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The Effects of Neighborhood Context on Youth Violence and Delinquency: Does Gender Matter?

Abigail A. Fagan¹ and Emily M. Wright¹

Abstract

This study examined the effects of neighborhood structural and social characteristics on offending among girls and boys aged 8–17 residing in 80 Chicago neighborhoods. The results demonstrated gender differences in contextual effects, although not in ways predicted by social disorganization theory. Collective efficacy and concentrated disadvantage were not significantly associated with self-reported offending among males. Among females, collective efficacy was related to higher rates of general delinquency and violence, while disadvantage reduced the likelihood of self-reported violence. These outcomes suggest that neighborhoods may impact individual offending in complex ways and highlight the importance of considering gender when researching contextual effects on youth offending.

Keywords

gender, violence, social disorganization, collective efficacy, neighborhoods

Introduction

The importance of neighborhood context in shaping involvement in crime has been acknowledged for decades. Shaw and McKay's (1942) social disorganization theory, and expansions of it (Anderson, 1999; Sampson, Raudenbush, & Earls, 1997; Wilson, 1987), is the dominant theory used to examine neighborhood influences on various criminological outcomes. The theory holds that structural characteristics, notably concentrated disadvantage, residential instability, and immigrant concentration negatively impact neighborhood social mechanisms, including collective efficacy (Morenoff, Sampson, & Raudenbush, 2001; Sampson et al., 1997), social ties (Bellair, 1997; Rountree & Warner, 1999; Warner & Rountree, 1997), and cultural norms or cognitive landscapes (Sampson & Bartusch, 1998; Sampson & Wilson, 1995). While this perspective has been used to explain both adult and youth

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crime, this article focuses on how socially disorganized neighborhoods contribute to offending among young people. Using data from neighborhoods in Chicago, we extend social disorganization theory to explore gender differences in the effects of structural and social neighborhood characteristics on delinquency and violence.

Social Disorganization and Youth Offending

According to social disorganization theory, neighborhoods marked by high rates of poverty offer youth more limited educational, social, and physical resources (e.g., lower quality schools, fewer youth-serving agencies such as boys and girls clubs, etc.) and fewer opportunities to learn new skills or interact with positive adult role models compared to more affluent areas. These communities tend to be characterized by high rates of unemployment and single-parent families, which further reduce children's contact with adults who are positively bonded to social institutions and who can provide consistent supervision and monitoring. These problems are exacerbated when residents with resources and conventional values move out of the neighborhood. Those who remain become socially isolated, lacking contact with individuals and organizations representing mainstream society (Wilson, 1987). Crime and norms supportive of deviance begin to flourish as residents with no steady income and few prospects of employment engage in illegal activities to support themselves; despair and hopelessness lead to frustration and anger, and a violent street culture can emerge (Anderson, 1999). In short, economically disadvantaged neighborhoods are characterized not only by poverty and structural deficits but also, and perhaps more importantly, by a paucity of social and cultural capital, which limit opportunities for conventional behavior and make the transmission of deviant behaviors and attitudes to youth growing up in these areas more likely (Kornhauser, 1978; Sampson & Bartusch, 1998; Sampson & Wilson, 1995).

Despite the many problems associated with disadvantaged communities, not all residents commit or support illegal behaviors, and not all youth from these areas become delinquent or violent. Even in high poverty areas, residents can counteract the negative effects of disadvantage by engaging in "collective efficacy" (Sampson et al., 1997)—efforts to informally regulate the behavior of youth in the neighborhood. This construct emphasizes that residents who know and trust one another and agree on the norms and values that should guide behavior are more likely to act on each other's behalf and to exercise informal social controls to enforce these standards. Residents may help to reduce crime by taking collective actions that communicate to others that illegal behavior will not be tolerated, such as monitoring youth (and youth gang) activities and intervening when they see disorderly behavior occurring (Sampson et al.,

1997). Collective efficacy is much more difficult to activate in areas marked by high rates of poverty, turnover of residents, or ethnic heterogeneity because these circumstances impede the ability of residents to know and trust each other (Kornhauser, 1978).

There is evidence that both neighborhood structural and social factors affect rates of offending, including burglary, robbery, assault, homicide, and other violent and property crimes (Bursik & Webb, 1982; Osgood & Chambers, 2000; Sampson et al., 1997; Sampson & Groves, 1989; Shaw & McKay, 1942). Studies examining youth offending have found that children living in neighborhoods marked by concentrated disadvantage (e.g., high rates of poverty, unemployment, or female-headed households) are at increased risk of engaging in delinquency and violence (De Coster, Heimer, & Wittrock, 2006; Haynie, Silver, & Teasdale, 2006; Jacob, 2006; Mrug & Windle, 2009; Neumann, Barker, Koot, & Maughan, 2010; Peeples & Loeber, 1994). In addition, neighborhood social processes such as collective efficacy, social ties between residents, cultural norms shared by residents, and the availability of or resident participation in neighborhood services/ organizations have been found to reduce youth aggression, delinquency, and violence (Elliott et al., 1996; Meier, Slutske, Arndt, & Cadoret 2008; Molnar, Cerda, Roberts, & Buka, 2008; Sampson, 1997; Simons, Gordon Simons, Burt, Brody, & Cutrona, 2005; Van Horn, Hawkins, Arthur, & Catalano, 2007). For example, Elliott et al. (1996) reported that in Chicago, informal social control was associated with lower rates of self-reported delinquency and drug use among teenagers; while in Denver, neighborhoods with strong informal networks had lower rates of adolescent offending.

Although there is empirical support that neighborhood constructs influence delinquency, some studies have found that structural and social processes may not directly impact teenage offending. Many studies that have used census data to assess neighborhood economic disadvantage have failed to find a statistically significant association with youth delinquency and/or violence, either when looking at the direct effects of structural characteristics only (Bernburg & Thorlindsson, 2007; Beyers, Bates, Pettit, & Dodge, 2003; Maimon & Browning, 2010; Sampson, Morenoff, & Raudenbush, 2005) or when examining their direct effects controlling for neighborhood social processes (Elliott et al., 1996; Rankin & Quane, 2002). Likewise, some studies have reported that social processes like informal social control and social ties/networks do not significantly impact youth delinquency (De Coster et al., 2006; Karriker-Jaffe, Foshee, Ennett, & Suchindran, 2009; Maimon & Browning, 2010; Mrug & Windle, 2009; Rankin & Quane, 2002; Sampson et al., 2005). Others have reported that the direct effects of neighborhood variables on youth delinquency are small, typically accounting for less than 10% of the explained variance in outcomes (Elliott et al., 1996; Gottfredson, McNeil, & Gottfredson, 1991). These findings have led to an acknowledgment that the

effects of neighborhood processes on delinquency are complex and that additional research is needed to identify for whom and under what conditions neighborhood characteristics are most likely to affect delinquency (Leventhal & Brooks-Gunn, 2000).

