POLICY AND INTERVENTION CONSIDERATIONS OF A NETWORK ANALYSIS OF STREET GANGS*

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Research Summary:
This study details a network analysis of the street gang landscape in Newark, New Jersey. Using individual gang members as the unit of analysis and multiple layers of associations as the linkages within the networks, the results suggest that the gangs in Newark are loosely organized with pockets of cohesion. In addition, there is variation with regard to individual connectedness within the gangs, and certain gang members emerge as “cut-points” or the only connection among gang members or groups of gang members.

Policy Implications:
The results lend further credence to the notion that problem analysis should precede gang interventions. In particular, the findings suggest that particular groups of gang members may be amenable to the collective accountability tactic, whereas others may become more cohesive as a consequence. Indeed, an intervention focused on individuals may be more productive in Newark. The cut-points within gangs are particularly worthy of attention, both for their capacity to act as communication agents for a deterrence message and for their potential vulnerability to the pulling levers strategy.

KEYWORDS: Gangs, Street Gangs, Network Analysis, Intervention

The street gang literature is one of the most prominent in criminology, not only in size, but also because it is populated by some of our field’s most influential theories and empirical works (see, for example, Cloward and Ohlin, 1960; Cohen, 1955; Short and Strodtebeck, 1965; Thrasher, 1927; Whyte, 1943). Despite its breadth and history, however, debates remain with regard to many seminal issues, such as how to define a street gang and the mechanisms of proliferation both within and across geographical

* This research was part of the North Jersey Gang Task Force, under the direction of the Police Institute at the School of Criminal Justice, Rutgers-Newark. The author wishes to thank Dr. George L. Kelling, Michael Wagers, the Newark Police Department, the Essex County Department of Parole, the Essex County Sheriff’s Office, the New Jersey Juvenile Justice Commission, Dr. Anthony A. Braga, the anonymous reviewers for their helpful suggestions, and Tracey Meares for her guidance.
regions. The status of the literature is not the only impetus for continued research, however. Indeed, the very nature of the problem courts attention for three primary reasons.

First, the sheer number of gangs in our nation suggests that this is a phenomenon worthy of attention. National trends have shown that gangs are increasing in number and, at the same time, illustrating a contagion effect across the country (Crane et al., 2000; Miller, 2001; OJJDP, 1998; Spergel et al., 1999). In particular, the 1990s witnessed a large growth in gang presence and activity (Curry and Decker, 2003; Howell, 1998). The Office of Juvenile Justice and Delinquency Prevention (OJJDP) (1998) reported that approximately 800,000 individuals in the United States are gang members, which is likely an underestimate given that the data were based on reports from 3,000 law enforcement agencies. Hagedorn (2002) suggests that this proliferation is indicative of a solidification of the gang in our society. As entry-level jobs disappear in the face of continued racial and social stratification, gangs have become part of the informal economy of many inner city landscapes (see also Wilson, 1996). Even so, it is unlikely that the increasing number of gangs is only reflective of deeper roots in urban life. To be sure, as the number of gangs has grown, they have coincidentally spread across the nation, diffusing to suburban towns and reaching to all regions of the country (Maxson, 1998; Miller, 2001; OJJDP, 1998).

Second, many gangs have been undergoing qualitative changes, underscoring the importance of continued research. Although many people conceive of gangs as youth phenomena, the upper age limit of gang membership has risen over the past years, expanding it beyond a juvenile issue (Howell et al., 2002; Klein, 1995). Gangs are also illustrating greater ethnic and gender heterogeneity (Klein, 1995), showing a significant growth in Caucasian and female membership. Finally, the line between prison and street gangs (see Decker, 2001a) is becoming muddied as gang members are released into the community and as particular street gangs, such as the Bloods and the Crips, grow to be part of prison life when street members enter the correctional system.

Third, street gangs are not esoteric phenomena. Granted, they are often unique to their local regions (Howell, 2000; Klein, 1995), but they are generalizable in terms of the damage that they can impact on a community. Whether gangs are inherent to the etiology of a homicide/firearm nexus, to a declining quality of life and growing fear within the community, or to any other number of problems that they have the capacity to foster, the fact remains that this is a significant practical arena worthy of consideration. Our field often recognizes this fact, as evidenced by the plethora of gang intervention and police across the nation (see OJJDP, 2000). Unfortunately, the general gang intervention literature is not in a
position to make any firm statements about "what works." Moreover, many interventions proceed without an evaluation, as well as begin before a problem analysis (see OJJDP, 2000), which may lead to inappropriate and ineffective tactics.

GANG INTERVENTIONS AND ORGANIZATION

Boston's Operation Ceasefire (Braga et al., 2001; Kennedy et al., 1996, 1997, 2001) is one of the most noted and replicated strategies. Indeed, because of its success, multiple cities have attempted or are attempting to apply similar intervention tactics (Chermak and McGarrell, 2004; Kennedy and Braga, 1998; Tita et al., 2003a, 2003b). The framework of this model is also mirrored in the billion dollar initiative Project Safe Neighborhoods, as well as in the OJJDP Comprehensive Gang, or "Spergel," model. Given such a context and endorsement, it is tempting to simply apply Ceasefire tactics to a local gang problem. An intervention must "match" the gang landscape, however, and therefore should be preceded by a problem analysis.

For example, if one considers the premise of collective accountability—a vital theme in Operation Ceasefire and in some replications (see, for example, Tita et al., 2003b)—there is an inherent presumption that the street gang of focus is cohesively organized. To be sure, expecting the gang to have the capacity to control itself, given that any one actor's actions will court law enforcement attention on the entire group, assumes a fairly impressive level of organization. "In order to hold gangs collectively accountable, there must be some level of hierarchy or organization within the gangs" (Tita et al., 2003b: 113). In practice, however, gangs may not possess such amenable levels of cohesion. Indeed, the literature suggests this may be unlikely.

