

What Do We Know About Gangs and Gang Members and Where Do We Go From Here?

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This review provides an opportunity to assess the current state of gang research and suggest directions for its future. There has been a dramatic increase in research on gangs, gang members, and gang behavior since the early 1990s, making this review especially timely. We use Short's three-level framework of explanation to organize the findings of prior research, focusing on individual-, micro-, and macro-level research. Attention is focused on the findings of such research, but we also examine theoretical and methodological developments as well. Drawing from Short and life-course research, we introduce a cross-level temporal framework to guide future directions in gang research.

Keywords gangs; gang members; risk factors; group process; structural correlates

The last two decades have seen exponential growth in the study of gangs, gang members, and the group processes that make gangs a distinctive group. Some suggest (Katz & Jackson-Jacobs, 2004; Sullivan, 2005) that the interest in gangs has grown faster than have gangs themselves, and that the measurement of gang concepts is flawed. Others (Klein & Maxson, 2006; Howell, Egley, Tita, &

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Griffiths, 2011) suggest that the interest in gang research is justified by the growth in the number of gangs, gang members, and gang crime and that these concepts are measured in reliable and valid ways (Decker & Pyrooz, 2010a; Esbensen, Winfree, He, & Taylor, 2001). The mass of research that has accumulated about gang behavior spans a number of substantive areas, including debates on the proper definition of gangs and gang membership, the costs and consequences of gangs, and the efficacy of policies directed at this phenomenon. However, most research has focused on gang behavior.

Short (1985) argued that criminology, along with other fields, has a "level of explanation problem." In particular, he suggested that criminology ignores the extent to which one's implicit "level of explanation" influences the way we create theory and conduct research. By level of explanation, we mean the components (e.g. sociological variables, individual psychological variables, and group process variables) used in the explanation. Short (1985) rightly noted that these levels of explanation inherently pose different types of questions and draw from perspectives that are not easily reconcilable, and he drew from the street gang literature in discussing this lack of agreement. Most gang theories are rooted in either *macro-level* sociological (e.g. social disorganization and sub-cultural norms) or *individual-level* explanations (e.g. self-control, general strain, and social learning). *Micro-level* explanations, alternatively, move past static macro level factors and examine the dynamic processes in social interaction.

In light of Short's arguments, we organize our review of the current state of knowledge on gangs in three areas: (1) individual-level correlates and risks associated with gang membership, (2) group processes in gangs, and (3) macro-level correlates of gangs and gang behaviors. We limit our discussion to gangs in the USA for definitional, conceptual, and practical reasons. There is considerably more information about individual gang members than there is macro-level information about gangs and even less is known about the group processes involved in gangs. The following review reflects the uneven state of knowledge.¹ Short (1985) argued that the most illuminating gang theories and studies have the capacity to address all levels of explanation, and our review is structured with this in mind.

In Figure 1, we introduce a framework that reflects Short's description of individual-, group-, and macro-level research. This is the framework we use to organize the current review and what we propose as a guide for future gang research. Central to this framework are two elements, cross-level interactions and a temporal component. Cross-level interactions are research questions, methods, and data that address at least two levels of explanation. For example, individual behavior is nested in a macro context such as a neighborhood or zip code. Such work is common among those who engage in multilevel research

1. This article is not a study of the impact of gang response programs. Readers interested in that topic can consult the excellent reviews in Klein and Maxson (2006) or Wong, Gravel, Bouchard, Morselli, and Descormiers (2012).

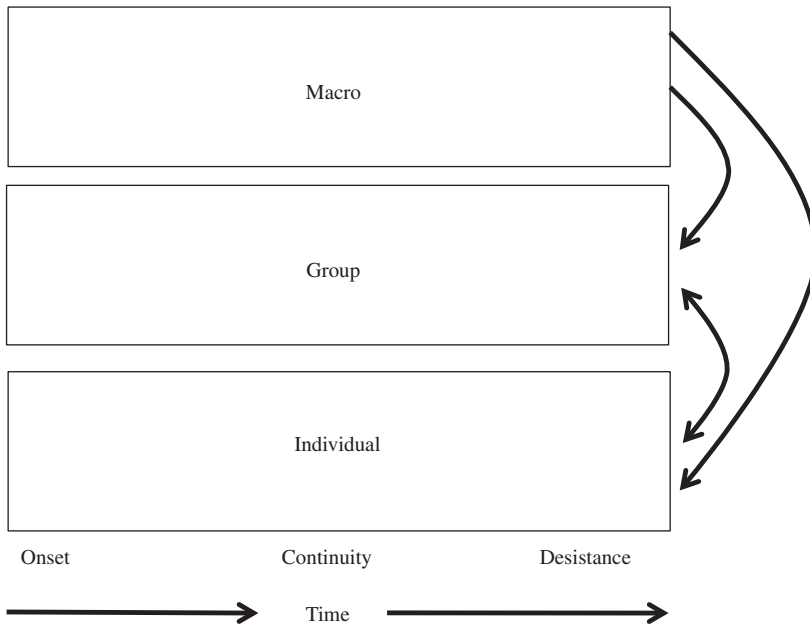


Figure 1 A cross-level temporal framework for future directions in gang research.

designs. This approach reflects the core of Short's arguments, noting that macro-level factors influence group processes and behaviors such as group emergence, delinquency, and clustering of gang activities. The second component of Figure 1 is a temporal dimension that emphasizes onset, continuity, and change across all three levels of explanation. Such a component is rooted in life-course research and is intended to integrate the transitions in gang behavior and membership. We see this framework as a means to organize current knowledge of gangs, gang members, and the factors underlying gang problems as well as future research.

Individual-Level Studies of Gang Members

Members of street gangs are consistently found to be at the nexus of serious crime and violence, with members displaying disproportionate rates of involvement in numerous criminal acts, including gun and weapon possession (Bjerregaard & Lizotte, 1995; Melde, Esbensen, & Taylor, 2009; Watkins, Huebner, & Decker, 2008), drug sales and use (e.g. Bjerregaard, 2010; Gordon et al., 2004), and violence (e.g. Decker, 2008; Melde & Esbensen, 2012; Pyrooz & Decker, 2012). Just as important, gang members are victimized at rates well above that of their similarly situated peers (Decker & Pyrooz, 2010b; Delisi, Barnes, Beaver, & Gibson, 2009; Melde, Taylor, & Esbensen, 2009; Peterson, Taylor, & Esbensen, 2004; Taylor, Peterson, Esbensen, & Freng, 2007; Taylor,

Freng, Esbensen, & Peterson, 2008). Decker and Pyrooz (2010b, p. 129) reported "gang homicide rates are estimated at up to 100 times that of the broader population." The fact that gang members are at considerably higher risk for involvement in acts of crime and violence than their nongang peers appears robust. Less clear is the causal role of gang membership in the genesis of these risky behaviors and outcomes, and how involvement in gangs impacts the life-course development of these individuals.

The advent of numerous panel studies in the late 1980s and early 1990s (e.g. Esbensen et al., 2001; Gordon et al., 2004; Hill, Hawkins, Howell, & Battin-Pearson, 1999; Thornberry, Krohn, Lizotte, Smith, & Tobin, 2003) sparked a proliferation in individual-level research on the causes and consequences of gang membership, leading to a resurgence in targeted, community-based and public health approaches to intervening in the lives of youth at risk for or already involved in gangs (Casey, 2009; Hennigan & Maxson, in press; Holder, 2009; Klein & Maxson, 2006; Melde, Gavazzi, McGarrell, & Bynum, 2011). This growth in gang literature has been documented in a number of excellent reviews (e.g. Howell, 2011; Krohn & Thornberry, 2008; Maxson, 2011), and thus we limit our current discussion to theories applicable to gang membership and research from panel studies that track *self-reported gang involved youth* over time. Other topics are beyond the scope of this review. In this section, we review the latest research on theories and research on individual-level risks for joining street gangs and the consequences of gang membership on life-course development, including a discussion of some of the methodological difficulties associated with this research.