Gender and Social Disorganization Theory

In order to improve our understanding of the individuals for whom neighborhood conditions are most important, we examine gender as a moderator of the effects of neighborhoods on youth offending; that is, we explore the extent to which neighborhood processes affect males and females differently. We focus on gender because it is one of the strongest and most consistent correlates of offending, with males being much more likely to engage in offending, especially serious and violent crimes, compared to females, according to both official statistics and self-report surveys (Chesney- Lind, 1997; Puzzanchera, 2009; Zahn, Hawkins, Chiancone, & Whitworth, 2008). While gender differences in rates of offending are evident, the gender gap in offending has yet to be adequately explained, and there has been a decided lack of attention to gender in the social disorganization literature (Kroneman, Loeber, & Hipwell, 2004; Zahn & Browne, 2009). Social disorganization theories have failed to account for gender differences in rates of offending and have largely assumed that neighborhood processes will affect males and females in similar ways. We examine the accuracy of this assumption in this study.

Studies of gender differences associated with risk and protective factors in other contexts (e.g., family or school influences) have demonstrated more similarities than differences in the effects of these variables for girls and boys (Moffitt, Caspi, Rutter, & Silva, 2001; Zahn et al., 2008), and it may be that variables associated with social disorganization will have similar effects on females and males (Zahn & Browne, 2009). However, there is also reason to expect that boys and girls may vary in their exposure and susceptibility to neighborhood influences. Gender differences in socialization practices are widely acknowledged and empirical evidence has demonstrated that parents tend to place more restrictions on girls' activities and monitor their behaviors more closely compared to boys, who are allowed greater freedom (Cernkovich & Giordano, 1987; Chesney-Lind, 1997; Fagan, Van Horn, Hawkins, and Arthur, 2007). As a result, girls tend to spend more time at home, under their parents' supervision, while boys spend more time outside of the home and should therefore be more exposed to neighborhood structural and social factors. It is also possible that neighborhood residents will more actively attempt to control the behaviors of boys who could be perceived as more dangerous and more likely to commit crime compared to girls. Alternatively, adult residents, like parents, may view girls as in need of more protection and oversight and may thus be more likely to regulate the

behavior of girls compared to boys (Browning, Leventhal, & Brooks-Gunn, 2005). Thus, while the literature tends to promote the hypothesis that boys will be more affected by neighborhood factors, the converse explanation is also plausible (Kroneman et al., 2004).

Few empirical studies have explored gender differences in the effects of the neighborhood context. The available evidence has indicated mixed effects. Some research has reported that neighborhood disadvantage has either small or nonsignificant effects on both male and female offending (Beyers et al., 2003; Jacob, 2006; Mrug & Windle, 2009; Simons, Johnson, Beaman, Conger, & Whitbeck, 1996), and that social processes like collective efficacy have similar effects for both sexes in reducing delinquency (Molnar et al., 2008) or failing to reduce delinquency (Karriker-Jaffe et al., 2009; Mrug & Windle, 2009). In contrast, studies have found that neighborhood poverty is more likely to increase violence among females compared to males (Karriker-Jaffe et al., 2009), while other research has found that neighborhood affluence (Beyers et al., 2003) and collective efficacy (Meier et al., 2008) are more protective for males. Finally, two studies reported mixed and somewhat unexpected findings related to gender and neighborhood context. Gottfredson et al. (1991) found that neighborhood disadvantage (poverty, unemployment, and female-headed households) increased violence among girls, but not boys, while neighborhood affluence *increased* theft for males but had no effects on female offending. The Moving to Opportunities study (Kling, Ludwig, & Katz, 2005) found that girls who moved from highly disadvantaged communities to more affluent areas had fewer arrests for violent offending and property offenses than girls who had not moved, while boys who had moved were *more likely* to commit property offenses than nonrelocated boys.

Methodological Limitations of Prior Research

In summary, the empirical research examining gender differences in the effects of neighborhood variables has been limited and mixed. Although some findings suggest that neighborhood influences may vary by sex, many of the investigations examined effects separately for males and females but did not test whether the differences were statistically different across the sexes. As a result, it is very difficult to determine the extent to which social disorganization processes affect females and males in different ways.

In addition, many prior investigations have methodological challenges characteristic of the broader social disorganization literature. Contextual studies require large samples of both neighborhoods and individuals in order to ensure enough variability in neighborhood features and individuals exposed to these conditions to conduct multilevel statistical modeling (Leventhal & Brooks-Gunn, 2000). However, much prior research has been conducted with relatively small samples of individuals and/or

neighborhoods, which is even more problematic when assessing gender differences, given that samples are necessarily halved. A failure to identify gender differences may then be due to limited power rather than true similarities between the sexes. Many neighborhood studies have focused on assessing the effects of structural variables such as poverty, because such information is readily available (e.g., by matching respondents' addresses to data from the U.S. Census Bureau), while social processes, which are much more difficult to assess, have been underexamined.

Ideally, neighborhood processes like informal social control/collective efficacy should be collected from objective sources (e.g., via systematic observations or interviews with key informants) in order to reflect characteristics of the community rather than the individuals living in that community (Sampson & Raudenbush, 1999; Van Horn et al., 2007). Because such data can be costly and difficult to collect, most studies that measure social processes utilize survey data collected from the youth (or their parents) whose behaviors are being assessed, which are then aggregated up to the neighborhood level. In fact, with the exception of Van Horn et al. (2007) and studies using data from the Project on Human Development in Chicago Neighborhoods (PHDCN), all the studies reviewed above, which measured social processes, relied on information from parents and/or their children whose behaviors were being studied. Collecting data on independent and dependent variables from the same individuals is problematic as it may inflate the strength of the relationship under examination (Sampson & Raudenbush, 1999; Van Horn et al., 2007). Similarly, studies which have assessed only macrolevel relationships between collective efficacy and neighborhood outcomes may also inflate the strength of the relationship under examination, particularly if they neglect to account for the compositional (individual-level) effects that exist across neighborhoods.

