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The "Rural Mystique": Social Disorganization and Violence beyond Urban Communities

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Abstract: *Most studies of social disorganization theory have focused exclusively on urban areas. Few researchers have asked whether the concepts of social disorganization would apply as well in rural or non-metropolitan areas. The current study expands on previous research by asking two distinct questions. First, is social disorganization theory generalizable to rural as well as urban communities? Second, are the concepts derived from social disorganization theory generalizable across violent offense types? Based on non-metropolitan counties in the upper-Midwest region of the United States (N=221), a series of overdispersed Poisson regression models indicate that social disorganization explains geographic variation in violent crime rates in non-metropolitan counties. Implications of these findings are discussed as well as suggestions for future studies.*

Keywords: Social disorganization, violence, rurality, non-metropolitan counties

Introduction

For decades, social disorganization theory has been used to explain geographic variation in crime rates. However, most studies have focused exclusively on urban areas. Few researchers have asked whether social disorganization also applies in areas removed from large, densely-populated cities. Of the studies that have attempted to do this, most have focused exclusively on the southern region of the United States (Lee, Maume, and Ousey, 2003; Osgood and Chambers, 2000). This study expands on previous research by asking two distinct questions. First, are the concepts derived from social disorganization theory generalizable across geographic regions? Second, are the concepts derived from social disorganization theory generalizable across offense types? This study examines counties in the upper-Midwestern region of the United States to determine whether social disorganization applies equally well in this region of the country among non-metropolitan counties. Additionally, we examine whether the concepts are able to explain variation in a variety of violent offense types.

Explicating Social Disorganization Theory

Shaw and McKay's (1942) social disorganization theory contended that crime rates can be explained by the structural characteristics of a community. In particular, Shaw and McKay pointed to economic disadvantage, racial and ethnic heterogeneity, and residential mobility as three features of a community that impact its ability to regulate the behavior of community members. The theory relies on a consensus perspective in which there is widespread agreement that crime is an immediate threat to the community and must be addressed, primarily through informal social control mechanisms (Bursik, 1988). In socially disorganized communities, disadvantage, heterogeneity, and mobility all interfere with the community's ability to exert informal control over behavior. In particular, the impact of economic disadvantage is indirect through ethnic heterogeneity and residential mobility, both of which hinder communication among community members and impede the development of social relationships likely to provide informal control mechanisms (Bursik, 1988; Lee et al., 2003; Sampson and Groves, 1989). The inability to exert informal social controls results in ineffective monitoring and socialization of juveniles within the community. Delinquency arises from the unsupervised activities of these youth and the emergence of a normative system that encourages or tolerates criminal and delinquent behavior (Lee et al., 2003; Shaw and McKay, 1942).

The Role of Social Isolation

Since its original development, social disorganization theory has been clarified and extended by numerous researchers. Of particular interest for this study is the

consideration of the role of social isolation in disorganized communities. Building on the work of Sampson and Wilson (1995), Lee et al. cited research highlighting the importance of population density and the "spatial concentration of disadvantage" (2003:108). They argued that in areas where economic disadvantage is more concentrated, community members have less contact with mainstream, middle-class institutions and norms. This reduces the ability of the community to build social capital and mobilize resources on its behalf, referred to as public control (Taylor, 1997). In addition to the importance of intimate primary groups (private control) and local institutions (parochial control) in exerting social control, the connection of a community to outside communities and its use of those connections to mobilize resources are important sources of social control (Taylor, 1997). To the extent that a community is isolated from other communities, from mainstream social norms, and from outside resources, social and spatial isolation allows for the emergence of a cultural value system that legitimates, or at least tolerates, crime and delinquency (Sampson and Wilson, 1995).