A few researchers suggest that gangs are rationally and cohesively organized groups that have hierarchies, rules, and specialized member roles (Sanchez-Jankowski, 1991; Skolnick, 1990), whereas others argue that gangs are more like informal groups that lack cohesion and true organization (Curry and Decker, 2003; Decker, 1996; Decker and Winkle, 1994, 1996; Klein and Maxson, 1994; Klein et al., 1991). Most literature errs on the side of loose organization (Decker et al., 1998; Howell et al., 2002; Weisel, 1999; Yablonsky, 1962), but the interest in gang organization continues (Decker, 2001b). Indeed, there is room for empirical commentary, especially if it stems from a different methodology and analytic technique that can lend particular insight.

The fact that the literature suggests loose organization, but a perception still exists of tight organization and structure (Sanders, 1994), highlights
the need for any policy or intervention to be preceded by a problem analysis of the local gang landscape. The Los Angeles Group Guidance Project, which was initiated by the LA Probation Department and had the goal of reducing gang presence and violence by ingratiating the street gangs into local society, exemplifies this requisite (see Klein, 1971, 1995). This program offered tutoring, counseling, and recreational activities to the local gangs. Unfortunately, these actions provided the gangs with opportunities to become more cohesive, which resulted in more gang crime.

Klein (1971, 1995) accordingly warns that treating chaotic gangs as cohesive groups may place a self-determining prophecy. In fact, a law enforcement focus on gangs, through arrest, patrol, surveillance, and other mechanisms, can be a powerful external source of cohesion. It can provide the group with a common point of conflict as well as with a label and identity, setting a self-fulfilling prophesy in motion (Carlsson and Decker, 2005; Klein and Crawford, 1968). In short, before one proceeds with a gang intervention, the lesson, both from successes (Braga et al., 2001; Kennedy et al., 1996, 1997, 2001) and failures (Klein, 1971, 1995), seems to be that one avenue of empirical investigation when engaging in a problem analysis should be the level and nature of the street gang organization. Indeed, in this volume, Maxson, Hennigan, and Sloane take the time to discuss the potential role that gang organization may play with regard to the adoption of civil gang injunctions (CGIs).

To be sure, considering the structure and organization of street gangs is an important inquiry when attempting to define a local gang problem. For example, when Decker and Curry (2002) analyzed gang violence (including homicide) in St. Louis, gang organization emerged as a significant factor. Whereas most researchers focus on intergang violence, Decker and Curry (2002) found evidence of intragang violence and homicide. They concluded that the loose organization of St. Louis’ gangs precipitated this finding. The street gangs were simply not cohesive enough to effectively manage the social behavior of their members.

It is also worth noting that Klein (1996) has presented a typology of five different gang structures: (1) traditional, (2) neotraditional, (3) compressed, (4) collective, and (5) specialty. These gang types vary on such dimensions as duration, size, and the presence of subgroups. Given the distinctions among these gangs, proceeding with an intervention prior to understanding what “type” exists would be unwise. For example, Miethe and McCorkle (1997) found that an anti-gang intervention in Nevada was largely ineffective partly because it presumed that the local problem was akin to that found in serious, chronic gang cities.

In response to a growing community demand to impact the gangs in
Newark, New Jersey, therefore, researchers recognized that any intervention or policy should be preceded by a problem analysis of the gang landscape, particularly from an organizational viewpoint. At the same time, there was a desire to investigate this issue in a manner that held unique utility for policy considerations. Previous research into the organization of gangs has relied on such issues as views of the gang, the presence and importance of rules and meetings, internal discipline, and closeness to the group (Cartwright et al., 1970; Decker, 2001b; Weisel, 1999; Yablonsky, 1962). Although this is helpful, it is not necessarily the most heuristic method with regard to policy or intervention. A problem analysis should have the capacity to address community concern, but it should also contribute to the current state of knowledge in a meaningful way. Accordingly, this article comments on gang intervention policies by using network analysis as an analytical strategy. With this in mind, the following section briefly reviews network analysis, focusing on its use in criminological research. The next sections detail the nature of the data under use in this article, as well as the emergent results. Finally, the concluding section provides a general commentary on the findings, paying particular attention to potential policy implications.

NETWORK ANALYSIS

Unlike traditional forms of analysis, network analysis focuses on the dynamic interaction among people or groups rather than on the attributes of such individuals or groups. In doing so, it has the capacity to search for regular patterns in social relationships (Freeman, 1992; Wasserman and Faust, 1994). Initial forays into network analysis tended to rely almost exclusively on graphical displays of social data, called sociograms, developed under Moreno (1947, 1953). It continues to lend clarity to seemingly chaotic data sets, particularly in cases where there is a direction to the communication or relationship. In a manner akin to mapping (see Sherman et al., 1989), visual descriptions can provide substantial guidance for researchers and practitioners. At the same time, however, the field has progressed to more quantitative analyses that allow for measures of cohesion, individual position, including prominence, as well as other potentially useful findings.

Krohn (1986) suggests that network analysis holds theoretical importance, because network structure may help to explain delinquency patterns given that it has the capacity to constrain behavior in particular ways. Despite the fact that some have heeded his suggestion for a network perspective (see, for example, Haynie, 2001, 2002), it is not yet a familiar technique for most criminologists. This is not to say that researchers are unaware of its analytic potential. For example, Sarnecki and Pettersson
(Pettersson, 2003; Sarnecki, 2001; Sarnecki and Pettersson, 2001) relied heavily on network analysis in their research on co-offending groups. In short, they provided visual displays of these offender networks, which helped them to elucidate their findings, such as the fact that continuous co-offending partners were rare. Simply, their analytic strategy captured the fluctuating nature of co-offending networks (Weerman, 2003), a wise strategy in studying this criminological phenomenon (Waring, 2002). Frank (2001) elaborates further by discussing statistical network models for estimating co-offending networks, a complementary pathway to sociograms and other descriptive techniques.