The limited research, methodological challenges, and mixed findings from available studies indicate the need for further examination of the relationship between neighborhood characteristics, gender, and adolescent delinquency. The current study investigates gender differences in the effects of social disorganization processes using data from the PHDCN (Earls, Brooks-Gunn, Raudenbush, & Sampson, 2002), a methodologically rich and sophisticated study purposely designed to examine neighborhood influences on behavior. Our analyses examine gender differences in the influence of both structural (i.e., concentrated disadvantage) and social (i.e., collective efficacy) features of neighborhoods. The study includes enough male and female participants to identify gender differences if they are present, and we explicitly test for gender differences in the strength of the relationship between neighborhood features and adolescent offending. Two research questions are addressed:

1. Controlling for relevant individual-level factors, what are the direct effects of neighborhood structural characteristics and social processes on male and female delinquency and violence?
2. Are these effects statistically different for males and females?

Method

Data

The PHDCN involves multiple units of analysis and data collection efforts. The study utilized 847 contiguous census tracts in Chicago to create 343 neighborhood clusters (NCs), each of which contained about 8,000 residents. Using these NCs to define neighborhoods, the PHDCN involved three data collection components, all of which are used in the current study.

Data from the Longitudinal Cohort Study (LCS) were used to derive individual-level rates and predictors of delinquency and violence. To collect these data, the 343 NCs were grouped by 7 categories of racial and ethnic composition (e.g., 75% or more African American residents) and three levels of socioeconomic status (SES; e.g., high, medium, low), and 80 NCs were selected via stratified probability sampling from these 21 strata. The LCS then sampled 6,228 children, adolescents, and young adults living in these 80 NCs. Both youth and their primary caregivers (93% of whom were women) were interviewed in their homes or by telephone. Although the LCS involved a multiple cohort design (with seven cohorts of participants aged 0, 3, 6, 9, 12, 15, and 18), the current analyses focus on youth offending and thus include only respondents from the age groups of 9, 12, and 15. We rely on data from the first wave of data collection, conducted from 1994 to 1997.

Data for the measure of collective efficacy were derived from the PHDCN Community Survey. The full Community Survey took place between 1994 and 1995 and surveyed a sample of neighborhood residents drawn from all 343 NCs. A three-stage sampling design was used, in which city blocks were sampled within each NC, dwelling units were then sampled within blocks, and one adult resident was sampled within each dwelling unit. The current study relies on responses from residents living in the 80 NCs within which the individual respondents from the LCS were nested.¹ Residents assessed neighborhood collective efficacy by reporting on their neighborhoods' informal and formal social control and the level of social cohesion between neighbors.

Table 1. Descriptive Statistics

	Male s		Females		<i>t</i> Test
	<i>x</i>	<i>SD</i>	<i>x</i>	<i>SD</i>	
	<i>n</i> ¼ 1,180		<i>n</i> ¼ 1,164		
Dependent variables					
General delinquency	1.3 4	2.1 1	1.0 4	1.7 8	3.58***
Any general delinquency	0.4 8	0.0 5	0.4 1	0.4 9	3.65***
Violence	0.6 8	1.1 3	0.5 5	1.0 5	2.85***
Any violence	0.3 7	0.4 8	0.2 9	0.4 5	4.12***
Level 1 independent variables					
Age	11.9 2	2.45	12.0 6	2.42	
Family SES	0.1 0	1.01	0.02	0.99	
Hispanic	0.4 7	0.50	0.45	0.50	
African American	0.3 4	0.48	0.37	0.48	
Low self-control	47.4 0	11.5 8	45.1 4	11.4 0	4.68***
Parental criminality	0.1 2	0.32	0.14	0.34	
Parental warmth	6.0 6	2.08	6.15	2.07	
Parental monitoring	9.8 1	1.52	9.87	1.56	
Peer delinquency	15.0 5	3.21	14.4 4	3.16	4.48***
Level 2 independent variables					
Concentrated disadvantage	-0.01	1.00	0.02	1.01	
Collective efficacy	-0.00	0.22	0.00	0.23	

Note. SES ¼ socioeconomic status.

****p* < .01 (two tailed).

The measure of neighborhood disadvantage was derived from the 1990 U.S. Census. Because each NC comprises several contiguous census tracts, census data were matched to each appropriate NC in order to create census measures for each NC.²

Measures

Table 1 describes the measures used in this study. All individual-level predictors were provided by the youth subjects, their primary caregivers, or the PHDCN interviewers. We hereafter refer to those measures as individual-level or Level 1 predictors and the neighborhood-level predictors as our Level 2 measures.

Dependent variables. Delinquency and violence were assessed at Wave 1 using a self-report questionnaire completed by youth involved in the LCS. Items were adapted from the Self-Report Delinquency Questionnaire (Huizinga, Esbensen, & Weiher, 1991). General delinquency was assessed using 22 items ($\alpha = .77$). Youth were asked to report the number of times in the past year they had committed each act, including crimes related to public order (e.g., disorderly conduct and prostitution), property offenses (e.g., property damage, arson, breaking and entering, stealing, buying or selling stolen goods, and purse snatching or pickpocketing), drug sales (e.g., selling marijuana, heroin, and crack or cocaine), and violence (e.g., throwing objects at people, hitting someone, carrying a weapon, attacking someone with a weapon, involvement in a gang fight, robbery, and sexual assault). Of the violent acts included in the general delinquency scale, seven were used to create a separate measure of adolescent violence ($\alpha = .66$): Throwing objects at someone, hitting someone, hitting someone you live with, carrying a weapon, attacking someone with a weapon, being involved in a gang fight, and robbery. For both offending outcomes, each item was dichotomized (*no offending* = 0; *any offending act* = 1) and summed to measure the total number (count) of reported delinquent and violent acts. Dichotomous measures—any general delinquency and any violence—were also created to differentiate those who reported no offending (coded as 0) and those who reported one or more delinquent or violent acts in the past year (coded as 1).