Predicting Gang Membership: What Places Individuals At-Risk?

Criminological theory and research has historically utilized the gang context as a starting point from which to understand crime and delinquency more generally. From the pioneering work of Thrasher (1927) and others from the Chicago School in the early twentieth century (e.g. Shaw and McKay, 1931; Sutherland, 1937) to the seminal theoretical works of Cloward and Ohlin (1960) and Cohen (1955) and the action research models of Klein (1971), Miller (1958), Spergel (1966) and Short and Strodtbeck (1965), prominent criminological theoretical frameworks—including strain/blocked opportunity, differential association/learning, and control theories—have been developed, refined, applied, and tested through the study of (primarily male) street gang members (for an excellent review see Howell, 2011). In sum, this early work detailed the multi-level and multifaceted social structures at the heart of the urban gang scene, and thus highlighted the difficulty in empirically assessing the individual and social processes which combined to influence adolescent experiences with gang life.

Indeed, this tradition of creating and applying theories of crime and delinquency in the urban street gang context continues to this day, and has

become no less complicated. While Vigil (2002) developed his theory of multiple marginalization to explain the existence and proliferation of Latino youth gangs in Southern California, his insights have been applied to other contexts and as an explanation of gang membership for other ethnicities and races (e.g. Freng & Esbensen, 2007; Krohn et al., 2012). Thornberry's interactional theory (1987), which combined insights from both control and learning theories, was not created explicitly as a "gang theory," but has been applied in this context. Similarly, as more recent theoretical developments became staples of criminological discourse, such as Anderson's "code of the streets" (1999)² thesis, Gottfredson and Hirschi's (1990) theory of low self-control, and Laub and Sampson's (2003) life-course theory of informal social control, these too have been applied to and tested in the gang context with varying degrees of success (e.g. Kissner & Pyrooz, 2009; Matsuda et al., 2012; Melde & Esbensen, 2012; Thornberry et al., 2003).

While the use of theory to identify the processes associated with gang joining and the associated mechanisms underlying gang member involvement in delinquency and violence has proliferated, there is still much to be learned and applied in this regard. For instance, much of the theoretical work with respect to gangs has emphasized the factors that work to "push" youth into gangs (Decker & Van Winkle, 1996). Less theoretical attention has been devoted to the attractive functions of the gang, and how these "pull" factors influence individuals prior to and after the onset of membership (but see Venkatesh, 1999). For example, as Felson (2006) pointed out, gang membership is often a publicly displayed identity involving the use of signs, symbols, and clothing to demarcate membership status. Unlike other common social statuses adolescents and young adults put on display, the goals associated with the common signs and symbols of gang membership are meant to intimidate others and intimate a penchant for crime and delinquency, especially violence (Felson, 2006). Thus, an explicit goal of gang membership is to change how others view and treat individual members. Our understanding of the individual-level effects of this identity transformation, however, remains limited.

A natural extension based on this reality, for example, is through a more explicit incorporation of symbolic interactionist theories of crime and delinquency into gang work (e.g. Matsueda & Heimer, 2004) given the focus such theories have on reflected appraisals of self. The advantages of applying a symbolic interactionist framework to the individual causes and consequences of gang membership are many. For instance, within a panel framework one could examine how individuals view themselves in the context of others, such as their peers, family, and significant others (e.g. teachers, employers, and police), including how this might change across the life course, from pre-gang through post-gang time. Such reflected appraisals may be useful in understanding not only the onset of gang membership, but may also shed light on processes associated with persistence and desistance, as youth who fail to achieve

2. It is important to note that Anderson (1999) avoided using the term "gang" in his book.

their desired social (e.g. status enhancement, notoriety, and respect) or economic goals through gang membership may be likely to leave the gang rather quickly, as has been noted in many of the prominent panel studies involving gang youth. Such a theoretical model could also highlight the potential differences in the experience of gang involved youth across different gang types and different gang contexts. For instance, the manner in which local community residents, peers, and family react to a youths' gang identity may depend on the local history of gangs and/or the type of gang (e.g. traditional vs. specialty) youth are involved with, and this may have profound implications with respect to individual gang members. In all, if gang membership is driven by both "push" and "pull" factors, both should be evident in theories of gang membership and gang member behavior.

Much of the longitudinal gang research in the last 20 years, however, has ceded any devotion to a singular theoretical model or the advancement of criminological theory, and instead utilized more generic causal models. This could be due to several factors, including the complicated mix of theoretical traditions implicated as driving the formation and continuation of gangs, the resources needed to collect the data required to adequately test or advance the work emanating from early gang work, or the policy driven focus of much gang research in the 1990s in response to the sharp rise in homicide rates nationwide. Our point is that recent research has focused heavily on statistical prediction, identifying the factors that place youth at risk for gang membership as well as isolating the effects of gang membership from those of rival factors. As we review below, this research produced important insights into gang membership, but some might argue that this movement has come at the expense of advances in theory.

With respect to risk factors for gang membership, this literature routinely utilizes developmental domains—such as individual, family, school, peer group, and community (e.g. Howell & Egley, 2005)—to organize variables that are used to predict a number of antisocial outcomes (e.g. delinquency and gang membership). Reviewing risk factors by domain is advantageous due to the nuanced measurement of individual components of these developmental domains across studies, as well as the failure of some studies to measure risk in each of these categories. As Howell and Egley (2005) suggested, longitudinal studies of risk factors associated with gang membership appear to confirm that risks in any of these domains can lead to an increase in the odds of later gang membership. Maxson's (2011, p. 165) review of this literature concluded that the risk factors supported across studies were: (1) experiencing a critical life event such as an injury or disrupted social relationship; (2) evincing antisocial tendencies, though not necessarily delinquent (e.g. risk taking and impulsivity); (3) having pro-delinquent attitudes; (4) low levels of supervision by parents; and (5) associating with delinquent peers. Overall, this body of literature suggests three things: (1) there are no risk factors that uniquely predict the probability of gang membership, as the same factors that predict gang membership also predict other antisocial outcomes (see also, Esbensen,

Peterson, Taylor, & Freng, 2009); (2) youth who eventually become gang involved routinely possess a relatively high number of risk factors prior to gang membership; and (3) the accumulation of risk factors, as well as risk amassed across domains is the best known way to identify those most likely to become gang involved.

There are a number of issues that may influence our ability to differentiate high from lower risk individuals that are still unclear in the literature. For example, the gang risk factor literature is not clear on many dimensions of risk, such as:

- *Intensity* (e.g. is the association between risk and gang membership nonlinear? what is the appropriate cut point for being considered at-risk?);
- *Interactions* (e.g. are some factors only “risky” in combination with other factors?);
- *Hierarchy* (e.g. what risk factors are most important for prediction?);
- *The influence of time of risk in the life course* (e.g. are risk factors age-graded?);
- *Order* (e.g. is the effect of accumulated risk factors impacted by the order in which these factors are accumulated across the life course?)

