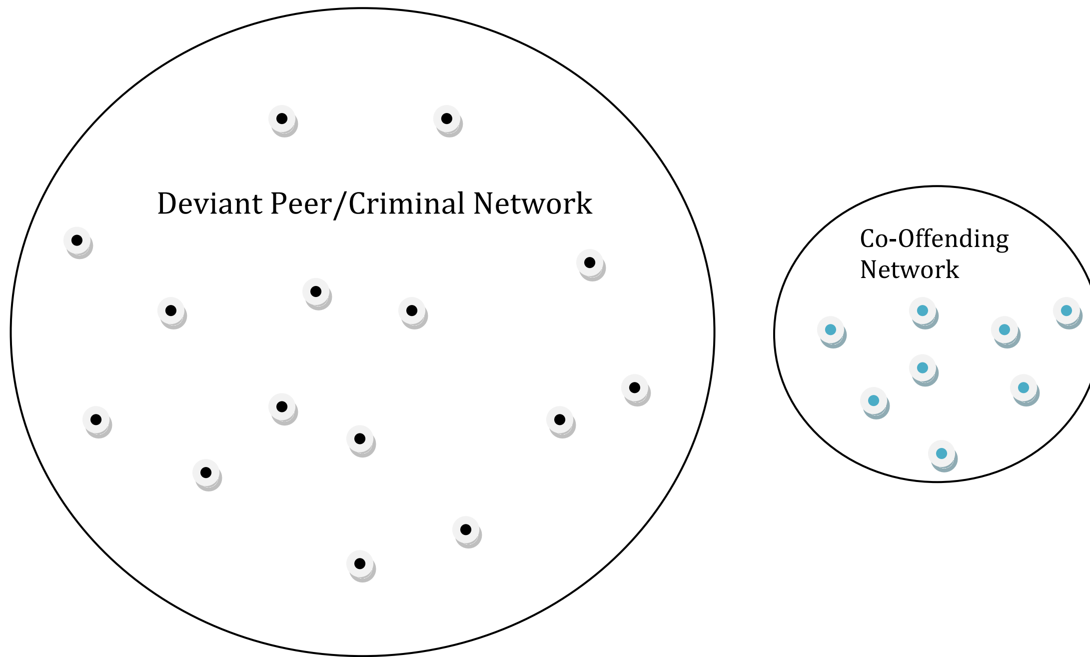


Figure 2c. The network of co-offending accomplices is distinct and separate from the larger criminal network.



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