While Sampson and Wilson (1995) discussed social isolation among the urban poor, Lee et al. (2003) suggested that it may also play a role in rural communities. Many non-metropolitan communities have high levels of poverty, often higher than urban poverty rates. Although a lower degree of population density may preclude extreme spatial concentration of disadvantage in rural communities, these communities are often socially and geographically isolated. As a result of much lower population density, residents of rural areas may be just as isolated, if not more so, from mainstream social institutions and also may have limited ability to mobilize resources on their behalf (Lee et al., 2003). A focus on the intersection between population density and the concentration of economic disadvantage suggests the importance of considering social disorganization in rural communities.

Since its initial development and application in Chicago, subsequent tests of the theory have continued to focus on large urban communities while virtually ignoring smaller communities and rural areas (for example, Bursik and Webb, 1982; Heitgerd and Bursik, 1987; Sampson, Raudenbush, and Earls, 1997). To some extent, this may be due to lower crime rates, especially violent crime rates, in rural areas (Bachman, 1992; Laub, 1983; Weisheit, Falcone, and Wells, 1994). However, a large proportion of the U.S. population resides in non-metropolitan areas (Osgood and Chambers, 2000), and Lee et al. (2003) note that social disorganization was developed as a general theory to explain crime in both rural and urban areas. Thus, it is important to consider the different features of urban and rural communities, how those differences impact crime rates, and how the features of rural communities fit into a social disorganization framework.

Variation in Rural and Urban Communities

Urban and rural communities differ in many ways. The stereotypical characterization of rural life encompasses both positive and negative features. For example, in a public opinion study, Willits, Bealer, and Timbers (1990) found that rurality is characterized by positive images of pastoral life, honesty, individualism, and religiosity. Tickamyer and Duncan (1990) also note a tendency to romanticize rural society (see also Hogg and Carrington, 2003). On the other hand, rurality is also often viewed as simply the opposite of modern, urban society, including images of rural residents as disadvantaged, unable to cope, and backwards (Willits et al., 1990).

Websdale (1995) reports that rural communities are characterized by more homogeneous populations and a greater level of social cohesion and shared values (see also Barnett and Mencken, 2002). The social climate in rural areas tends to be more personal with a greater number of community members having intimate or personal relationships with other community members. Rural areas also tend to be both geographically and socially isolated (Feyen, 1989). This combination of factors may lead to suspicion of outsiders and the government and to a greater reliance on informal social control mechanisms in rural communities (Barnett and Mencken, 2002; Websdale, 1998; Weisheit and Donnermeyer, 2000). In contrast, urban centers may be better characterized by anonymity and privacy. Urban communities typically have a greater heterogeneity of values and consequently, greater tolerance of diversity and deviation from those values (Websdale, 1998). Thus, rural areas are generally recognized as being more socially organized than urban areas because they are more homogeneous, have less mobility, and rely more on informal social controls. From a social disorganization perspective, it is not surprising that rural areas have lower crime rates.

The features of rural communities described above point to social organization and a reliance on informal control mechanisms as an explanation of lower violent crime rates in rural compared to urban areas. However, rural communities may also be characterized by extreme poverty (Lee et al., 2003; Tickamyer and Duncan, 1990), a key feature of social disorganization presumed to increase crime rates. The geographic and social isolation of these areas from larger communities also allows for the possibility of concentrated disadvantage as described

by Lee et al. (2003). However, in two studies of rural counties, neither Petee and Kowalski (1993) nor Osgood and Chambers (2000) found a significant impact of poverty on violent crime rates. Bursik (1988) notes that social disorganization theory, as originally presented by Shaw and McKay (1942), never implied a direct effect of poverty on crime. Instead, economic disadvantage was presumed to be related to higher levels of mobility and ethnic heterogeneity which in turn impacted the ability of the community to exert informal control over delinquent behavior. Osgood and Chambers (2000) suggest that this may not be the case in rural communities. Rather, higher levels of poverty in rural areas may be correlated with a greater degree of stability (less mobility and more homogeneity) in the community. Thus, a null finding with respect to the impact of economic disadvantage is not necessarily a fatal flaw for the theory and highlights the need to examine how the features of social disorganization are interrelated in various types of communities.