Despite its rarity, network analysis holds utility for criminology and public policy, particularly in light of a renewed focus on criminal enterprises rather than on hierarchical and centralized organized crime syndicates (see Bunker and Sullivan, 2001; Clarke and Brown, 2003; Eck and Gersh, 2000). Coles (2001) explicitly calls for criminologists to use network analysis, particularly with regard to investigations into organized crime, as others coincidentally argue its advantage over traditional organized crime investigations (McIlwain, 1999). Indeed, Clarke and Brown (2003), as well as Eck and Gersh (2000), argue that criminal enterprises are dynamic social networks of individuals, rather than clearly structured, hierarchical, stable groups. As such, adopting a typical group perspective may impede a researcher’s ability to recognize the quantity and quality of connections among people (Sarnecki, 2001).

Some researchers have recognized the potential of network analysis within this research domain. For example, Finckenauer and Waring (1998) and Natarajan (2000) used this technique when characterizing the organization of Russian organized crime and drug trafficking organizations, respectively. In particular, Natarajan (2000), using wiretaps and other prosecutorial data, deduced the overall structure of an organized crime syndicate while highlighting actors who were central to the network.

Given that researchers have begun to recognize the potential for network analysis in studies of co-offending, as well as in organized crime syndicates, it is surprising that this technique is rarely used in the gang literature. Indeed, the premise of group dynamics is a central concept to gang research (Cohen, 1990; Short and Strodtbeck, 1965; Sun, 1993). Fleisher (2002:200) states that “gangs are social networks composed of individual gang members, and that gang member behavior is determined in part by a gang member’s location in the structure of the social network. That location in the social network structure determines opportunities and constraints that expand or limit a gang member’s choices.” Thus, the dynamic nature of the relationships among gang members is a defining part of the organization and likely exerts a robust influence on the behavior of the group as well as on the individuals (see also Pfautz, 1961). In
addition, Peterson et al. (2001) found that the social structure and gender composition of street gangs shaped the behavior and experiences of the members, further justifying a focus on this topic.

A good portion of the gang literature has focused on social relations and activities, but it has not used an analytical technique that can best describe such data (see, for example, Short and Strodbeck, 1965; Thrasher, 1927; Whyte, 1943; Yablonsky, 1962). Interestingly, Whyte (1943) used an elementary version of network analysis by visually illustrating basic lines of communication among and within groups. It served to lend clarity to his discussion of social structure. Although he had the data to push this analysis further, the analytic technique was not an obvious option. For example, network analysis may have provided additional clarity with regard to his discussion of the changing structures of the gangs, as well as individual member's social mobility within these groups. The field is relatively more aware of this technique at present, as evidenced by Klein's (1995) use of a sociogram to illustrate his discussion of a traditional street gang, however, and is showing a growing recognition for its potential in the intervention and policy arena.

One of the better known gang projects, which consequently became a framework for other interventions, did use network analysis, underscoring its potential benefit in the policy arena. The Boston Gun Project began with the intent of understanding the purported nexus of rising youth violence and use of firearms. As part of its problem analysis, representatives of various criminal justice agencies defined and characterized problematic local gangs (Braga et al., 2001; Kennedy et al., 1996, 1997, 2001). This process included elaborating on the relationships among the street gangs, which Kennedy et al. translated into sociograms illustrating connections within the gang landscape. This seemingly simple information was invaluable for the problem analysis and construction of Operation Ceasefire.

First, this network perspective helped to illustrate why particular geographic areas were experiencing high levels of violence given the current rivalries. Second, it revealed which street gangs were the most "connected" within the landscape, thus highlighting them as particularly worthy of intervention focus. Third, it helped to anticipate unintended consequences of the strategy by highlighting which rival gangs may attempt to take advantage of law enforcement focus on a particular street gang. Thus, rather than addressing one gang set to the exclusion of the remainder of the landscape, a strategy common within law enforcement circles (Stelfox, 1996), the knowledge of the connections among the gangs provided unique leverage when undertaking an intervention strategy.

Sarnecki and Pettersson's (Pettersson, 2003; Sarnecki, 2001; Sarnecki and Pettersson, 2001) illustration that network analysis may shed light on the internal organization of criminally oriented social groups, along with
the Boston Gun Project’s illustration of its potential utility in the policy arena, couple nicely. Although there certainly is a precedent for using a network analysis to understand and define local gangs, this article proposes a different focus and analysis. The Boston Gun Project (Braga et al., 2001; Kennedy et al., 1996, 1997, 2001) used a network analysis with the gang as the unit of analysis. This research approaches network analysis in a different fashion, however, by adopting the gang member as the unit of analysis, in a manner somewhat similar to Sarnecki and Pettersson (Pettersson, 2003; Sarnecki, 2001; Sarnecki and Pettersson, 2001).

Focusing on gang members and their known associates allows the social networks of the street gangs to emerge. From such data, one has the ability to deduce the organization, cohesion, and structure of the various gangs in Newark in a specific and descriptive manner. Such information would be integral to potential policy initiatives aimed at impacting the gang landscape in a meaningful way. This level of analysis also sheds light on individual entrenchment in the group, which has policy implications as well. Law enforcement strategies may benefit from this analysis by focusing on the individual members who are integral to the gang network, that is, people who are connected to other members in particularly consequential ways. For example, some may think that gang members in the upper echelons of the organization are the ones who should be impacted, in the hope that this will result in the collapse of the organization. If a street gang is not organized in a hierarchy, however, removing the supposed top of the structure may not be as effective as intended. Focusing resources on other social positions, instead, such as the most central or connected individuals, may be most damaging for the organization and the perseverance of the gang. ¹ This is admittedly a hypothesis, but network analysis nonetheless provides the leverage to address such considerations. In addition, as Maxson (this volume) discusses, police often identify particular individuals for increased focus when creating CGIs. Network analysis may aid in selecting which gang members, or groups of gang members, are most appropriate for such a list.