In other words, the functional form of the association between risk factors and gang membership is uncertain. Use of parametric methods of prediction, such as logistic regression, which is widely used in ascertaining individual predicted probabilities of antisocial outcomes or exposures (e.g. gang membership), assumes that the association between risk factors and outcomes such as gang membership are both linear and additive (McCaffrey et al., 2004)—assumptions that have unknown validity. Models with such assumptions may not offer adequate precision in identifying future gang members, and thus if our decisions to identify youth as high risk for gang membership are based upon statistical prediction rules derived from such models, decision-makers may systematically misidentify their targeted population. In other words, there are likely key interactions and nonlinear associations that can be identified to significantly improve our ability to identify individuals at-risk for gang membership. Identifying the functional form of these relationships should be a priority among gang researchers, and the questions posed above, in combination with theory, are productive starting points.

The Consequences of Gang Membership

Much of the recent work in estimating the impact of gang membership on both prosocial and antisocial behaviors (e.g. drug use, violence, and victimization; income and school completion) has focused on isolating the causal effect of involvement in gangs from criminal propensity more generally. As the previous section highlighted, gang members appear to have a number of social deficits

that place them at risk for antisocial outcomes, irrespective of their membership in gangs. Thus, there is a chance that gangs have little or no impact on their members above what would be expected given the presence of these risk factors (e.g. criminal propensity). Thornberry and colleagues (Thornberry, Krohn, Lizotte, & Chard-Wierschem, 1993) described this issue in great detail, and provided the selection, facilitation, and enhancement frameworks to account for the potential influence—or lack thereof—of gangs on life-course outcomes.

According to the logic behind the *selection* model, criminal behavior is the product of relatively stable differences in criminal propensity between individuals (e.g. Gottfredson & Hirschi, 1990). From a life-course perspective, the selection model is similar to the notion of population heterogeneity (Sampson and Laub, 1993), where youth already on a trajectory including antisocial behavior are prone to gang membership. If true, the association between gang membership and delinquency would best be described as spurious, as a common set of factors explains both delinquency and gang involvement. Alternatively, the *facilitation* model is consistent with social learning (e.g. Akers, 2009) and opportunity perspectives (e.g. Osgood & Anderson, 2004), whereby gang membership influences attitudes, norms, and routine activities associated with delinquent behavior, which in turn increases individual criminal involvement. If this model was supported, we would expect that, absent gang membership, youth would continue to behave in ways akin to their peers. Lastly, the *enhancement* model combines the two models, and posits that while gang involved persons had characteristics that differentiated them from others before involvement in these groups, gang membership serves to alter their behavioral trajectory in a manner not predicted by these noted differences (Thornberry et al., 1993, 2003).

The problem with isolating such causal effects relates to the necessary reliance on observational data, as gang membership is not subject to experimentation. Thus, individuals can only be observed based on the “exposure” status in which they self-select, and thus there is a missing data problem, as there is no readily observable counterfactual with which to make comparison (Rosenbaum & Rubin, 1983). The question, therefore, remains: what would each person’s behavioral outcome been had they not participated in a gang? This is similar to the problem associated with studying marriage (Sampson, Laub, & Wimer, 2006), employment (Apel et al., 2007), and many health treatment programs, where a necessarily self-selected state or exposure is of particular concern with respect to an outcome of interest (e.g. criminal involvement, future earnings, and drug use).

To address this concern, researchers have increasingly utilized random effects models (e.g. Gordon et al., 2004; Melde & Esbensen, 2012; Sweeten, Pyrooz, & Piquero, 2012; Thornberry et al., 2003), matching methods (e.g. Delisi et al., 2009; Gibson, Miller, Jennings, Swatt, & Gover, 2009; Melde & Esbensen, 2011), and/or trajectory models (Haviland, Nagin, & Rosenbaum, 2007). These methods all attempt to control for stable and/or dynamic sources

of selection in order to produce more accurate estimates of the impact of gang membership on pertinent outcomes. While these methods are by no means a panacea with regard to causal inference (see e.g. Bjerk, 2009; Freedman & Berk, 2008 for cautionary notes), when utilized correctly they appear to produce more reliable estimates of the true gang effect.

Overall, findings from numerous studies in a variety of contexts appear consistent with the enhancement framework of gang member delinquency and victimization. That is, findings which support the enhancement framework have been reported in panel studies of respondents in the USA (e.g. Bjerk, 2009; Delisi et al., 2009), Norway (Bendixen, Endresen, & Olweus, 2006), China (Pyrooz and Decker, 2012; Webb, Ren, Zhao, He, & Marshall, 2011), and Canada (Gatti, Tremblay, Vitaro, & McDuff, 2005; Haviland et al., 2007). As Krohn and Thornberry (2008, p. 147) suggested, "perhaps the safest conclusion to draw is that there is a minor selection effect, a major facilitation effect, and no evidence consistent with a pure selection model."

In one of the longest studies of the impact of gang membership in adolescence on later life outcomes, Krohn, Ward, Thornberry, Lizotte, and Chu (2011) found that longer periods of gang membership was associated with more deleterious outcomes in late adolescence and early adulthood. In particular, the number of years in a gang in early adolescence was associated with "precocious transitions" (e.g. teenage parenthood and dropping out of school) in late adolescence, that in turn were related to economic hardship and family problems in early adulthood. Together, these problems in early adulthood were significant predictors of continued criminal involvement and arrest (Krohn et al., 2011). Research by Levitt and Venkatesh (2001), utilizing a high-risk sample from Chicago, came to a similar conclusion with respect to the long-term effects of gang membership on education and legal income in early adulthood, and suggested that "youthful gang involvement has a long-run impact on an individual's economic trajectory" (p. 83).

While much research has focused on predicting who is most likely to become gang involved, and the negative short- and long-term consequences of involvement in these groups, a more diverse set of research questions and methods are needed. Drawing on Short's (1985) three levels of explanation (see Figure 1), research on gang members needs to better document and understand how micro- and macro-level contexts influence individual members. For example, Bellair and McNulty (2009) utilized multilevel modeling to demonstrate that neighborhood disadvantage strengthened the association between gang membership and violent crime, especially for gang members involved in selling drugs. Hall, Thornberry, and Lizotte (2006) also noted the potential for neighborhoods to influence the effect of gang membership on delinquency and violence. Evidence presented by Peterson, Miller, and Esbensen (2001) suggests that the sex composition of gangs influences the behavior of individual members. This short list of works examining the influence of macro- and micro-level factors on individual behavior, however, suggests much more work needs to be done in this area, especially given the recent evidence by Zimmerman and

Messner (2010, 2011) on the differential effects of gender and delinquent peers on adolescent deviant behavior across neighborhood context.

Beyond predicting who is most likely to become gang involved, the evidence from Krohn and colleagues (2011) discussed above suggests we should also examine what places youth at risk for stable, longer term gang membership, as longer periods of gang membership may correspond to more deleterious short- and long-term outcomes. Thornberry et al. (2003) suggested that the risk factors associated with initial gang membership are not systematically associated with the length of gang membership, and thus research should identify other attributes that might aid in this regard. Pyrooz, Fox, Katz, and Decker (2012) recently examined this issue, and found that "gang embeddedness"—a concept that extends the work of Hagan (1993) and taps individual immersion in gang—was able to differentiate short- and long-term gang membership. More evidence is necessary to draw strong conclusions about the correlates of stable membership, and will require panel data containing multiple years of data.

Advancing Individual-Level Gang Research: Methodological Challenges

The use of self-report survey data with community- and school-based samples has been a staple of panel studies of gang youth. The inherent confounding in temporal ordering associated with such data collection strategies, however, has limited our ability to provide efficient estimates of the impact of gang membership on behavioral outcomes. This problem is exacerbated by the common finding that the average youth gang career in panel samples appear to last less than two years (see Esbensen & Huizinga, 1993; Hill, Lui, & Hawkins, 2001; Peterson et al., 2004; Pyrooz, Sweeten, & Piquero, 2012, p. 23; Thornberry et al., 2003). The point and interval format of these surveys requires youth to report on behaviors that they have been involved in over the course of some predetermined period of time in the past (e.g. ever; last 3, 6, or 12 months), along with their current attitudes, opinions, and gang membership status. Using this approach, measures of self-reflected attitudes, thoughts, emotions, and group membership taken at the time of the survey (point measurement) are inherently misaligned with interval measures of behavior, which is necessarily retrospective.