Hypotheses

Tests of social disorganization theory have primarily relied on the analysis of urban areas (Shaw and McKay, 1942; Bursik and Webb, 1982; Heitgerd and Bursik, 1987). To date, only a few studies have examined the impact of structural factors on violent crime rates in rural areas (Petee and Kowalski, 1993; Osgood and Chambers, 2000). Lee and colleagues (2003) also note that most of this research has been regionally concentrated in the South. Census data indicates that the southern region of the U.S. may be structurally different from other regions of the country. In particular, the upper Midwest tends to have proportionately more white people, be less populated, have a lower percentage of residents in poverty, and be experiencing negative or minimal population growth compared to the South (www.census.gov). Thus, questions about the applicability of social disorganization theory across various types of communities linger. The current study expands on current understanding of the relationship between rurality, social disorganization, and violence by examining whether measures of social disorganization are capable of explaining various forms of violence in non-metropolitan communities in the upper-Midwest region of the U.S.

In line with the study conducted by Osgood and Chambers (2000), this study presents six specific hypotheses derived from social disorganization theory. Social disorganization suggests that violent crime will be positively related to (1) economic disadvantage, (2) residential instability, and (3) racial/ethnic heterogeneity. Sampson (1987) also notes that family disruption may weaken the ability of the family to impose informal control, and family disruption has been incorporated into various studies as an additional feature of social disorganization (Osgood and Chambers, 2000; Petee and Kowalski, 1993). Thus, we also propose that violent crime will be positively related to (4) family disruption.

Additionally, research on the spatial concentration of disadvantage (see Lee et al., 2003) suggests that the absolute poverty level of a community is less important in predicting violent crime than the concentration of economic disadvantage. In communities with highly concentrated poverty, community members may be isolated from conventional, middle-class institutions and values, allowing the breakdown of informal social controls and the emergence of pro-violence social norms. Thus, we also propose that violent crime will be positively related to (5) population density and (6) proximity to urban areas. Both of these could be indicators of spatial isolation consistent with Lee et al. (2003).

Methods

The purpose of the current study is to discern the impact of social disorganization on violent offending in non-metropolitan communities. The sample consists of all 221 non-metropolitan counties in four Midwestern states: North Dakota, South Dakota, Minnesota, and Wisconsin. As noted previously, this region of the country is demographically different from other regions that have received the bulk of the research attention. Thus, it is important to explore whether social disorganization operates similarly here. County-level data addressing features of social disorganization, rural/urban categorization, and crime rates were collected from the Census Bureau, the Department of Agriculture, and the 2000-2002 Uniform Crime Reports (UCR).

Social Disorganization Variables

Using previous studies as a guide, four features of social disorganization were identified: residential instability, family disruption, low socioeconomic status, and ethnic heterogeneity. Data were collected from the 2000 Census reflecting each of these variables. Residential instability was measured as the percent of households that had moved within the previous five years. Higher values indicate a more transient community. Family disruption was measured as the percent of single-mother families in relation to the number of families with children. Socioeconomic disadvantage was measured with two

variables. First, we included an indicator of the proportion of the population living below the federal poverty level. Second, we included the average annual unemployment rate for each county.

The Census also provided data on the percent of the population in each racial group: white, African-American, Asian, and American Indian. The population in this region of the country is predominantly white with a very small representation of African-Americans and Asians (both average below one percent of a county's population). The largest minority group in this region is American Indians, who represent about six percent of the population. We categorized these groups in terms of the proportion of white versus non-white individuals in the county. Following previous researchers, we created an index of diversity, "calculated as $1 - (\sum p_i^2)$, where p_i is the proportion of [individuals] of a given ethnic group, which is squared and summed across the groups that are distinguished (here only white and nonwhite). This index reflects the probability that two randomly drawn individuals would differ in ethnicity" (Osgood and Chambers, 2000:93). Scores on this variable range from 0 to 0.5 with higher values indicating greater diversity. Counties in these four states had an average score of 0.1, indicating a fairly homogeneous population (see Appendix A).