At the same time, this analysis is equally important for social service providers. Certainly, if the social networks include peripheral members who are not fully entrenched in the web of relations, they should not be subject to the same intervention mechanism as central or core members.

¹. It must be noted that merely leveraging the resources of law enforcement against an individual because of his or her associations with other gang members does have potential legal and ethical dimensions to consider. Ideally, the social position of an individual within the gang should become one of many factors (including criminal history and whether the individual is under criminal justice supervision) that inform an intervention.
Individuals who are connected to a minimal number of other gang members may be persuaded to withdraw from gang life, more so than core members. At a minimum, perhaps social service providers could intervene and prevent an individual from becoming further enmeshed in the gang network. In short, network analysis can be an aid in the strategic selection of intervention strategies and foci. Although this information cannot be the sole foundation for an intervention strategy, it certainly can be an informative and heuristic tool when considering potential avenues.

ANALYTICAL METHOD

DATA

The data under use here stem from the Newark portion of the North Jersey Gang Task Force, a regional problem analysis project that sought to define the local gang landscape in Northern New Jersey. In a fashion similar to the Boston Gun Project, these data came from the experiential knowledge of representatives of various criminal justice agencies, including the Newark Police Department, Essex County Sheriff’s Office, Essex County Department of Parole, and Juvenile Justice Commission of New Jersey. In particular, groups of law enforcement officials from this variety of criminal justice agencies engaged in collective semistructured interviews—32 over the course of one year—that solicited information on the gang landscape. In particular, they provided information on known gang members, as well as on the quantity and type of their respective associates. For a detailed discussion of the data collection technique, as well as the validity and reliability of these data, see McGloin (2004).

The interview groups’ professional classification of gang members relied on New Jersey code, which defines a gang as three or more people who are associated in fact, that is people who have a common group name; identifying sign, tattoos, or other indices of association; and who have committed criminal offenses while engaged in gang-related activity (NJSA 2C:44-3h). To be consistent with their definition, this project used the same definition. This project also focused on street gangs, not biker gangs, white supremacist groups, or cults. A gang member was defined as “any person who participates in or with a criminal street gang; has knowledge that gang members engage in or have engaged in criminal activity; and willfully promotes, furthers, or assists in any criminal conduct by members of that gang” (BJA, 1997: 31). The interview subjects agreed that their professional expertise of such identification typically relied on self-nomination of a suspected gang member and tattoos, in addition to criminal activity.

As each member was identified, the interview subjects also nominated their respective associates. Rather than imposing associate categories or a number limit, associate categories emerged that reflected the reality of the
gang landscape and interview subjects identified all who were known to them. During the course of the interviews, the following categories emerged: the two subjects’ were co-defendants; they are the relatives; they “run” together, which means they hang out together and commit crime together; they know each other well because they grew up in the same neighborhood for an extended amount of time (this often captured cohabitating in the same public housing area); they know each other because they were recently in the same prison for an extended amount of time together (this was confirmed through Department of Corrections records); or any permutation of the previous categories. Therefore, for every identified gang member, the group provided data on the quantity and quality of his or her known associates.

All relations among the gang members are reciprocal in nature and potentially include multiple layers. Indeed, two people may be brothers, they may run together, and they may have been incarcerated together. Thus, the gang networks under focus are mutual and multirelational, not only allowing for different categories of relations, but also for the potential permutations of these connections. It should be noted that all identified individuals were active gang members. For example, the data do not include all known siblings of “John Doe” but those siblings who are known, active gang members. Similarly, the data do not include all of “John Doe’s” co-defendants but those who were known to the interview subjects as fellow gang members. In short, the focus was on analyzing gang networks, not offender, kinship, or other such networks.

After 32 group interviews, there were data on 736 gang members—378 (51.3%) were identified as Bloods, 80 (10.9%) as Crips, 141 (19.3%) as members of the Almighty Latin King and Queen Nation, and the remaining 137 (18.6%) were identified as Netas. Most of the sample was male (98.9%), with an average age of 27 years, although there is an impressive age range (14 to 51 years). Although the literature has noted an ethnic expansion within gangs (Howell et al., 2002; Klein, 1995), the gang members in this sample are all minorities—the sample is approximately 62% African-American and 38% Hispanic.²

². Some may have concerns about the demographic profile of the sample. The ethnicity of the sample reflects the contextual population of Newark, New Jersey. According to the 2000 Census, Newark is nearly 54% African-American and approximately 30% Hispanic. Although the Census does not treat these two variables as mutually exclusive, racial minorities are clearly the majority in Newark. Additionally, Decker’s (1996) sample in St. Louis was 96% African-American, even though it was a snowball sample created by gang members themselves. With regard to age, research has shown a broadening of the age range within street gangs (Howell et al., 2002; Klein, 1995). Finally, it is true that some researchers suggest women can make up to one third of all gang members in the nation (Maxson and Whitlock, 2002), but it is a population
It is worth mentioning that the Bloods and Crips in Newark are “constellation gangs” (see Decker, 1996), in that they include various sets such as Sex Money Murder and Grape Street, respectively. Counting all of these sets as individual gangs would increase the number of street gangs in Newark exponentially. This is not done for two primary reasons. First, some sets are transient, resulting in, for example, a Blood being a member of two sets over the data collection period (according to the interview subjects). Second, the aforementioned social ties often cross existent set-allegiance boundaries. As one example, brothers who are both Crips may be members of two different sets. A focus on sets as distinct gangs would miss this important social relationship in the gang landscape. Accordingly, the gangs of focus are the Bloods and Crips, rather than any particular set.