Level 2 neighborhood characteristics. Following Sampson et al. (1997), concentrated disadvantage was based on principal components factor analysis using information from the 1990 U.S. Census. Six poverty-related variables ($\alpha = .70$) loaded highly on one factor representing economic disadvantage: The percentage of residents in a NC who were below the poverty line, receiving public assistance, African American, unemployed, younger than 18 years old, and living under female-headed households. Higher numbers on this variable reflect greater concentrated disadvantage.

Collective efficacy measured the degree of informal social control and social cohesion between neighbors and was derived from the Community Survey data using the same items as Sampson et al. (1997). To assess informal social control, residents were asked 5 items regarding the likelihood (assessed on a 5-point Likert-type scale, from *very unlikely* to *very likely*) that neighbors could be counted on to intervene if: Children were skipping school and hanging out on a street corner; children were spray painting graffiti on a local building; children were showing disrespect to an adult; a fight broke out in front of their house; and the fire station closest to their home was threatened with budget cuts. To measure social cohesion and trust between neighbors, residents were asked 5 items regarding how strongly (on a 5-point Likert-type scale ranging from *strongly disagree* to *strongly agree*) they agreed with the following statements: People around here are willing to help their neighbors; this is a

close-knit neighborhood; people in this neighborhood can be trusted; people in this neighborhood generally do not get along with each other (reverse coded); and people in this neighborhood do not share the same values (reverse coded). Given that collective efficacy cannot be directly observed, it was modeled as a latent variable (Raudenbush & Bryk, 2002). Following Sampson et al. (1997), Browning, Feinberg, and Dietz (2004), and Morenoff et al. (2001), a 3-level item response model was used to construct the measure based on the 10 indicators above. Like those studies, the Level 3 residuals from the item response model were used in this study as the neighborhood scores of collective efficacy.³

Level 1 control variables. Multiple control variables were included in the analysis in order to account for other possible predictors of youth offending. All were measured at Wave 1 of the LCS and were based on youth and caregiver surveys or interviewer observations. Youth self-reports were used to assess age, race/ethnicity, and peer delinquency. Age was the youth's age in years. Two dichotomous variables, Hispanic and African American, identified the race/ethnicity of the youth, with non-Latino Whites serving as the reference category. Peer delinquency was a summary measure based on child reports of the number of their friends who engaged in 11 delinquent acts (a $\frac{1}{4}$.82), including vandalism, stealing, breaking and entering, car theft, fighting, robbery, and selling drugs.

Responses from the primary caregiver or interviewer impressions were used to measure five additional variables: Family SES, youth self-control, parental criminality, parental warmth, and parental monitoring. *Family SES* was a factor score based on parent education, employment, and income (a $\frac{1}{4}$ 0.57). *Parental criminality* was a dichotomous variable indicating that the primary caregiver identified either biological parent of the child as having had "trouble with the police or been arrested." Following Gibson, Sullivan, Jones, and Piquero (2010), children's *low self-control* was measured according to 17 items (a $\frac{1}{4}$.74) reported by parents on the Emotionality, Activity, Sociability, and Impulsivity (EASI) Temperament survey (Buss & Plomin, 1975). Parents were asked to report on a 5-point Likert-type scale how characteristic each attitude or behavior was for their child, with items relating to inhibitory control (e.g., "has trouble resisting temptation"), decision time (e.g., "often acts on the spur of the moment"), sensation seeking (e.g., "will try anything once"), and persistence (e.g., "tends to give up easily"). Higher scores on this measure indicate lower self-control. *Parental monitoring* was based on in-home interviews conducted by trained PHDCN staff with primary caregivers and indicates the number of supervision techniques reported, based on 13 dichotomous items (a $\frac{1}{4}$.50) including making and enforcing rules, interacting with children's peers, visiting the child's teacher or school, and discouraging drug use. *Parental warmth* toward the youth reflects the overall warmth displayed by parents toward children, as observed by PHDCN staff during in-home interviews, who assessed the occurrence of each of nine behaviors (a $\frac{1}{4}$.76; e.g., praise, encouragement, and affection offered to children from parents) using a dichotomous rating of each behavior (*not*

observed $\frac{1}{4}$ 0; observed $\frac{1}{4}$ 1).

Mean scores and the standard deviations of all the dependent, independent, and control variables are presented in Table 1, by gender. As expected, boys reported significantly ($p \leq .05$) more involvement in delinquency and violence than girls according to all four dependent variables. Only two of the control variables showed significant differences by gender: Parents rated boys as having lower self-control compared to girls, and boys reported greater exposure to delinquent peers than did girls. The other control variables, as well as neighborhood disadvantage and collective efficacy, had similar mean scores for females and males.

Analysis

Because the sample includes youth and their families living in 80 neighborhoods in Chicago, hierarchical modeling techniques (Hierarchical Linear Modeling [HLM]; Raudenbush & Bryk, 2002) using HLM 6.06 software (Raudenbush et al. 2004) were used to examine the effects of neighborhood characteristics on neighborhood rates of youth delinquency and violence after individual-level effects had been examined. Two types of analyses were conducted. Bernoulli models were used to analyze the dichotomous outcomes (e.g., *any general delinquency* and *any violence*). To analyze the number of delinquent and violent acts (e.g., *general delinquency* and *violence*), negative binomial models were used which take into account outcomes that are overdispersed (i.e., large variance) or skewed (Raudenbush & Bryk, 2002).

The hierarchical analyses proceeded in several stages. The first step involved estimating an unconditional model for each outcome (i.e., dichotomous and count measures) to determine whether the variation between neighborhoods was significant ($p \leq .05$). These analyses revealed that all outcomes for male delinquency (*any general delinquency*: $p \leq .038$; $d^2 \frac{1}{4}$ 0.98565; $t \frac{1}{4}$ 0.08274; and *general delinquency*: $p \leq .000$; $d^2 \frac{1}{4}$ 2.99177; $t \frac{1}{4}$ 0.06545) and violence (*any violence*: $p \leq .026$; $d^2 \frac{1}{4}$ 0.98239; $t \frac{1}{4}$ 0.08311; and *violence*: $p \leq .000$; $d^2 \frac{1}{4}$ 1.63144; $t \frac{1}{4}$ 0.10819) varied significantly across NCs at Wave 1, as did the outcomes for female delinquency (*any general delinquency*: $p \leq .014$; $d^2 \frac{1}{4}$ 0.98338; $t \frac{1}{4}$ 0.08685; and *general delinquency*: $p \leq .002$; $d^2 \frac{1}{4}$ 2.71472; $t \frac{1}{4}$ 0.08993) and violence (*any violence*: $p \leq .000$; $d^2 \frac{1}{4}$ 0.94864; $t \frac{1}{4}$ 0.26741; and *violence*: $p \leq .000$; $d^2 \frac{1}{4}$ 1.78556; $t \frac{1}{4}$ 0.20286).⁴