Urban/Rural Variables

In practice, defining urban and rural communities is a difficult process. Different government entities have differing definitions, and these definitions do not always consider those features in our common understanding of rurality. Historically, definitions considered communities with fewer than 2,500 residents as rural, and everything else was urban. Logan, Walker, and Leukefeld (2001) suggest that this strict urban-rural dichotomy does not realistically represent the variety in communities. They suggest instead looking at urban (primarily metropolitan), urban-influenced, and rural communities. This classification scheme takes into account smaller communities within fairly close proximity of a metropolitan area and thus able to access urban resources (Logan et al., 2001). Similarly, Lee and colleagues (2003) note that spatial and social isolation may be a crucial factor compounding the impact of structural disadvantage on crime rates. A classification scheme that distinguishes the connections between counties would be important in assessing the isolation of that population. The Economic Research Service (ERS) of the U.S. Department of Agriculture attempts to measure rurality in such a way.

The ERS Urban-Influence Codes were developed to take into account factors such as population size, urbanization, and access to larger economies (Economic Research Service, 2002a). This strategy resulted in a scale from 1 to 12 that allows for the categorization of counties. Categories 1 and 2 refer to large (one million residents or more) and small metropolitan counties respectively. Categories 3 through 7 refer to counties that are adjacent to metropolitan counties. The specific numerical ranking is determined by the size of the metropolitan county to which they are adjacent and whether the county has its own town. Categories 8 through 12 refer to counties that are not adjacent to metropolitan counties. The specific ranking is determined by the size of the county and whether it has its own town. The non-metropolitan counties in this sample were coded using these Urban-Influence Codes (Economic Research Service, 2002b). Five specific categories were then derived from these codes based on the size of the largest city within the county (micropolitan or not) and adjacency to larger counties (adjacent to metropolitan, adjacent to micropolitan, or not adjacent). About 11 percent of counties were micropolitan (having an urban cluster of at least 10,000) and adjacent to a metropolitan county, and about 14 percent were micropolitan, non-adjacent counties (see Appendix A). The majority of counties in this sample were non-core with 31 percent adjacent to a metropolitan county, 24 percent adjacent to a micropolitan county, and 21 percent not adjacent (i.e., the most rural and isolated).

In addition to the Urban-Influence Codes, the population density of each county (population per square mile) was also included. Due to the variability in the geographic size of counties in this sample and in population density (see Appendix A), it appears that density is a better indicator of rurality than the overall population. Additionally, social and spatial isolation may play an important role in predicting crime rates, and isolation may be better indicated by density.

Crime Variables

Hogg and Carrington note that violence in rural communities has often been ignored because of "deep-rooted cultural assumptions about the nature of community" (2003:294), especially the image of rural communities as peaceful and wholesome. Their analyses of crime and violence in Australia indicate that standard comparisons of crime rates between urban and rural communities tend to be overwhelmed by property crimes, obscuring patterns of violent crime in rural areas deserving of more research attention than has typically been paid (Hogg and Carrington, 2003). Additionally, Lee et al. (2003) point

out that the concentration and isolation of disadvantage may lead to the emergence of an oppositional culture that finds expression through violence. Therefore, these analyses focus on four violent offense types: aggravated assault, other types of assault, robbery, and rape. For these violent offenses, official data on crimes reported to police in each county were collected from the 2000-2002 UCR and were then summed over the three years (see Osgood and Chambers, 2000). Wiersema, Loftin, and McDowall (2000) note that count data are preferable to crime rates because the former are better suited to handle variance in population sizes across small geographical areas (see also Nolan, 2004). Rates tend to be inflated with very small population sizes. Because of the small population size of a majority of the counties in this region (see Appendix A), count data are more appropriate than rates for the purposes of this study.