Some may question the validity of the data because they stem from law enforcement and because only four gangs were identified, with over half of the sample being Blood members. With regard to the latter two issues, the interview subjects focused on those gangs that were problematic in Newark as part of the problem analysis. For example, although there were some suggestions of an MS-13 presence in Newark, no members had yet emerged as problematic within the expertise of law enforcement. Because the data presented here reflect individual gang members, this gang was accordingly not included in the analysis. Additionally, gang members who were not recently criminally active are likely missing from this analysis. To be sure, when data collection relies on the expertise of criminal justice personnel, as in the Boston Gun Project, the data are bounded by this knowledge and are limited accordingly. Even so, however, the data hold utility.

Many respected gang researchers (see work by Decker, Klein, and Maxson) often rely on law enforcement data. At the same time, the interview subjects had cultivated an expertise from their explicit work with gang caseloads—an expertise that was consistent across individuals and agencies. As Stelfox (1996:31) noted, “. . .there is a great deal of intelligence which cannot be recorded in any official system,” which “places a premium on personal knowledge.” Finally, the success of Operation Ceasefire, based on data generated in a fashion similar to this research, would simply not have been possible had law enforcement’s perception of the gang landscape been invalid. It is also worth noting that relying on data stemming from gang members, who would ethically be informed of the fact that emergent data would serve as the foundation for a law

particularly difficult to access, especially with a focus on criminally active gang members through the lens of law enforcement (Curry and Decker, 2003; Miller, 2001). It is worth noting that the aforementioned St. Louis sample was predominately (93%) male (Decker, 1996).
enforcement-based intervention, may be suspect under these particular circumstances. Thus, although the data may be limited, they are nonetheless worthy of focus and play an essential role in understanding the problem at hand.

ANALYTIC TECHNIQUE

Network analysis provides a variety of analytical measures and options, which have the potential to shed insight on policy considerations. There is an assortment of methods in which to quantify and study group-level organization as well as individual social position. This inquiry is interested in a few specific measures and lines of investigation, however, namely those that may provide a commentary on potential policies and interventions. As such, it will first ascertain the cohesion of the street gangs. In particular, the analysis will focus on the overall gang structures and will subsequently search for cohesive subgroups within the gangs. It will help to inform if and how a group-level intervention could potentially operate. Then, the analysis will shift focus to connectedness among members within the gangs, identifying positions of potential structural importance. Should an individual-level intervention emerge as a wiser pathway, these findings will help to identify individuals worthy of attention.

RESULTS

STREET GANG ORGANIZATION

As a previous analysis showed (McGloin, 2004), all street gangs in Newark are disconnected, which means that each network is divided into various components that have no connection to or path among each other (Wasserman and Faust, 1994). In short, the gangs are made up of distinct, unconnected subgroups of associations. Density coefficients, a more quantitative measure of group cohesion (see Haynie, 2001), also suggest that the street gangs are not tightly organized. The density coefficients for each gang were extremely low—all were less than 0.1. Density coefficients exist on a spectrum from 0 to 1, with 0 suggesting no connections within the network, and 1 suggesting a fully saturated network, in which every person is connected to every other person. These findings are not necessarily surprising because the Bloods and Crips have many sets within these labels. Interestingly, however, the subgroups are not reflective of sets, such as Gangsta Killer Bloods or the Grape Street Crips. Indeed, data exploration did not reveal homogeneous set allegiances within the components of the Bloods and the Crips, and the ALKQN supposedly has a singular chapter in Newark, despite the multiple components in the network.

Given the disconnected nature of the street gangs, additional inquiries
into the group organization focused on the identification of cohesive sub-
groups. Although the overall organization of the street gangs may be
loose, this does not exclude the possibility of tight groupings within the
larger network. Indeed, researchers have spoken about cliques of core
members within street gangs who essentially shape the nature, purpose,
and activities of the larger group (Spergel et al., 1994). Some gang
researchers also use this term to refer to “sets” or subgroups within the
gang based on attitudinal commonality (see Short and Strodbeck, 1965;
Thrasher, 1927). As such, this analysis also sought to uncover cliques,
although this term takes on a different meaning in network analysis circles.

In network analysis, a clique refers to a subgroup of individuals (at least
three people) who are all directly connected to one another in some fash-
ion (Scott, 2000; Wasserman and Faust, 1994). In other words, this is a
group with the highest possible density of linkages. The analysis revealed
cliques of varying sizes, from 3 to over 70 people across gangs, for all four
street gangs. Such pockets of cohesive subsets, again, are not necessarily
indicative of explicitly named sets. Even so, these groupings represent
individuals who are intimately connected to each other. In short, although
the overall street gangs are organized in a very loose fashion, they do con-
tain subgroups. It is here where cohesiveness emerges within the street
gangs in Newark.

INDIVIDUAL SOCIAL POSITIONS

The focus on group level analyses is certainly important when weighing
various policy interdictions. This problem analysis also sought to investi-
gate variant social positions within the gang networks. Many gang inter-
ventions focus on individuals (see for example Klein, 1968; Tremblay et al.,
1996), and network analysis provides the analytic capacity to highlight par-
ticular individuals who may nominate themselves for strategic focus.
Gang research that differentiates members of a gang typically puts forth
the proposition that most are peripheral players and only very few are
core members, or fully committed to and embedded in gang life (Klein,
1995; Thrasher, 1927; Yablonsky, 1962). One manner in which to deter-
mine how “central” an individual is to a social network is to determine the
ratio of connections that a person has to all potential connections. This is
referred to as an actor’s “degree centrality.”

Like the density coefficient, this measure also ranges from 0, indicating
the person is connected to no one, to 1, indicating the person is connected
to every other person in the network (Scott, 2000; Wasserman and Faust,
1994). Thus, the higher the coefficient, the more “central” the person is to
the social network under focus. Given that the network data are mutli-
relational, the subjects’ degree centrality was computed for all five primary
relational types. As an earlier analysis illustrated (McGloin, 2004), there
were variations in the levels of connectedness for individuals across all types of relations, which is consistent with the literature differentiating core and peripheral members. Thus, although the technique is not very common, the findings for this inquiry are consistent with the literature. What is interesting, and potentially important for policy, however, is that the network analyses also revealed a social position of structural importance.