Given this reality, it is difficult to estimate the effect of gang membership on behavior *while in a gang* in a manner that is not confounded by *time not in the gang*. For instance, if onset of gang membership for person *i* is measured at wave 2, yet they report having left the gang at wave 3, measures of the behavioral outcomes of gang membership are potentially confounded by the inclusion of nongang time no matter whether one uses the wave 2 or wave 3 measures of behavior. This is especially the case if the lag between waves of data collection is longer than the interval used in the behavioral measure (e.g. one-year lag in data collection and a six-month recall period for the behavior in question), as gang membership may have ceased prior to the time included in the interval

measure. Therefore, the typical use of lagged measurements (e.g. time 3 behavioral outcome regressed on time 2 measure of group association controlling for sources of confounding/selection measured at time 1) may not adequately represent the influence of gang membership on such outcomes, even in panel studies. In the case of gang membership in the above example, the contemporaneous measures of behavior at wave 2 allow one to be relatively certain that the recall period for the behavior in question includes at least some time in the gang, and thus may more adequately represent the effect of gang membership if sources of selection are adequately controlled through wave 1 observed measurements. Either way, the use of this traditional strategy is limited by the confounding of gang and nongang time for what is likely a substantial proportion of gang involved respondents. In fact, this inherent misalignment in point and interval measures was a central component of the exchange between Gibson and colleagues (2009) and Ozer and Engel (2012), wherein the limited ability to decipher gang from nongang time, while properly controlling for selection effects, diminished the ability of either study to isolate the effect of gang membership on victimization.

Overall, the growing prevalence of panel studies in the study of gang membership has greatly expanded our understanding of the risks associated with these groups. Research has uncovered a number of risk factors associated with later gang involvement, as well as a number of short and longer term consequences of being a gang member. Our knowledge base is far from complete, however. To move this area of research forward, criminologists must improve upon both theory and methods to overcome the noted limitations. Fortunately, technological advancements affecting the manner in which we can collect (e.g. cell phones and the Internet) and analyze data are sure to improve our understanding of gang membership in the life course.

A Micro-Level Focus: Group Processes in Gangs

A good deal of gang research is built on the premise that gangs and gang members are qualitatively different from other groups and individuals involved in crime (Hughes & Short, 2005; Klein, 1995; Klein & Maxson, 2006; Melde & Esbensen, 2012; Thornberry et al., 2003). Identifying that distinctiveness is a key task for gang research. For example, what is it that prompts a group of gang members with common demographic and social characteristics to offend or act in concert at some times, but not at others? The answer to this question can be found in empirical and conceptual work done at the micro level. Micro-level explanations focus on dynamic social interactions and processes (McGloin & Decker, 2010). This involves moving away from explaining gang crime rates or individual criminal histories to understanding the behavior present at gang events, episodes, or processes, like joining the gang, leaving the gang, becoming involved in a gang role or taking part in gang crime. After all, background factors (macro level) are static and slow to change, and most individual factors also are more or less static

and cannot explain or account for variations in the day-to-day activities of gang members. As Wright and Decker (1996) note demography is not destiny, and a social process is necessary to account for the reasons why individuals and groups are motivated to act. This is particularly true of gangs.

The Role of Group Process

Maxson and Esbensen (2012) point to the role of group identity and a normative orientation towards criminal involvement and status attainment that work together to produce group process. They note that there is a dearth of empirical research in this area, highlighting the failure to use ethnographic work that points to the processes that make gang membership distinctive. It is important to note that group process affects many stages of gang life, including gang joining, initiations, and the generation of the oppositional culture that produces a climate that fosters a readiness to engage in violence. To date, however, most attention to group process has been focused on its role in generating crime, particularly violence (Melde & Esbensen 2012; Pyrooz & Decker, 2012), and has not assessed other criminal and noncriminal activities. The lack of attention to group process is somewhat ironic, since group process is typically included as part of the definition of a gang. For example, Maxson (2011) notes that the widely adopted Eurogang definition of a gang includes group process as a key element, and that a part of that group process and identity is involvement in illegal activity. But in most cases, the content of that micro-level process is unspecified. In this way, the key distinguishing feature of a gang is a black box.

Group process is important because it creates solidarity and strengthens ties among gang members. This solidarity is a key factor in the retaliatory nature of gang violence, as it produces expectations and interactions that create a collective identity among gang members. Thus, an attack on one gang member is an attack against all members, a reflection of the reciprocity that is characteristic of many groups, especially gangs. However, this solidarity does not extend to all facets of gang life, as the ties seem to be specific to violence. Some of the specificity is clearly due to the excessive masculinity and posturing that are part of the normative belief systems held by gang members, which continue to emphasize many of Miller's (1958, 2011) focal concerns, particularly toughness, strength and trouble.

Group process is also important because of its bearing on organizational structure, another topic about which all too little is known. There is a conceptual link between group process and the organizational structure of the gang. Group process is one of the elements that keep the gang together, helping to solidify bonds between members and thereby support the organizational structure of the gang. In this way, the normative side of gangs (belief systems, affective ties, and symbolic aspects of membership) helps to structure gang relations and thereby gang structures. The dominance of normative aspects of

the gang may be one reason that gang organizational structures fail to reflect the corporate, more instrumentally ordered structures of formal groups, particularly organized crime groups. The organizational structure of gangs in turn influences gang behaviors and thus group process, as gang organization refers to the "degree to which a group effectively and efficiently coordinates and carries out activities" (Pyrooz, Fox, et al., 2012, p. 85). Gangs with instrumental-rational organizational structures are able to accomplish collective goals and complete discrete tasks, many of which are criminal; gangs with informal-diffuse organization encounter difficulties in achieving criminal goals and establishing stability (Decker, Bynum, & Weisel, 1998).

Perhaps the best example of the micro level of explanation is Short and Strodbeck's (1965) work on youth gangs in Chicago. Relying on an array of data sources, including observations by street workers, they initially set out to investigate individual and macro-level explanatory factors. However, it became clear over the course of the project that group processes were responsible for producing most of the delinquent behavior. For example, they discovered that aggression between gangs was often instigated by gang leaders who believed their status was tenuous or under threat. In the end, this research revealed that macro-structural and individual variables intersect at the process level, which ultimately produces behavior. In addition, these social interactions have consequences for future interactions, since behavioral processes can impact and transform the group culture.

Other gang research underscores the utility of focusing on social processes. For example, Whyte's (1943) study of gangs in Boston revealed that while neighborhood factors and individual characteristics were important, social processes were the most important explanatory mechanism for group behavior (and the behavior of its members). Indeed, social interactions defined the boundaries of the gangs, the links among gangs and other groups, as well as the cohesion of the gangs and the individual roles within the gangs. Although Thrasher wrote at length about the role of macro-level factors (e.g. urbanization and poverty) in producing and supporting street gangs, he also focused his discussion on interactions and mechanisms of internal control that characterized gangs and gang behavior. Indeed, his discussion of other forms of collectives, such as mobs, and social protests, illustrates his emphasis on group process. This line of work is also reflected in Walter Miller's (2011) work on fighting gangs in Boston.