Results

This study began with a consideration of whether social disorganization variables account for variation in violent offending in non-metropolitan communities in the upper-Midwestern United States. Overdispersed Poisson regression models were estimated to test each of the six hypotheses. Poisson models are more appropriate for count data than OLS regression because the distribution of count data requires that predicted values must be non-negative. OLS regression assumes a continuous, unbounded, and normally distributed dependent variable, which is unrealistic in this situation (see Gardner, Mulvey, and Shaw, 1995; Lee et al., 2003). Additionally, errors in OLS analyses with count data are inherently non-normal and heteroscedastic, violating key assumptions of OLS regression (Gardner et al., 1995). Using a Poisson modeling strategy also accounts for the highly skewed nature of the count data (i.e., many counties report few offenses with a few counties reporting high counts).

Social Disorganization and Violent Offending

The first set of hypotheses suggests that violent crime will be positively related to (1) socioeconomic disadvantage, (2) residential instability, (3) ethnic heterogeneity, and (4) family disruption. In other words, the number of violent crimes committed will be higher in counties that are more unstable and more diverse and that have a higher level of family disruption and poverty. Table 1 presents the overdispersed Poisson regression results for aggravated assault, other assaults, robbery, and rape.

Table 1. Overdispersed Poisson Regression Models Predicting Aggravated Assault, Other Assaults, Robbery, and Rape

(n = 221)

	Aggravated assault		Other assaults		Robbery		Rape	
Variables	b (Std. error)	t-value	b (Std. error)	t-value	b (Std. error)	t-value	b (Std. error)	t-value
Constant	3.986 (1.794)	2.22 *	4.84 (1.777)	2.72 **	-1.814 (2.814)	-0.65	2.487 (3.099)	0.80
Mobility	0.063 (0.018)	3.56 ***	0.07 (0.017)	4.10 ***	0.079 (0.029)	2.74 **	0.067 (0.031)	2.18 *
Index of diversity	2.025 (1.064)	1.90	1.803 (1.031)	1.75	2.196 (1.978)	1.11	2.386 (2.007)	1.19
Single mother	0.101 (0.026)	3.89 ***	0.128 (0.025)	5.10 ***	0.124 (0.045)	2.75 **	0.088 (0.048)	1.86
Poverty	-0.145 (0.021)	-7.05 ***	-0.152 (0.020)	-7.66 ***	-0.236 (0.039)	-5.98 ***	-0.206 (0.041)	-5.04 ***
Unemployment	0.066 (0.034)	1.96 *	0.074 (0.033)	2.26 *	0.096 (0.050)	1.90	0.094 (0.055)	1.71
Percent 18-24 years old	0.017 (0.021)	0.81	0.025 (0.020)	1.23	0.049 (0.034)	1.45	0.039 (0.037)	1.07
Male	-0.037 (0.017)	-2.20 *	-0.038 (0.017)	-2.26 *	-0.011 (0.026)	0.41	-0.035 (0.029)	-1.22
Scale parameter	4.443		9.076		1.923		3.425	

***p < .001; **p < .01; *p < .05.

In addition to the social disorganization variables, the regression models included controls for the male/female ratio in the county and for the percent of the population between 18 and 24 years old. Consistent with two of the hypotheses, residential instability and family disruption significantly predicted assaults controlling for other factors. Higher levels of residential instability significantly increased both aggravated assaults (b = 0.063, t = 3.56) and other assaults (b = 0.070, t = 4.10). A higher percentage of single-mother families also significantly increased both types of assaults (b = 0.101, t = 3.89 for aggravated; b = 0.128, t = 5.10 for other). However, racial heterogeneity had no significant impact on either type of assault.

The two measures of low socioeconomic status were significantly related to assaults, but in opposing directions. As expected, higher levels of unemployment significantly increased both types of assault (b = 0.066, t = 1.96 for aggravated; b = 0.074, t = 2.26 for other). However, a higher proportion of families in poverty significantly reduced the number of both aggravated (b = -0.145, t = -7.05) and other assaults (b = -0.152, t = -7.66). Contrary to our hypothesis and to the predictions of social disorganization theory, increased poverty does not predict higher crime rates in non-metropolitan counties in the upper Midwest. Rather, it is significantly related to fewer assaults in this region.