Removing most actors from a network will change the pattern of social relations, but it does not have a significant impact on the overall structure of the network. Individuals who act as cut-points, however, are the only connection among individuals or groups of individuals, so that removing them serves to disconnect and disorganize the network (Scott, 2000; Wasserman and Faust, 1994). In other words, if not for this person, groups (or individuals) would have no linkage among them. Figure 1 illustrates an example of cut-points within the Crips in Newark, shown as diamonds within the sociogram. For example, the individual coded as “C142” is a cut-point. He or she is the only connection between the two groups of gang members on his or her left and right and is connected to another cut-point (partially hidden on the bottom of the right cluster). If not for this person, these two groups would have no linkage between them and would be disconnected.

In all four street gangs under study, a handful of cut-points emerged. The exact reason for these cut-points is unclear, however; because no pattern surfaced with regard to the nature of these connections in either the matrices or the commentary offered by the interview subjects. Although some may think that cut-points serve to transport narcotics or other illegal contraband, no data confirm or refute this notion. That knowledge is simply beyond the scope of the methodology under use here.

**DISCUSSION**

The impetus to study street gangs is often tied to an aspiration to temper or ameliorate some detrimental impact on the local community, whether it is generally high levels of crime, violence, homicides, or a pervasive sense of fear. In the rush to find a solution, many interventions operate on inherent presumptions about the characteristics of gangs—presumptions that may not be accurate (see Mieth and McCorkle, 1997). As such, criminologists generally agree that an intervention program should always be preceded by a problem analysis. Given the important role that street gang organization has played in research and in intervention outcomes, this is one topic area that should be part of such an analysis. This article suggests that a certain analytical technique—network analysis—may lend
particular insight to some salient questions for gang research and resultant policy.

Various social science domains have embraced the utility of network analysis (Wasserman and Galaskiewicz, 1994), but criminology generally remains behind on the learning curve. This is not to suggest that no one has used this analytical procedure. Indeed, it has been used in a variety of spheres (see, for example, Coles, 2001; Finckenauer and Waring, 1998; Haynie, 2001; Sarnecki, 2001; Sarnecki and Pettersson, 2001). In general, however, it is rarely recognized as a helpful tactic in answering questions of criminological importance. This is despite the fact that accounting for various network measures often allows us to better understand the nature of delinquent and criminal behavior (Haynie, 2001; Krohn and Thornberry, 1993).

Perhaps the research that best illustrates the utility of network analysis
in criminology is the work of Sarnecki and Pettersson (Pettersson, 2003; Sarnecki, 2001; Sarnecki and Pettersson, 2001). When studying co-offending patterns in delinquent boys, they employed network analysis at both the quantitative and the visual level. They provided rich, descriptive discussions of the dynamic and complex nature of delinquent networks, broadening our understanding of co-offending. Sarnecki (2001) argues that this method would serve the gang literature, allowing researchers to more accurately capture interconnections and relationships within the group. This sentiment coincides with others who suggest criminal enterprise networks are more accurate descriptions of criminogenic groups rather than centralized, stable, hierarchical entities (Clarke and Brown, 2003; Eck and Gersh, 2000). To be sure, network analysis has the capacity to focus on the organizational status of a street gang in a manner not typically found in the existent literature.

With network analysis as an analytic technique, the gangs in Newark emerge as loosely organized, although they do have pockets of cohesion. These subgroupings range in size, but they are all reflective of intense connections among gang members. In other words, the group-level organization is more complex than simply saying it is loosely organized or cohesive—there are layers of organization that network analysis can capture and describe. Many researchers who argue that gangs are not organized rely on such measures as members’ views of the gang, the presence and importance of rules and meetings, and reported closeness to the group (Cartwright et al., 1970; Decker, 2001b; Weisel, 1999; Yablonsky, 1962). These are valid and important measures with regard to the question of interest, but they cannot capture the layered nature of the gang organization in the same way that network analysis can. Indeed, by focusing on the individual gang members as the unit of analysis, the results here comment on the gradation of gang organization, as well as on social positions within the gang. The point here is not that network measures are better, per se, but that this is a different and useful way to measure a trait that continues to interest criminologists (see Decker, 2001b).

The results on individual social position suggest that there is variation with regard to the level of embeddedness or connectedness within street gangs, which is consistent with the literature that speaks to core and peripheral members (see, for example, Curry and Decker, 2003; Klein, 1995; Thrasher, 1927). The findings also highlighted another interesting and potentially important social position—the cut-point. These people, a handful of whom existed in each of the respective four gangs, serve as the only connection among people or groups of people within the gang network. The message with this finding is that when one shifts focus to position within a network, one can not only differentiate people according to how connected they are in the social network of the street gang (as in
peripheral and core members), but also according to the structural importance they hold. This finding is interesting, but hardly new. In fact, to some degree, it replicates Whyte's (1943) finding that certain people acted as communication conduits between two gangs. Indeed, he wrote of intermediaries between the corner and the college boys with some detail. Such people were the only source of contact between these groups. In essence, they were cut-points, although this language was not available for Whyte to use.

Although these findings are interesting, the consequent policy implications are most pertinent for this article. When contemplating whether a strategy should address an entire gang, some subset of actors, or particular individuals, network analysis provides the ability to have educated and informed conversations, while nominating particular avenues of focus. This is not to say that it is the premiere method of investigating gangs—it is, however, a particularly advantageous strategy given the nature of the data.