Despite the demonstrated vitality of this approach evident in the "Classic" ethnographies (Decker & Pyrooz 2012), there was a dearth of attention to group process until the last two decades. Vigil's (1988) discussion of multiple marginality as the driving force behind the emergence and persistence of Chicano gangs also recognized the importance of group processes, namely through street socialization. Like Short and Strodbeck, Vigil recognized the interplay between macro- (e.g. low SES and social disorganization) and individual-level factors (e.g. self-identity) in supporting these processes and that in reality they are difficult to disentangle when attempting to understand gang events and the behavior

of gang members. As Vigil (1988, pp. 42-43) stated: "socialization to cholo ways, especially for those who go on to become gang members, is strongly influenced by family life and peer groups in interaction with the schools and law enforcement agencies." This socialization creates the shared normative expectations identified by Maxson and Esbensen (2012), and builds group solidarity. These two processes work together to produce a climate in which individuals behave differently in a group context than they would as individuals. In this sense, the gang serves to enable behaviors that individuals would be loath to engage in without the presence of the gang and its micro-level processes.

Group Process and Gang Behavior

It is clear that micro-level processes are at work in many aspects of gang behavior. Both joining and leaving a gang are processes that either escalate or diminish over time, helped along by the actions of the group. The initiation of gang members by being "beaten in" to a gang is clearly best understood as a group process that reflects the influence of group norms and collective behavior, not unlike that documented in other groups (e.g. fraternities and military). Leaving the gang also reflects elements of group process, whether it is through being "beaten out" or simply by walking away. Recent work on gang desistance (Pyrooz & Decker, 2011; Pyrooz, Decker, & Webb, 2010; Pyrooz et al., 2012) demonstrated the role of the symbolic bonds between members (ties) in understanding how the process of departing from the group occurs. As with entering the gang, the power of the group over the individual determines the method of leaving the gang, and individual levels of gang member embeddedness determines the speed of leaving the gang. Even after leaving the gang, enduring social and emotional ties to the gang had an impact on the risk for violent victimization.

The influence of gang migration is particularly well suited to micro-level explanations. Whatever the process driving migration may be, a popular viewpoint (Howell, 2007) is that gang growth is not a product of indigenous, local gangs, but rather due to the importation of people, culture, or other factors. For example, one manner in which migration may underlie gang proliferation is if gang members start satellite branches of their current gang in new locations, perhaps with an entrepreneurial goal in mind. Maxson (1998) investigated this issue by querying law enforcement personnel in all cities with populations greater than 100,000 people, as well as in additional towns and cities that were likely to have street gangs. Of the 1,000 cities that responded, over 70% reported some form of gang migration. However, most of them relocated for social reasons such that "cities in which migration provide[d] the catalyst for indigenous gang formation [were] the exception rather than the rule" (p. 7). This law enforcement survey is consistent with findings from research that relies on gang member interviews, which also suggested that migrant gang members are not the primary sources of gang proliferation (see Maxson, 1998; Skolnick, 1990).

One of the most glaring shortcomings of the current state of gang knowledge has to do with changes in gangs and gang members. Most current research depicts them as “flat,” and static. Clearly this is not the case, a point driven home by ethnographies and network studies that document the social processes and interactions among gang members, as well as between gang members and the community. Venkatesh (1997) provides an excellent example of such an approach in describing the transition of a gang from a conflict-based group to one that assumed a more corporate structure that was organized around economic functions. Venkatesh documents the role of group process in the gang to constrain neighborhood violence, because violence beyond a certain level was bad for business. Without this micro level of explanation, Venkatesh’s capacity to fully describe this evolution would have been severely limited. Similarly, Miller’s (J. Miller, 2001) interviews with female gang members in St Louis and Columbus (OH) captured in-depth information about gender identity, gang membership and related social processes. Although individual-level and macro-level factors were important aspects of the decision to join a gang, her focus on the social processes within the gang provided unique insight into the gender dynamics at work in a criminogenic group. Indeed, the micro-level interactions highlighted gender inequality and showcased how the process by which a girl entered the gang impacted how others viewed her.

Decker (1996) argued that gang violence is the result of expressive group processes. He developed a conceptual framework to explain gang violence that drew from theories of social movements in describing the escalating steps in gang violence. Based on interviews with gang members in St Louis, he detailed a process whereby “threats” from symbolic enemies sparked an escalating interaction, which resulted in violence and retaliation. In support of this premise, Decker and Van Winkle (1996) found that most gang homicides were spontaneous, expressive, or retaliatory in nature, and thus include an important element of group process. Support for this perspective can be found in the works of Klein and Maxson (1989) in Los Angeles, Papachristos (2009) in Chicago, and Pizarro and McGloin (2006) in Newark. It is clear from this research that micro-level group processes enable members to do things—particularly engaging in violence—they would not normally do. The influence of the gang to compel individuals to engage in what appear to be nonrational behaviors (going on a mission into enemy territory, being beaten into a gang by a large number of individuals, putting themselves at risk by wearing certain colors [but see Mell, 2011]) must be significant to overcome doubts about the prudence of such behavioral choices on the part of members.

A Framework to Understand Group Process and Gang Violence

Based on this work, we offer a conceptual framework that captures the micro processes described above (Decker, 1996; Decker & Pyrooz, 2010b). Figure 2 identifies the social processes that generate violence between gangs. The bonds

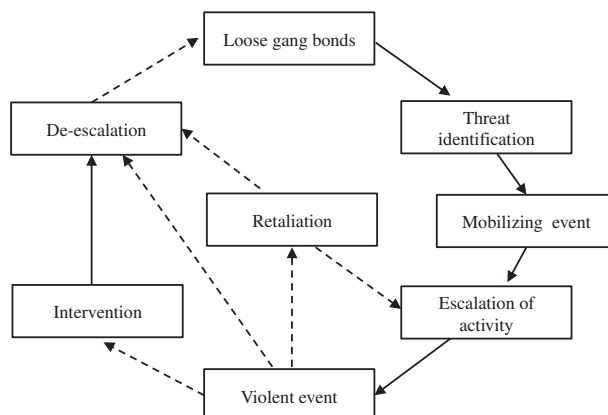


Figure 2 The cycle of gang violence.

Note. Adapted from Decker (1996) and Decker and Pyrooz (2010b). Solid lines represent expected pathways; Dotted lines represent potential pathways.

between gang members are built on a common normative orientation and shared activities. These bonds provide a platform from which violence can be launched for what looks to others to be a “trifling” event, such as an insult, a look, or painted over graffiti. Papachristos (2009) underscores the role that reciprocity and dominance play in this process. Citing the “norm of reciprocity,” Papachristos argues that gang members are obliged to respond to threats, particularly symbolic threats to the gang, because of the importance of status to gang members. Their identity is based on a view of dominance that is shared by gang members, a possession as real and as important to the collective as any material possession. In short, Papachristos argues that the murder of a gang member has to be generalized to all members because of the shared normative orientation, group identity, and ties among gang members. Thus, gang violence is collectivized among members of the gang, and the victimization is “shared” by all members. This group process serves to provoke additional violence. Because gang members live under a series of threats (Decker & Van Winkle, 1996) from rival gangs, the police, and even their own gang, the event that mobilizes an initial act of gang violence and subsequent retaliation need not be an overt or substantial threat. It may be a rumor, a social slight, or misperception. The contagious nature of gang violence (Kirk & Papachristos, 2011; Zeoli, Pizarro, Grady & Melde, 2012) can be seen in the links between initial acts of violence and retaliatory violence; one act can set off a storm of retaliations by participants who may not even be aware of the initial precipitating incident.