A similar pattern of results emerges with robbery and rape offenses. Residential instability significantly increased the number of robberies (b = 0.079, t = 2.74) and rapes (b = 0.067, t = 2.18). A higher percentage of single-mother families increased the number of robberies (b = 0.124, t = 2.75), but the impact on rapes was not statistically significant. The index of diversity was not significantly related to either the number of robberies or rapes. The pattern of results for poverty uncovered in the analysis of aggravated and other assaults also appears here. While unemployment rates do not significantly predict either offense type, higher levels of poverty predicted significantly fewer robberies (b = -0.236, t = -5.98) and rapes (b = -0.206, t = -5.04).

In these analyses, the structural social disorganization variables were found to be consistently related to violence across all offense types with a couple of exceptions. As predicted by the theory, residential mobility and family disruption were found to increase violence. As expected, unemployment significantly increased assaults, but there was no significant effect for robbery or rape. Poverty, on the other hand, was found to be negatively correlated to violent crime. Regardless of crime type, violent crime was higher in counties that were more unstable, that had a higher level of family disruption, and that were less poverty stricken. Contrary to the hypothesis and the theory, racial heterogeneity was not related to violent offending in these models. Thus partial support was found for the structural hypotheses.

Rurality and Violent Offending

Two additional hypotheses addressed rural/urban differences in social disorganization and violent crime and the role of social isolation. Hypotheses 5 and 6 suggest that violent crime will be related to population density and proximity to urban areas (i.e., counties with greater density and closer to urban areas will have higher violent crime rates). Table 2 presents a comparison between the different county types in terms of the numbers of each

Table 2. Average Offenses (Natural Logged) by Urban-Influence Code Categories

UIC categories		Aggravated assault	Other assaults	Robbery	Rape
Micropolitan, adjacent to metro		3.82	5.02	1.52	2.09
Micropolitan, not adjacent to metro		3.11	4.88	1.03	1.62
Non-core, adjacent to metro		2.44	3.58	0.44	1.02
Non-core, adjacent to micro		1.69	2.83	0.27	0.66
Non-core, not adjacent to metro or micro		1.78	3.00	0.13	0.52
	F-ratio	19.71 **	18.71 **	22.69 *	14.78 **
Adjacent to metropolitan		2.80	3.96	0.72	1.30
Not adjacent to metropolitan		2.05	3.37	0.40	0.83
	t-ratio	4.20 **	2.73 **	2.83 **	3.17 **
Micropolitan		3.43	4.94	1.25	1.83
Non-core		2.02	3.18	0.30	0.77
	t-ratio	7.40 **	7.95 **	6.59 **	5.67 **

**p < .01.

violent offense. For all four offenses, micropolitan, metro-adjacent counties have the highest number of offenses, followed closely by micropolitan, non-adjacent counties. The non-core counties have significantly fewer offenses for all four violent crimes.

Table 3 presents the results of Poisson regression models predicting aggravated assaults, other assaults, robbery, and rape, with the structural social disorganization variables and including population density and categories derived from the Urban-Influence Codes. In these models, the effect of the social disorganization variables remains largely the same. Controlling for population density and proximity to urban areas, racial heterogeneity, single-mother households, and unemployment significantly increase the numbers of aggravated and other assaults. Higher levels of poverty significantly reduce the number of assaults. Additionally, residential mobility affects assaults in the expected direction, but the impact is only significant for other assaults.