The second step involved the estimation of the random coefficients models to determine the main effects of the individual-level (Level 1) predictors on youth violence and delinquency. These models allowed for the examination of the significance of those effects and the identification of Level 1 effects that varied significantly across neighborhoods. The effects of variables that did not vary significantly across NCs were “fixed” for the estimation of all subsequent models (intercepts- as-outcomes models, described below) and are denoted in the random coefficients models in Tables 2 and 3. Allowing the Level 1 slopes to vary randomly in the Level 1 models is a more rigorous test of the contextual effects because such

Table 2. Random Coefficients Models Predicting General Delinquency, by Gender^a

	General Delinquency			Any General Delinquency		
	Males	Females	Z Test	Males	Females	Z Test
	b (SE)	b (SE)		b (SE)	b (SE)	
Intercept	0.01 (0.05)	-0.39 (0.06)**	5.12**	-0.02 (0.08)	-0.42 (0.08)**	3.54**
Level 1 independent variables						
Age	0.19 (0.02)**	0.24** (0.03)		0.30 (0.03)**	0.37 (0.04)*	
Family SES	-0.01 (0.04)	0.05 (0.04)		0.12 (0.07)	0.17 (0.08)*	
Hispanic	-0.06 (0.13)	-0.07 (0.13)		-0.36 (0.20)	-0.19 (0.23)	
African American	0.08 (0.13)	0.28 (0.13)*		0.36 (0.21)	0.38 (0.23)	
Low self-control	0.01 (0.00)**	0.01 (0.00)*		0.02 (0.01)**	0.01 (0.01)	
Parental criminality	0.05 (0.13)	0.22 (0.10)*		0.08 (0.22)	0.49 (0.22)*	
Parental warmth	-0.01 (0.02)	-0.05 (0.02)*		0.00 (0.04)	-0.04 (0.04)	
Parental monitoring	-0.02 (0.03)	-0.02 (0.03)*		-0.09 (0.05)	-0.04 (0.06)	
Peer delinquency	0.13 (0.01)**	0.16 (0.01)**	-2.12*	0.18 (0.03)**	0.26 (0.03)**	
w ²	25.68**	91.90*		84.68	89.15*	
d ²	1.81824	1.33981		0.9488	1.05044	

Note. SES = socioeconomic status. Italicized coefficients indicate significantly varying effects across neighborhood clusters. ^aMale analyses are based on 1,180 males within 79 neighborhood clusters; female analyses are based on 1,164 females within 76 neighborhood clusters.

*p < .05, **p < .01 (two-tailed).

Table 3. Random Coefficients Models Predicting Violence, by Gender^a

	Violence			Any Violence		
	Males	Females	Z Test	Males	Females	Z Test
	b (SE)	b (SE)		b (SE)	b (SE)	
Intercept	-0.62 (0.06)**	-1.13 (0.07)**	5.53**	-0.60 (0.07)**	-1.22 (0.09)**	5.44**
Level 1 independent variables						
Age	0.15 (0.02)**	0.26 (0.03)**	-3.05**	0.23 (0.03)**	0.39 (0.04)**	-3.20**
Family SES	-0.00 (0.05)	0.02 (0.06)		0.14 (0.08)	0.08 (0.09)	
Hispanic	-0.18 (0.13)	-0.08 (0.16)		-0.29 (0.20)	-0.52 (0.27)	
African American	0.12 (0.12)	0.63 (0.15)**	-2.65**	0.35 (0.21)	0.60 (0.24)*	
Low self-control	0.01 (0.00)	0.01 (0.00)		0.01 (0.01)	0.01 (0.01)	
Parental criminality	-0.03 (0.12)	0.21 (0.13)		0.05 (0.22)	0.49 (0.23)*	
Parental warmth	0.00 (0.02)	-0.08 (0.02)**	2.83**	0.02 (0.04)	-0.09 (0.04)*	
Parental monitoring	-0.02 (0.03)	-0.05 (0.04)		-0.08 (0.05)	-0.08 (0.06)	
Peer delinquency	0.12 (0.01)**	0.17 (0.01)**	-3.54**	0.18 (0.02)**	0.26 (0.03)**	-2.22*
w ²	87.23*	75.91*		49.11	66.30	
D ²	1.11321	0.88909		0.97839	0.99767	

Note. SES = socioeconomic status. Italicized coefficients indicate significantly varying effects across neighborhood clusters. ^aMale analyses are based on 1,180 males within 79 neighborhood clusters; female analyses are based on 1,164 females within 76 neighborhood clusters.

*p < .05, **p < .01 (two-tailed).

predictors could account for some variation in the levels of youth violence and delinquency that might otherwise be explained by neighborhood predictors. All Level 1 predictors were grand mean centered in order to remove the compositional differences between neighborhood.

The third step, estimating the intercepts-as-outcomes, involved the examination of the main effects of neighborhood characteristics on the Level 2 outcomes (i.e., neighborhood rates of youth violence and delinquency). This step also allowed all fixed and varying Level 1 predictors to influence each outcome before the effects of neighborhood variables were estimated. Because we examined all models by gender, the numbers of youth nested within each NC were reduced, which raised concerns about the reliability of the Level 1 intercepts and random coefficients. To adjust for this situation, the Empirical Bayes estimates of Level 1 intercepts and slopes were modeled at Level 2 (Raudenbush & Bryk, 2002; Raudenbush et al. 2004).

Once the full models were estimated for males and females separately, both the Level 1 and Level 2 coefficients were compared using the equality of coefficients test developed by Clogg, Petkova, and Haritou (1995). Tests of statistical significance were based on a more relaxed test of statistical significance at the neighborhood ($p \leq .10$) compared to the individual ($p \leq .05$) level of analysis, given the more restricted sample size of the former (which was based on the number of NCs) compared to the latter (based on the number of youth). Multicollinearity was not a problem for any of the statistical models, with tolerance values $\geq .46$ (see Allison, 1999).