To date, the reliance on ethnographic fieldwork for information on the micro-level interactions of gangs and their members is surely part of the reason we have had relatively little research on group process in gangs. The use of social network analysis, however, offers a viable alternative to these methods, as it inherently focuses on the micro level of explanation. While the use

of this technique is growing, it is not conceptually or empirically new to criminology (Haynie, 2001; Krohn, 1986; Sarnecki, 2001). Papachristos (2011), however, pointed out that criminologists have been slower to adopt the methods of network analysis than sociologists or public health researchers. In addition to Papachristos' work (2009, 2011), there has been a recent surge in interest in this technique among criminologists, as researchers in this field began to recognize the strengths of these methods to study the group nature of crime prevalent in organized crime groups and among youth groups. Several researchers argue that criminal enterprises—such as drug sellers, organized crime and gangs—are best described as dynamic social networks of interacting individuals rather than hierarchical, static groups (Eck & Gersh, 2000; Morselli, 2009).

Papachristos, Braga, and Hureau's work (2012) illustrates the possibilities of social network approaches. They studied gunshot victimization in two of Boston's Cape Verdean neighborhoods in 2008-2009 based on a "friends'-friend" respondent-driven sample of known gang members using police field information observation cards. They found that more ties to known gang members increased victimization risk by 66% and that the protective influence of social distance from gunshot victims leveled off slower among gang members.

Fleisher (2005) has advocated for combining social network analysis with fieldwork. The use of multiple methods of study would help to expand our knowledge of individuals and groups as well as illuminate the social processes in gangs that are assumed but rarely studied. Such a combination of methods would also help to make studies more comparable. While some argue that gangs are unique to their settings and reflect local circumstances (Howell & Lynch, 2000; Klein, 1995), there is evidence of consistency in gang characteristics and impact across cities. As difficult as it is to conduct such cross-site studies at the macro or individual level, the design of studies that rely on micro-level processes is considerably more difficult. For example, does the change in gangs over time follow the pattern described by Thrasher (1927) in the evolution of playgroups to gangs to organized crime? Merging network analysis with a focus on gang micro-processes would expand our knowledge of gang behavior considerably.

Another leap forward in multimethod approaches to the study of gangs would be a combination of network approaches with GIS, an approach demonstrated in the work of Tita and Radil (2011), and Brantingham, Tita, Short, and Reid (2012). Tita and Radil (2011) examined the intersection of gang territory and a network analysis of gang rivalries in Los Angeles. They refer to this approach as a "spatially integrated" (p. 540) criminology. Their work demonstrates that gang rivalries are central to understanding gang violence, linking gang networks to gang space. Brantingham and his colleagues analyzed 563 intergang shootings in a single police division (Hollenbeck) in Los Angeles. Integrating a macrocomponent (gang boundaries), a measure of group process (what they label "competitive interactions"), and time they find that gang shootings lead to forming territories by gangs. Their work represents the most successful integration across Short's three levels of measurement to date. The

Tita and Brantingham research also validates the work done by Papachristos (2009) in Chicago, illustrating that gang violence is not fully contained within traditional gang territory. Perhaps the difficulties of such research can be illustrated by juxtaposing two questions about group process and gang violence. Does group process produce gang violence or does gang violence produce group processes? Clearly, the answer to both questions is yes. Unraveling the time order in the relationship between group process and gang violence is complex and requires methods that more accurately measure reciprocal processes. This challenge is similar to the measurement issues noted in the discussion of the functional form of the relationship between gang membership and involvement in delinquency. When these techniques can incorporate a time dimension to show changes in network structure and relationships within geographic space over time, our methods will have caught up to our theories. One promising approach in this direction is the work of Papachristos et al. (2012) that highlights the role or position in the gang that plays in conditioning victimization. When combined with measures of gang organizational structure, this offers a promising combination of survey and network research, and ultimately a better understanding of group process.

Advancing Group-Processes Research

To date, the research that explicitly focuses on micro processes in gangs has been limited in method and scope. Most of this research has focused on the emergence of violence. While violence is a key feature of gang behavior and gang membership, it is but one of many aspects of life in the gang. Understanding other forms of criminal behavior is important to create a fuller understanding of what gangs are and what their members do. The lack of focus on group process in non-criminal behavior among gangs and gang members is an even larger omission from the inventory of gang research. With regard to method, most work examining micro processes has been qualitative in nature. While there has been considerable progress in some of this work, the ability to examine specific hypotheses regarding processes has been missed. Network methods offer a step ahead in this regard; it remains to be seen if the promise in such methods can be supported with good data and theory.

Any future agenda in gang research must include multiple methods and a multiple-level focus. The Eurogang Research Platform has argued for years that school-based surveys should be combined with ethnographies, expert surveys, and the use of secondary data in multiple sites. As Malcolm Klein is fond of pointing out, a study of a single city is a study with an N of 1, thus the need for multiple sites. But calling for studies with multiple methods in multiple sites is easier said than done, or it would have been done long ago. Such research would most likely require substantial external funding, a roadblock in any times but an even greater impediment today.

Macro-Level Research on Gangs

Macro-level theory and research on gangs examines aggregate gang behaviors and processes in geographic areas, using neighborhoods, communities, cities, counties, and even countries as units of analysis. The motivation for this research is to describe and explain the unequal distribution of gangs, gang members, and gang activity in time and space. Classic gang research—works prior to the 1970s (e.g. Short & Strodtbeck, 1965; Thrasher, 1927; Whyte, 1943)—had a macro-level orientation, and was largely focused on the cultural and structural factors contributing to gang emergence. Much like the field of criminology as a whole, gang research relies heavily on data from surveys of individuals. Even the resurgence of neighborhood-level research over the past quarter-century has not resulted in considerable attention toward gangs, with notable exceptions. This section of the review focuses on these exceptions, examining both classic and contemporary theory and research on gangs and gang behaviors at the macro level. We begin by laying out the issue of the emergence of gangs, as it provides the foundation for macro-level theory and research on gangs and gang violence.

Gang Emergence in Time and Space

In the first half of the twentieth century, documentation of gang emergence and persistence was confined to a few large cities, such as Boston, Chicago, Los Angeles, Philadelphia, and New York City. As the century progressed, several researchers traced the expansion of gangs to new cities and states including additional Midwest and west coast sites (Curry, Ball & Decker, 1996; Klein & Maxson, 2006; Spergel & Curry, 1990). Spergel and Curry (1990) classified cities according to whether gang activity emerged prior or subsequent to 1980, with the former labeled “chronic” and the latter “emergent” gang cities. The question driving public interest in gang emergence was whether gangs were “franchising” into new cities to secure territory for drug distribution. While we addressed this question as group process above, it has important implications for thinking about the emergence and persistence of gangs, and whether these patterns could be reduced to the growing role of gangs in drug markets.

The expansion of gangs in time and space was less about the coordinated movement of gangs than it was about the scattered movement of gang members (Maxson, 1998). More importantly, the appearance of gang migration was more a function of the transmission of gang culture. Media, in the form of music and movies, played a central role in this regard. For example, during an interview carried out by one of the authors in 2011, a black former gang member in Phoenix recalled:

It [the gang scene] got really big when the movie *Colors* came out in the movie theaters, especially for us OGs. That movie showed you how to gangbang. It showed you what was expected of you. There was a big California influence after that.

The gang-related movies and music in the late 1980s and early 1990s provided an international stage to transmit the attributes—clothing, personal styles, and language—of inner city Los Angeles gangs. Processes of cultural diffusion also apply to other cities as well, where the names of Chicago-oriented gang nations surfaced throughout the USA (Starbuck, Howell, & Lindquist, 2001).