POLICY IMPLICATIONS

When relying on law enforcement agents as informants about the gang landscape, asking general questions about organization may “tap into” myths and perceptions rather than specific information and expertise. By turning to knowledge about particular individuals and their known associates, one has the capacity to gather some interesting and powerful information. At the same time, if the gang members within a jurisdiction are quite numerous, as is the case in Newark, social patterns in relationships can be easily missed or overlooked. The benefit of this analysis is that it can confirm or refute perceptions about organizational cohesion and that it can highlight particular subgroups and individual positions of interest and/or importance. In short, network analysis has the capacity to lend clarity to data in a meaningful and heuristic manner. At a minimum, it can lend insight into whether treating the entire street gang as a group, with regard to intervention, is a wise and appropriate decision or may carry the unintended consequences witnessed by Klein (1971, 1995) in Los Angeles. In other words, would utilizing a group-based strategy potentially support the group becoming more cohesive? At the same time, should an individually tailored strategy emerge as the policy of choice, this analytic method can nominate individuals for focus.

GROUP-LEVEL CONSIDERATIONS

The general implications of this strategy are interesting, but the true utility becomes apparent when we focus on the results with regard to the street gangs that populate Newark. First, the results that speak to group
organization have clear policy implications. According to the density coefficients, as well as the number of components in each network, the data indicate that the four main street gangs are not well organized or socially unified. As mentioned, one primary strategy of Operation Ceasefire, and other replications such as the Hollenbeck Initiative (Tita et al., 2003b), was collective accountability. Under this strategy, the gangs were informed that if one member committed violence, the working group would respond to the gang as a whole. In other words, this tactic used the social cohesion of the gang as strategic leverage. At this level, there simply is not enough social cohesion to sustain this strategy. In fact, such actions (Klein, 1971, 1995; Yablonsky, 1962) may prompt the gangs to become more cohesive and organized, and in turn more criminally active. In reality, although ignoring a gang may allow it to evolve toward greater organization, reacting at the other end of the spectrum may have a similar effect. Not only may intense law enforcement focus provide a common point of conflict, but it may also set a labeling process and resultant self-fulfilling prophesy in motion (Carlsson and Decker, 2005).

This is not to suggest that it would be an ineffective strategy in general, however. Indeed, the gangs in Boston and Hollenbeck were smaller and had better defined boundaries. Perhaps, then, a different group focus is warranted. Some may suggest that one possible approach would be to turn to “sets,” such as Double ii or Brick City Brims within the Bloods, because there were identifiable cohesive subgroupings in the gangs. These subgroupings, however, do not reflect sets. Instead, the connections that form the base for these groups often cross set allegiances. Still, given the importance of social cohesion for collective accountability, the cliques (groups with the highest possible density of social connections) are worthy of focus. Indeed, they contain a manageable number of people who are all directly connected to one another. By focusing on such a group, there may be enough social control, or at least communication, among the members for collective accountability to be a plausible strategy.

It is worth noting that group organization is not only important when considering “collective accountability.” As Maxson et al. describe in this volume, the type of gang should be an integral factor of consideration when adopting local CGIs. When proposing that CGIs likely have more impact on gangs that evidence territoriality, they also hypothesize that drug gangs may also be amenable to this intervention because of their relatively high levels of organization and cohesion (see Klein, 1995). Thus, these results could even guide the selection and focus of CGIs, which in the case of Newark, would probably hold more utility with cohesive subgroupings, rather than the larger gang networks.

Still, focusing an intervention strategy at individual gang members, rather than at a perceived “collective,” may well be a wiser pathway.
Indeed, the fact that the street gang networks under study here are not very dense or cohesive suggests that their respective members may be vulnerable to outside pressures and influences (Granovetter, 1973). Interestingly, one of the ways that researchers who have applied the Operation Ceasefire framework have identified which gangs are worthy of focus is to consult the network of relationships among the gangs (Kennedy et al., 1997; Tita et al., 2003b). Gangs that were most central to the landscape of rivalries earned the interest of the intervention. In a similar fashion, individuals who are most central to their respective gang networks may be worthy of focus in Newark.

**Individual-Level Considerations**

Just as Operation Ceasefire determined gang intervention targets based on social position within a network, determining which individuals may be worthy of attention can also be informed by network analysis. Ballester et al. (2004) recently proposed that criminologists should consider identifying “key players” within criminogenic networks through network analysis techniques. Although conceptual in nature, they argue that such a strategy would be more successful than leveraging resources at random, because removing such people from the group has a higher probability of impacting the aggregate level of crime in which the group collectively engages. Whether one agrees with this sentiment or not, the notion that policy and intervention should take social position within a street gang into consideration is not a difficult or controversial premise. Indeed, an individual-level approach, perhaps one that uses the “pulling levers” tactic, may be an appropriate strategy (Kennedy, 1998).

In articulating the pulling levers notion, Kennedy (1998) argued that chronic offenders are vulnerable to criminal justice sanctions because their behavior creates certain levers, such as outstanding warrants. With such a strategy, individuals who are deemed most problematic are subject to the streamlined, collaborative tools and power of various criminal justice agencies, including police, probation and parole, prosecution, and the Department of Corrections, among others. Such people are not subject to increased criminal justice sanctions, per se, but to established and valid sanctions that rarely work in a cohesive, collective fashion. It is also worth noting that the network analysis potentially nominates certain people for social service intervention. In particular, gang members in the periphery of the networks may be persuaded to abandon gang life in return for needed employment training, educational training, and skills training (see, for example, Tremblay et al., 1996).

Perhaps the most methodical and interesting choice of individuals for
strategic focus are the "cut-points." To review, cut-points are the sole connection among individuals or groups of individuals. Interestingly, the position of cut-points has garnered attention outside of criminology. Indeed, Burt (2004), writing about social capital and brokerage in business transactions, proposed that people who act as cut-points within business networks receive certain rewards because of their position: "the argument is that opinion and behavior are more homogenous within than between groups, so people connected across groups are more familiar with alternative ways of thinking and behaving..." (pp. 349–350).