Results

Tables 2 and 3 display the results of the Level 1 random coefficients models, while Tables 4 through 7 present the Level 2 main effects on each delinquency and violence outcome. The findings at Level 1 demonstrated that relationships between the individual-level variables and youth offending were in the expected directions, although not all relationships were statistically significant ($p \leq .05$). The Level 1 variables most consistently related to the four outcomes were age and peer delinquency, with older youth and those who reported having more delinquent peers are more likely to engage in general delinquency and violence. Few of the tests for gender differences were statistically significant, particularly when examining general delinquency, indicating that risk factors for offending were similar for girls and boys. However, all of the gender difference tests that were significant showed stronger relationships for females compared to males. Specifically, the positive relationship between peer delinquency and the number of general delinquent acts reported by youth was stronger for girls than boys (see Table 2). The effects of age and peer delinquency were stronger for female violence compared to violence reported by males, both in terms of the overall likelihood of violence and the number of reported violent acts (see Table 3). In addition, African American status and parental warmth were more strongly related to the number of violent acts reported by females

compare to males.

Tables 4 through 7 provide the main effects of neighborhood disadvantage and collective efficacy on neighborhood rates of youth violence and delinquency, after accounting for individual-level correlates.⁵ The results in Table 4 demonstrate that although neither concentrated disadvantage nor collective efficacy was related to the number of delinquent acts perpetrated by males, collective efficacy increased the number of delinquent acts reported by females; further, the effects of collective efficacy were significantly stronger ($p \leq .05$) for females than males. The relationship between collective efficacy and general delinquency for females, and the gender difference test for this effect, were significant when collective efficacy was in the model alone and when concentrated disadvantage was added. As shown in Table 5, neither neighborhood variable was significantly related to the likelihood that males or females engaged in any general delinquency (i.e., the dichotomous measure). Further, there were no significant gender differences in these effects.

Outcomes related to youth violence are shown in Tables 6 and 7. Among males, neither concentrated disadvantage nor collective efficacy was related to either measure of violence. Among female respondents, collective efficacy significantly ($p \leq .10$) increased the number of violent acts reported, controlling for concentrated disadvantage and individual-level covariates, although the strength of this relationship was not significantly different between males and females (see Table 6).

Collective efficacy also significantly ($p \leq .10$) increased the likelihood of any violence and concentrated disadvantage significantly decreased the prevalence of violence among female respondents (see Table 7). Although these effects were marginally significant when the effects of the neighborhood variables were assessed independently and became nonsignificant when both variables were included in the same model, the gender difference tests were significant ($p \leq .05$) for both relationships. These tests indicated a stronger, positive association between collective efficacy and the likelihood of reporting any violence and a stronger, negative association between concentrated disadvantage and any violence among females compared to males.

Discussion

Our results demonstrated gender differences in the effects of neighborhood characteristics on youth delinquency and violence. Collective efficacy and concentrated disadvantage were not significantly associated with self-reported delinquency or violence among males aged 8–17. Among females, significant neighborhood effects on offending were demonstrated, although not in ways predicted by social disorganization theory. Collective

Table 4. Level 2 Effects on General Delinquency (Empirical Bayes Intercepts as Outcomes), by Gender^a

	General Delinquency						Z Test
	Males			Females			
	b (SE)	b (SE)	b (SE)	b (SE)	b (SE)	b (SE)	
Intercept	-0.01** (0.01)	-0.01** (0.01)	-0.01** (0.01)	-0.43*** (0.12)	-0.43*** (0.02)	-0.43*** (0.02)	NE
Level 2 variables							
Concentrated disadvantage	-0.00 (0.01)	—	—	-0.01 (0.02)	—	—	
Collective efficacy	—	-0.01 (0.03)	—	—	0.14* (0.07)	—	-1.97**
Disadvantage	—	—	-0.00 (0.01)	—	—	0.01 (0.02)	
Collective efficacy	—	—	-0.01 (0.03)	—	—	0.15* (0.08)	-1.87**
R ²	0.00	0.00	0.00	0.00	0.0 5	0.05	

Note. NE ¼ Not examined.

^aMale analyses are based on 79 neighborhood clusters; female analyses are based on 76 neighborhood clusters.

*p < .10, **p < .05, ***p < .01 (two-tailed).

Table 5. Level 2 Effects on General Delinquency (Empirical Bayes Intercepts as Outcomes), by Gender^a

	Any General Delinquency						Z
	Males			Females			
	b (SE)	b (SE)	b (SE)	b (SE)	b (SE)	b (SE) Test	
Intercept	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.44*** (0.01)	-0.44*** (0.01)	-0.44*** (0.01)	ne
Level 2 variables							
Concentrated disadvantage	-0.02 (0.01)	—	—	-0.01 (0.01)	—	—	
Collective efficacy	—	0.02 (0.05)	—	—	0.04 (0.04)	—	
Disadvantage	—	—	-0.02 (0.01)	—	—	-0.00 (0.01)	
Collective efficacy	—	—	-0.02 (0.06)	—	—	0.03 (0.05)	
R ²	0.03	0.00	0.04	0.01	0.01	0.01	

Note. NE ¼ Not examined.

^aMale analyses are based on 79 neighborhood clusters; female analyses are based on 76 neighborhood clusters.

p < .10,

p < .05, ***p < .01 (two-tailed).

Table 6. Level 2 Effects on Violence (Empirical Bayes Intercepts as Outcomes), by Gender^a

	Violence						Z Test
	Males			Females			
	b (SE)	b (SE)	b (SE)	b (SE)	b (SE)	b (SE)	
Intercept	-0.66*** (0.02)	-0.66*** (0.02)	-0.66*** (0.02)	-1.20*** (0.01)	-1.20*** (0.01)	-1.20*** (0.01)	NE
Level 2 variables							
Concentrated disadvantage	0.01 (0.02)	—	—	0.00 (0.01)	—	—	
Collective efficacy	—	0.01 (0.07)	—	—	0.08 (0.05)	—	
Disadvantage	—	—	0.01 (0.02)	—	—	0.02 (0.01)	
Collective efficacy	—	—	0.03 (0.08)	—	—	0.11* (0.06)	
R ²	0.00	0.00	0.01	0.00	0.03	0.05	

Note. NE ¼ Not examined.