There has been increasing concern about the global growth of gangs (Klein, Kerner, Maxson, & Weitekamp, 2001; Esbensen & Maxson, 2012). Some gangs appear to have US origins, with scholarly reports of the Crips in The Netherlands (van Gemert, 2001) and the Latin Kings in Spain (Feixa, Canells, Porzio, Recio, & Biliberti, 2008). Of course, much like in the USA, gang members were not emigrating from the USA to other countries; thus, the larger issue surrounding the geographic emergence of gangs centers more on the importation of US gang culture than it does on the exportation of US gang members. Unlike the 1990s, however, the diminishing online digital divide compounds the global diffusion of gang culture, especially with the advent of personalized social media. Emerging evidence indicates that gangs and their members use the Internet not unlike their peers, with broadcasting gang-related fights and music videos on YouTube being one of them (Decker & Pyrooz, 2011). Of course, this content is disseminated widely and quickly, where a gang-related video recorded and uploaded in Los Angeles can be viewed almost instantly in Copenhagen, DA.

The diffusion of gang culture—via movies, music, or the Internet—does not tell the whole story about the emergence and persistence of gangs in time and space. After all, plenty of adolescents nested within the neighborhoods of cities across the USA and abroad are exposed to this content but avoid forming or joining gangs. Indeed, annual surveys of police agencies carried out by the National Gang Center have shown that throughout a 14-year period (between 1996 and 2009) about two-thirds of cities report limited or no gang problems (Howell et al., 2011). Moreover, only a small number of cities show a post-2000 jump in gang activity. The emergence and persistence of gangs and gang violence generally takes on a “local flavor,” which is why it is necessary to understand the cultural and structural contexts of various macro-level units of analysis across time and space that lead to the emergence of gangs and gang behaviors (Decker, Van Gemert, & Pyrooz, 2009). This taps the heart of our cross-level, temporal framework for studying gangs. For this reason, we turn to theoretical perspectives on the emergence and stability of gang activity.

Theoretical Perspectives on Gangs and Gang Violence

Several macro-level theoretical perspectives guide our understanding of gang emergence and persistence that can be organized according to structural control and structural adaptation theories. These perspectives on gangs align closely with the larger debate surrounding structure and culture—pseudo-cultures, culture as adaptation, and culture as causal—in criminology theory and research (Bursik & Grasmick, 1993; Sampson & Bean, 2006). Here, we concentrate on these theories in relation to gangs, but recognize that purer versions of control and subculture are antipodal based on interpretations of the role, transmission, and persistence of culture and groups such as gangs (e.g. Kornhauser, 1978; Miller, 1958, 2011; Shaw & McKay, 1942). That said, social and economic disadvantage are at the heart of both frameworks, but they depart when specifying the central mechanisms responsible for the emergence of gangs. Importantly, given the broad cultural and structural context, these theoretical perspectives “set the stage” for gang processes and behaviors at lower levels of explanation.

Structural control perspectives hold that gangs are naturally occurring deviant social networks that are a product of a weakened system of social controls in communities. Thrasher’s (1927, pp. 22, 46) classic statements on gangs in Chicago held that gangs are found in the “interstices” of the city and that gangs “integrate through conflict.” Communities that are economically deprived and socially disadvantaged have difficulty amassing the resources to identify and address collective problems (Sampson, Raudenbush, & Earls, 1997). Residential turnover and racial and ethnic heterogeneity increase the social distance necessary to counteract and diffuse the conflicts that serve as the tipping point turning peer groups into gangs. Elevated perceptions of threat and institutionalized conflict create a demand for kinship and protection, with gangs functioning as a major player to fill the void in the market (Adamson, 2000; Suttles, 1972).

Structural adaptation perspectives contend that gangs emerge in response to environmental conditions. Gangs are a product of the limited distribution of opportunity in the pursuit and competition for status and economic resources. Classic structural adaptation explanations of gang emergence emphasized reactions to structural barriers and discrepancies in the means to achieve economic goals (Cloward & Ohlin, 1960; Cohen, 1955). Contemporary explanations discuss earning respect and achieving economic success in a hyper-segregated, post-industrial urban America replete with the instrumentalities of violence (Anderson, 1999; Fagan & Wilkinson, 1998; Hagedorn, 1988; Moore, 1991; Sullivan, 1989; Venkatesh, 2008; Wilson, 2009). Gangs, then, are an adaptation to the social and economic landscape that confers status and economic opportunities—via collective identification and illicit activities—on their constituents. Gangs function as a quasi-institution in such communities, and impact

the daily routines and activities of residents and outsiders through violence, intimidation, and other forms of informal control.

Theoretical perspectives on gang violence emphasize the processes linked to the group process discussed in the previous section. Macro-level explanations of gang violence are consistent with the theoretical statements in the above paragraphs, where it is expected that gang violence would be related to the volume and patterns of gang emergence and persistence across geographically delimited units of analysis. From a structural control perspective, the group processes that facilitate gang violence (i.e. Figure 2) should be elevated in neighborhoods and cities with weakened systems of social control and collective efficacy. From a structural adaptation perspective, neighborhoods and cities devoid of adequate opportunity structures should be more susceptible to the group processes that result in higher rates of gang-related status-producing incidents and illicit economic activities.

Research on Gang Behaviors

We organize macro-level research on gang behaviors according to studies of violence and studies of gangs. Table 1 details the empirical focus in research on gang behaviors, specifying the relationships between the explanatory and outcome variables. Studies of violence concentrate on explaining gang or aggregate violence using gang prevalence or traditional theoretical covariates as explanatory variables. Studies of gangs concentrate on explaining the emergence of gangs across time or the distribution of gang members or gangs across space. Given the prominent contribution of gangs to aggregate patterns of violence, especially over the last three decades (Decker & Pyrooz, 2010b; Howell et al., 2011; W. B. Miller, 2001), more research has focused on explaining the nonrandom distribution of gang violence.³

There is no better way to illustrate the distinctive character of street gangs than to evaluate their disproportionate involvement in violence. While this is commonly displayed using individual-level data (see Krohn & Thornberry, 2008), similar findings apply in the aggregate. In the city of Boston, for example, Kennedy, Braga, and Piehl (1997) reported that gang "turf" covered only 1.6 of Boston's 48 square miles (<4%) in 1994, but was the site for 25% of youth homicides, gun assaults, and weapons offenses (see also Braga, Hureau, & Winship, 2008). National figures from large cities indicate that while gang members comprised far less than 1% of the general population, over 20% of the homicides in large cities were gang related (Decker & Pyrooz, 2010b; Pyrooz, 2012). Chicago and Los Angeles have been pegged as drivers of national gang homicide tallies by virtue of their volume and prevalence of gang homicide (Maxson, 1999; Maxson, Curry, & Howell, 2002); however, emerging evidence

3. Questions surrounding the utility of police gang data have been raised, but emerging evidence is finding official sources of gang homicide data to demonstrate sufficient reliability and validity (Decker & Pyrooz, 2010a).

Table 1 Empirical focus in macro-level gang research

Explanatory variable	Outcome variable
<i>Studies of violence</i>	
Gang prevalence	Violence
Gang prevalence	Gang violence
Structural condition or mediating mechanism	Gang violence
<i>Studies of gangs</i>	
Structural condition or mediating mechanism	Gangs
Structural condition or mediating mechanism	Gang members

in several smaller cities—e.g. Inglewood, CA; Salinas, CA—indicates substantial gang activity (Howell et al., 2011). While bivariate displays of associations are informative, we focus on multivariate empirical studies on the unequal distribution of violence—aggregate violence and gang violence—within and between cities that account for alternative explanations of the outcomes of interest.