At a basic level, given the importance of "communicating the message" within the focused deterrence of the Operation Ceasefire framework (see Chermak and McGarrell, 2004; Kennedy, 1998; Kennedy et al., 1997), the cut-points become important. They are the sole associations among people or groups of people. Thus, they may be ideal contagion agents for a deterrence message that states that the rules of the game have changed. Gladwell (2002) recently argued that certain positions within a social network are integral to the spread of communication and trends. With this in mind, an early crucial step—making the population of focus aware of the intervention—can take advantage of the network analysis by directing resources at the cut-points.

Applying the "pulling levers" approach to the cut-points is also an avenue worthy of consideration. Impacting them would potentially have an individual effect as well as further disorganize the gang network. To be clear, if these individuals are removed from the active gang network, the sole connection among individuals or groups of individuals disappears. Certainly, if one abides by the tenets of differential association and social learning theories, the more cohesive a criminogenic network is, the more likely its members are to engage in criminal activity (Akers, 1998; Haynie, 2002; Sutherland, 1947). Therefore, if one has the aim of keeping the street gangs relatively disorganized, addressing cut-points may be an appropriate avenue. In other words, although the manner whereby researchers highlight "key players" is open for debate (see Borgatti, 2003), this is a clear possibility and one that deserves attention.

With this in mind, focusing on the cut-points in Newark within a "pulling levers" strategy is a reasonable enterprise. As Kennedy (1998) notes, chronic offenders make themselves vulnerable to various criminal justice sanctions because of their behavior. Their past and present criminal actions create levers that various criminal justice agencies have the potential to pull to manage the person's behavior. Of the 49 cut-points identified across gangs in Newark, 17 are under active parole or probation. In short, they are susceptible to increased attention by criminal justice personnel. Again, the benefit here is that the intervention not only impacts individual serious gang members, but it may also impact the general structure of the
gang. Before proceeding down this pathway of focusing on cut-points, one would be wise, both ethically and methodologically, to uncover their nature because such information may help to shape the sanctions. Indeed, some people may be narcotics dealers, some may be weapons dealers, some may be particularly social individuals, or some may merely be subjects of circumstance.

One should remember that proceeding with an intervention based solely on the information emerging from the network analyses would be unwise. It is not illegal to be a gang member nor illegal to associate with them (unless that is part of parole or probation stipulations). Instead, such data must be one strategic tool in combination with other pieces of information, such as criminal history and criminal justice supervision status. Although understanding the organizational nature of the street gangs holds empirical and policy importance, it is also vital to know if this information helps to understand the criminal behavior of gang members. A comprehensive strategy (see the OJJDP comprehensive gang model by Spergel et al.) should pool as much information and analysis as possible to shape a clear strategy that encompasses social service intervention and law enforcement suppression.

Finally, it is worth noting that simply having the information on associates has utility. In their replication of Operation Ceasefire in Hollenbeck, Tita et al. (2003b) made reference to the LAPD’s use of “gang books.” When responding to incidents of violence, the police would consult books based on the data analysis that detailed the history of the respective gang and their points of vulnerability. In a similar fashion, law enforcement could use the information on the social networks (which they generated) in the course of an investigation. For example, during data collection, one gang member in the database was suspected of murder, but Newark police could not locate him. Having readily available information about his associates across an array of relationships provided them investigative direction, which eventually led to his arrest.

CONCLUSIONS AND LIMITATIONS

Boston’s Operation Ceasefire is often lauded for its outcome success and, as such, has been replicated across multiple cities (Chermak and McGarrell, 2004; Kennedy and Braga, 1998; Tita et al., 2003b). To place

3. This strategy hinges on the notion that greater cohesion in a gang produces more crime (Klein, 1995; see also Maxson et al. in this volume). As such, the true goal is to impact the problems that gangs create, not necessarily the gangs themselves. If further disorganizing local street gangs results in more crime or crime of a more troubling nature, this is certainly not an advisable pathway.

4. Dr. Wayne Fisher of the Police Institute, Rutgers-Newark, generated this suggestion.
this intervention framework over a local gang problem without determining its applicability would be unwise, however. The Boston Gun Project included an in-depth and thorough problem analysis, which fundamentally shaped the character of the intervention strategy. Indeed, research has suggested that proceeding to a gang intervention before adequately understanding the local landscape is problematic and potentially detrimental (Miethe and McCorkle, 1997). Research has also suggested that the organizational character of street gangs is important to take into account when contemplating intervention options (see Klein, 1971, 1995). With these issues in mind, this article suggests that network analysis is an advantageous analytic technique for street gang problem analyses.

Although the previous discussion advocates for the utility of network analysis with regard to gang policy considerations, there are qualifications. The network data presented here are cross-sectional and are only useful for intervention purposes as long as they are current. Purging and updating data have long plagued gang intelligence in law enforcement circles (Katz, 2003). Indeed, detailed information about the changing landscape of gangs and gang members can be difficult to monitor and update in a timely fashion (Tita et al., 2003b). Certainly, however, if one does focus intervention tactics on the aforementioned cut-points, it would be wise to monitor whether they do have an impact on the gang structure. Additionally, it would be productive to determine whether other cut-points emerge as associations and relationships shift, as new members emerge, and as others potentially fall away.

Updating the data also holds importance beyond monitoring the impact of an intervention. To be sure, McDevitt et al. (2003) suggest that the gang landscape of Boston has changed since the genesis of the Boston Gun Project. Accordingly, if Operation Ceasefire were applied today as it was initially, it may very well show no success, underscoring the dynamic nature of gangs. Therefore, it is important to update the data to determine whether the intervention tactics still “match” the problem at hand.

Perhaps the biggest limitation, however, is that the implications of this analysis for policy are just that. The utility of this analytic technique for intervention(s) is, at this stage, primarily hypothetical. Indeed, the true utility of this technique in problem analyses of street gangs will not emerge until the implications are tested through the actual enactment of an intervention strategy. This is a clear future direction for Newark, as well as a potential avenue for other jurisdictions.

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