^aMale analyses are based on 79 neighborhood clusters; female analyses are based on 76 neighborhood clusters.

p* < .10, *p* < .05, ****p* < .01 (two-tailed).

Table 7. Level 2 Effects on Violence (Empirical Bayes Intercepts as Outcomes), by Gender^a

	Any Violence						Z Test
	Males			Females			
	b (SE)	b (SE)	b (SE)	b (SE)	b (SE)	b (SE)	
Intercept	-0.61*** (0.00)	-0.61*** (0.00)	-0.61*** (0.00)	-1.60*** (0.04)	-1.60*** (0.04)	-1.59*** (0.04)	NE
Level 2 variables	0.00 (0.00)	—	—	-0.07* (0.04)	—	—	1.75**
Concentrated disadvantage	—	-0.01 (0.01)	—	—	0.28* (0.16)	—	-1.81**
Collective efficacy	—	—	0.00 (0.00)	—	—	-0.05 (0.04)	
Disadvantage	—	—	-0.01 (0.01)	—	—	0.17 (0.18)	
Collective efficacy	—	—	0.01	0.05	0.0	0.06	
R ²	0.00	0.0	0.01	0.05	0.0	0.06	

Note. NE ¼ Not examined.

^aMale analyses are based on 79 neighborhood clusters; female analyses are based on 76 neighborhood clusters.

p* < .10, *p* < .05, ****p* < .01 (two-tailed).

efficacy was related to higher rates of general delinquency and violence in some models, and disadvantage was related to less violence. These outcomes suggest that neighborhood effects may impact individual offending in complex ways, and they highlight the importance of considering gender when examining contextual effects on offending.

To some extent, our findings are inconsistent with other empirical evidence that has demonstrated significant relationships between neighborhood characteristics and youth crime (De Coster et al., 2006;

Elliott et al., 1996; Haynie et al., 2006; Peebles & Loeber, 1994; Simons et al., 2005; Van Horn et al., 2007). Further, our results suggest that neighborhood factors may be more influential for females than males, at least for some outcomes. Theoretical explanations to date have tended to posit that boys will be more influenced by neighborhood factors compared to girls, given that they are typically allowed more independence and spend more time in the neighborhood than do girls. Few empirical studies have tested this hypothesis, but those which have generally report similar effects of neighborhood characteristics on offending for girls and boys (Beyers et al., 2003; Jacob, 2006; Karriker-Jaffe et al., 2009; Molnar et al., 2008; Mrug & Windle, 2009; Simons et al., 1996).

Methodological differences between the current study and previous studies on neighborhoods and youth outcomes could account for this disparity in findings. Many neighborhood investigations on youth behaviors have focused on different outcomes than those examined here, failed to examine males and females separately, neglected to statistically compare the relative strength of neighborhood variables for males and females, or have not assessed the effects of collective efficacy on youth offending. Studies which have examined collective efficacy have largely relied on measures collected from the same youth (or their parents) whose behaviors were being assessed and then aggregated such information to estimate neighborhood-level processes (De Coster et al., 2006; Meier et al., 2008; Simons et al., 2005). Our measure of collective efficacy, in contrast, was reported by adult residents who were largely unrelated to the youth whose behaviors were being examined. This methodology should increase the validity of the findings and allow for a more stringent test of social disorganization theory (Leventhal & Brooks-Gunn, 2000; Sampson, Moretti, & Gannon-Rowley, 2002). However, the different approach makes it difficult to adequately compare our results to those produced by alternative methodologies.

Our findings also differ to a degree from other studies relying on the PHDCN data which have reported inhibitory or nonsignificant effects of collective efficacy on youth behaviors, but there are also methodological differences between these studies and ours. Notably, Sampson and colleagues (1997) reported that collective efficacy and concentrated disadvantage reduced crime, but these analyses were based upon data from all 343 NCs, instead of the 80 NCs involved in the LCS. They also relied on data from the adult residents, not youth, to assess criminal outcomes. In contrast, Sampson et al. (2005) found no impact of collective efficacy or concentrated disadvantage on rates of violence reported by youth when using the same 80 NCs examined in the current study. This investigation differed from ours, however, in that it utilized a larger sample (youth from Cohorts 9 to 18), assessed relationships over three waves of data, included different Level 1 control variables, and did not analyze outcomes by gender. Maimon and Browning's (2010) analysis of

the PHDCN data found that collective efficacy and concentrated disadvantage had nonsignificant effects on self-reported violence, but this study did not examine male and female youths separately, relied on data from youth in Cohorts 9 and 12 only, assessed violence at Wave 3 only (and utilized different items to measure violence), measured collective efficacy using somewhat different items, included different Level 1 control variables, and employed different statistical methods compared to the present study. Finally, Molnar et al. (2008) reported that, among males and females in Cohorts 9–15, collective efficacy marginally ($p < .10$) reduced aggression and had no effects on delinquency, with no moderating effects by gender. However, their outcomes were based on parent reports of children's deviance and relied on a different statistical modeling technique that combined data from Waves 1 to 3.

Despite the methodological differences between the current study and prior work, our results regarding male respondents are consistent with some previous tests of social disorganization theory. Many studies have found that structural and social neighborhood factors do not have significant, direct effects on individual rates of delinquency or violence (Bernburg & Thorlindsson, 2007; Beyers et al., 2003; De Coster et al., 2006; Karriker-Jaffe et al., 2009; Maimon & Browning, 2010; Sampson et al., 2005). Some research has suggested that the explanatory power of contextual effects is quite low relative to other risk factors (Elliott et al., 1996; Gottfredson et al., 1991). In line with this view, the results of the current study demonstrated that independent variables posited as important predictors of delinquency in the criminological literature, such as self-control (Gottfredson & Hirschi, 1990) and peer delinquency (Akers, 1985), were better able than neighborhood factors to predict offending among males. Our findings do not negate the possibility that neighborhood effects are mediated by more proximal influences on crime (e.g., such as family or peer factors), as has also been suggested (Leventhal & Brooks-Gunn, 2000; Sampson et al., 2002; Simons et al., 1996), but when assessed in combination, individual and peer risk factors had stronger direct effects on male delinquency than did contextual variables.