Studies that have examined the independent contribution of gangs to *aggregate violence* include Pyrooz (2012), Robinson et al. (2009), and Tita and Ridgeway (2007). Robinson et al. (2009) observed a strong relationship between the geographic density of gangs and homicide across Los Angeles zip codes between 1994 and 2002. Neighborhoods with no active gangs within a 2-mile radius averaged 3.4 homicides per square mile across the study period, whereas neighborhoods with 1-10, 11-20, 21-30, and greater than 30 active gangs averaged 12, 29, 42, and 61 homicides per square mile. To pinpoint the influence of gangs on neighborhood crime, Tita and Ridgeway (2007) weighted census block groups in Pittsburgh, PA according to the probability of gang set space emergence in 1992-1993 and examined 911 calls through 1995 for assaults, burglaries, drug crimes, robberies, and shots fired. Notable increases in drug and shots fired calls were observed during the emergence period, but the impact waned in subsequent years. Pyrooz (2012) examined whether rates of gang membership (per 10,000) in large US cities were related to aggregate patterns of homicide between 2002 and 2006, but found no statistically significant relationship. The studies discussed above are examples of the pernicious influence of gangs on patterns of violence for people nested within gang neighborhoods.

Studies of the correlates of *gang violence* include both a neighborhood-level (Curry & Spergel, 1988; Kubrin & Wadsworth, 2003; Kyriacou, Hutson, Anglin, Peek-Asa, & Kraus, 1999; Mares, 2010; Papachristos & Kirk, 2006; Rosenfeld, Bray, & Egley, 1999) and city-level focus (Decker & Pyrooz, 2010a; Maxson et al., 2002; Pyrooz, 2012). Neighborhood-level studies examining the structural correlates of gang homicide have been carried out in Chicago, Los Angeles, and St Louis and generally take on one or more of the following characteristics. First, a standard approach in this research is to explore the

effects of social and economic indicators available through the US Census Bureau—concentrated disadvantage, racial and ethnic heterogeneity, residential instability, population structure, and demographics—on gang violence. Second, analytic developments over the last dozen years for assessing spatial dependence in geographically-oriented data (e.g. Fornango, 2011; Messner et al., 1999) are also found in neighborhood studies of gang violence. Third, and less frequent, studies model the mediating mechanisms leading to gang violence. For example, in taking advantage of unique data sources, Papachristos and Kirk (2006) modeled collective efficacy in their study of gang homicide in Chicago. This line of research suggests that the construct of concentrated disadvantage (i.e. poverty, female-headed households, unemployed male, public assistance, and, usually, African-American population) is closely related to higher rates of violence, that spatial effects persist net of other influential factors, there are differences in the correlates of gang and nongang homicide, and that mediating mechanisms are important correlates of gang homicide.

City-level studies of gang violence are less prevalent than neighborhood-level studies, but are equally important for understanding the structural conditions associated with gang violence. This research explores why some cities have higher rates of gang homicide than others. Pyrooz (2012) examined this issue using National Gang Center data collected from 88 large US cities between 2002 and 2006. Cities with higher rates of gang membership were associated with increased gang homicide rates, where an additional 93 gang members per 10,000 persons would raise the gang homicide rate by 1 per 100,000 persons. Yet, gang membership rates did not suppress the influence of socioeconomic deprivation and population density as one might expect, as both covariates were positively related to gang homicide rates and differed statistically in magnitude when compared to nongang homicide. This research is consistent with event (e.g. Maxson, Gordon, & Klein, 1985), neighborhood (e.g. Mares, 2010), and process (e.g., Cohen & Tita, 1999) studies of gang homicide in finding that gang homicide differs from other forms of homicide, reinforcing points made by Land, McCall, and Cohen (1990) and Williams and Flewelling (1988) about the need for homicide disaggregation.

Studies examining *gangs* and *gang members* in aggregate units of analysis include Katz and Schnebly (2011), Pyrooz, Fox, and Decker (2010), and Tita, Cohen, and Engberg (2005). Tita et al. (2005) were able to model the emergence of gang “set space” in Pittsburgh, PA, which refers to microareas in neighborhoods where the gang comes together to hang out. Using data gathered at the census block level, they found that increases in population density, vacant housing, concentrated disadvantage, proportion black population, and white-to-black changes in the population structure corresponded to greater probabilities of set space being found in a neighborhood, consistent with informal social control themes of guardianship and abandonment. Katz and Schnebly (2011) studied neighborhood variations in the concentration of gang members across census tracts in Mesa, AZ. Neighborhoods with higher levels of

economic deprivation and social disadvantage were found to have higher rates of gang members, as well as neighborhoods with higher residential stability, consistent with Bursik and Grasmick's (1993) focus in their systemic model of control. Nonlinear relationships were observed for the latter two covariates, although in opposite directions. The upper tail of the economic deprivation distribution corresponded with accelerated rates, whereas rates of gang membership decelerated at the upper bounds of the social disadvantage distribution. Pyrooz, Fox and Decker (2010) extended this line of research by studying the macro-level covariates of gang membership in the 100 largest US cities using National Gang Center data. They examined both the additive and interaction effects of economic disadvantage and racial and ethnic heterogeneity on aggregate patterns of gang membership. Not only did they find that disadvantage and greater racial and ethnic diversity were positively related to gang membership in cities, the interaction between the two revealed that disadvantage mattered much less in cities with low diversity than in cities with high diversity.

Advancing Macro-Level Research

Despite the growth in macro-level gang research in the last decade, we see important steps for moving this literature forward. First, this research is "stuck in time," meaning that it is overwhelmingly cross-sectional. Methodological advances and the growth and maintenance of specialized gang measurement systems (i.e. National Gang Center) permit descriptive and predictive longitudinal analyses, such as the diffusion and emergence of gang activity and modeling covariates to explain these patterns. Second, the application of macro-level theory—e.g. deterrence, institutional anomie, social disorganization, and social support—to the patterns of gang activity provides an ideal laboratory to test and extend criminological knowledge particularly at the neighborhood level.

Third, it is necessary to extend our understanding of macro-level patterns beyond the "usual suspects" (i.e. Chicago, Los Angeles, St Louis). The ultimate goal would be to model variability within and between cities, which would speak to many issues surrounding demographic, regional and structural questions about gangs as well as mediating mechanisms and explanation limits of theory according to units of analysis (e.g. Hipp, 2007). While points one and two are more realistic, given the availability of the data, point three would require substantial investment to systematically collect neighborhood gang information across cities. We see this as a worthy investment, as it is most consistent with our call for cross-level research.

Closing Remarks

The study of gangs unites a large and diverse set of literatures in criminology and criminal justice. The major methods of study in our field can be seen in the study of gangs. Indeed, studies of gangs were among the earliest ethnographic and neighborhood studies in criminology. The ethnographies of Thrasher, Whyte, and Short and Strodbeck helped to define contemporary criminology. Neighborhood studies in criminology have a long tradition, tracing their roots to the work of Shaw and McKay and the impact of neighborhood structure and composition on delinquency. Much criminological theory has its origins in the study of gangs. Strain and opportunity theory are solidly based in studies of gangs and gang members. The use of risk factors has become a major focus in criminology and well beyond, particularly in public health and education. Much risk factor research has been informed by the ground breaking studies of gang behavior both in substance and methods. Gang research has some catching up to do in the areas of group processes and macro-level comparisons. More comparisons of gang joining and gang behavior across neighborhoods and across cities are necessary for the field to move forward. The way ahead in these areas is clearly through multimethod, multisite studies of gangs that integrate dimensions of time as well as Short's three-level framework.

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