The results regarding neighborhood effects on female violence and delinquency are more difficult to account for. In fact, we could find no empirical research that, like ours, found that collective efficacy or less disadvantage *increased* delinquency or violence among girls. Again, many of the methodological differences outlined above could contribute to the disparity in findings. Moreover, analyses based on combined samples of males and females may fail to identify gendered effects if they exist, and researchers have typically not examined males and females separately (i.e., many utilize gender as a control variable or include it as part of an interaction term; see, for example, Molnar et al. 2008).

However, given that no other prior research had shown collective efficacy to increase problem outcomes, we conducted additional analyses

to further explore our findings. Given that our measure of general delinquency contained all of the items in the violence scale, we also examined gender differences in the effects of the two neighborhood variables on nonviolent delinquency, which was measured using all items in the delinquency scale except those in the violence scale. Nonviolent delinquency did not vary significantly across neighborhoods for males or females, indicating that neighborhood factors did not have direct effects on this type of offending for either sex.

We also considered potential mediators of the relationship between collective efficacy and violence to help explain why collective efficacy might increase female offending. We hypothesized that parents living in neighborhoods characterized by higher rates of collective efficacy might allow their children—especially girls, who are typically subject to more parental control—more freedom, trusting that other residents will monitor their activities and intervene to keep children safe if necessary. The bivariate relationship between collective efficacy and parental supervision provided some support for this assumption. Using a dichotomous measure of collective efficacy based on the top quartile (25%) of responses, mean scores on the parent supervision scale were *lower* for girls living in neighborhoods with higher (mean $\frac{1}{4}$ 9.75) versus lower (mean $\frac{1}{4}$ 9.90) levels of collective efficacy, although this difference was not statistically significant ($p = .18$). For boys, the opposite was true, with somewhat *higher* levels of parent supervision in neighborhoods with higher (mean $\frac{1}{4}$ 9.91) versus lower (mean $\frac{1}{4}$ 9.78) levels of collective efficacy (a nonsignificant difference). In addition, parents in high collective efficacy areas were significantly ($p < .05$) more likely to report that their female children were “allowed to wander in public places without adult supervision for more than two hours,” but this difference was not found for male children. Although this was the only one of the 13 items on the supervision scale to demonstrate significant differences according to neighborhood levels of collective efficacy, it suggests that parents in areas marked by trust between residents and high levels of informal social control may feel more comfortable allowing their daughters freedom, which may, in turn, lead to greater opportunities for engaging in violence. It should also be noted that although supervision did not predict offending in the multivariate analyses, there was a significant, bivariate association between more supervision and less violence for girls. In addition, the effect of parental monitoring significantly varied by neighborhood for girls in three of the four outcomes assessed (see Tables 2 and 3) but did not do so for boys.

Our finding that concentrated disadvantage *reduced* reports of any violence among girls (more so than among boys) was also unanticipated. However, this effect could also be explained by differential parenting practices across neighborhoods. Using a trichotomous measure of neighborhood disadvantage rather than the

continuous measure, mean scores on parental supervision were significantly ($p < .05$) higher for girls living in areas with high (mean $M = 9.98$) and medium (mean $M = 9.94$) levels of concentrated disadvantage compared to low levels (mean $M = 9.65$). This relationship was not significant for boys. According to Furstenberg (1993), parents in more disadvantaged neighborhoods are more likely to protect their children from perceived danger in the neighborhood and monitor their behaviors more closely. Although his hypothesis did not consider gender differences in parenting practices, assuming that parents will be more concerned with their daughters' than their sons' safety is congruent with literature identifying gender differences in socialization practices (Cernkovich & Giordano, 1987; Chesney-Lind, 1997; Fagan et al., 2007).

Clearly, these are exploratory and post hoc explanations for why collective efficacy increased girls' offending and concentrated disadvantage reduced their violent behavior, both of which are contrary to the expectations of social disorganization theory. Additional research is needed to replicate and further interpret these findings, including studies that have better measures of parental supervision. The reliability of our parent supervision scale is low ($\alpha = .50$), and most parents endorsed most items, which limits the discriminatory function of this variable. Other potential mediating pathways should also be considered, such as the routine activities of girls living in neighborhoods with varying levels of collective efficacy and concentrated disadvantage. Additional research will help inform the theoretical development of the social disorganization perspective, as well as illuminate pathways to offending that may vary for boys and girls. Although there is much similarity in risk factors for adolescent delinquency, some argue that females may face unique experiences which need to be identified in order to more adequately explain female offending (Chesney-Lind, 1997; Zahn et al., 2008).

Other limitations of this study include reliance on respondents from a relatively small number (80) of NCs. Having additional NCs could have resulted in more stable statistical models and the ability to detect additional gender differences if present. In order to keep the sample size as large as possible, we also chose to limit the analyses to the first wave of data collection. Reliance of cross-sectional data limits our ability to make causal inferences regarding the relationships between neighborhood processes and youth offending, although this limitation is somewhat tempered by the fact that the Community Survey (conducted in 1994–95) was completed before the Longitudinal Cohort Survey (conducted in 1994–97). Finally, we recognize that the data were collected in only one city—Chicago—at only one time point—the mid-1990s—which limits the generalizability of these findings to other contexts. More research using data from other cities will enhance our ability to understand gender differences in contextual effects on youth offending.

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Notes

1. The respondents involved in the community survey were largely independent of the respondents participating in the Longitudinal Cohort Study (LCS).
2. This procedure was conducted by staff at the Inter-University Consortium for Political and Social Research (ICPSR) in order to ensure the confidentiality of the participants of the Project on Human Development in Chicago Neighborhoods (PHDCN).
3. Due to space considerations, a description of the item response model is not provided here. A full description of the model is available upon request from the second author.
4. Intraclass correlation coefficients are not provided here because they are less informative when modeling nonlinear outcomes due to the heteroskedastic nature of the data (see Raudenbush & Bryk, 2002).
5. We also assessed zero-order correlations between neighborhood collective efficacy and aggregate male and female violence (violence count: $r^{1/4} = -.04$ [male], $r^{1/4} = -.02$ [female]; any violence: $r^{1/4} = -.04$ [male], $r^{1/4} = -.03$ [female]) and delinquency (delinquency count: $r^{1/4} = .00$ [male], $r^{1/4} = .06$ [female]; any delinquency: $r^{1/4} = .14$ [male], $r^{1/4} = .01$ [female]). None of these relationships was statistically significant ($p \geq .05$).

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Bios

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