In terms of "rurality," higher levels of population density significantly increase the numbers of both aggravated (b = 0.656, t = 8.31) and other assaults (b = 0.382, t = 4.81). When counties were categorized according to their urban influence code, an interesting pattern of results emerged. Micropolitan counties did not differ, regardless of whether they were adjacent to a metropolitan county or not. However, all of the non-core counties had significantly fewer aggravated (b = -0.487, t = -3.30 for non-core, metro-adjacent; b = -0.542, t = -2.79 for non-core, micro-adjacent; b = -0.778, t = -3.17 for non-core,

Table 3. Overdispersed Poisson Regression Predicting Aggravated Assault, Other Assaults, Robbery, and Rape with Urban Influence Variables

(n = 221)

	Aggravated assault		Other assaults		Robbery		Rape	
Variables	b (Std. error)	t-value	b (Std. error)	t-value	b (Std. error)	t-value	b (Std. error)	t-value
Constant	2.454 (1.366)	1.80	2.992 (1.506)	1.99 *	-6.938 (2.401)	-2.89 **	-1.004 (2.150)	-0.47
Mobility	0.021 (0.014)	1.47	0.034 (0.015)	2.19 *	0.001 (0.028)	0.00	0.011 (0.024)	0.47
Index of diversity	2.548 (0.718)	3.55 **	1.790 (0.807)	2.22 *	2.134 (1.571)	1.36	2.405 (1.283)	1.88
Single mother	0.060 (0.020)	2.91 **	0.101 (0.022)	4.59 ***	0.087 (0.044)	1.97 *	0.043 (0.037)	1.17
Poverty	-0.035 (0.016)	-2.23 *	-0.069 (0.018)	-3.89 ***	-0.046 (0.036)	-1.30	-0.038 (0.030)	-1.27
Unemployment	0.073 (0.026)	2.79 **	0.074 (0.027)	2.72 **	0.122 (0.045)	2.70 **	0.121 (0.041)	2.99 **
Population density (natural log)	0.656 (0.079)	8.31 **	0.382 (0.080)	4.81 ***	0.997 (0.169)	5.90 ***	0.941 (0.142)	6.64 ***
Percent 18-24 years old	-0.028 (0.017)	-1.64	-0.010 (0.018)	-0.54	-0.003 (0.031)	-0.10	-0.011 (0.028)	-0.40
Male	-0.026 (0.013)	-1.95	-0.017 (0.014)	-1.16	0.030 (0.022)	1.34	-0.015 (0.021)	-0.73
Urban influence categories								
Micro, not adjacent to metro	-0.097 (0.136)	-0.72	0.249 (0.142)	1.75	0.322 (0.232)	1.39	0.040 (0.212)	0.20
Non-core, adjacent to metro	-0.487 (0.147)	-3.30 **	-0.519 (0.170)	-3.06 **	-0.672 (0.280)	-2.40 *	-0.481 (0.236)	-2.03 *
Non-core, adjacent to micro	-0.542 (0.194)	-2.79 **	-0.557 (0.218)	-2.56 *	-0.703 (0.396)	-1.77	-0.133 (0.298)	-0.45
Non-core, not adjacent to metro or micro	-0.778 (0.245)	-3.17 **	-0.821 (0.267)	-3.08 **	-0.760 (0.538)	-1.41	-0.496 (0.425)	-1.17
Scale parameter	3.161		7.337		1.559		2.265	

***p < .001; **p < .01; *p < .05.

neither adjacent to metro or micro) and other assaults (b = -0.519, t = -3.06 for non-core, metro-adjacent; b = -0.557, t = -2.56 for non-core, micro-adjacent; b = -0.821, t = -3.08 for non-core, neither adjacent to metro or micro) compared to micropolitan counties adjacent to metropolitan counties. Given the similarity in magnitude for the non-core counties, these results might suggest that proximity to metropolitan areas is less important in predicting violent crime than the size of cities within the county. Additional analyses exploring the nature of this effect (comparing micropolitan to non-core and adjacent to not adjacent) appear to support this contention. (Analyses are not presented here, but are available on request.)

In the Poisson regression models predicting robbery and rape, a different picture emerges. Unemployment is the only structural social disorganization variable that maintains an effect when population density and urban influence code categories are added. Higher levels of unemployment are significantly related to higher levels of robbery (b = 0.122, t = 2.70) and rape (b = 0.121, t = 2.99). Percentage of single-mother families significantly predicts robbery (b = 0.087, t = 1.97) but not rape. Of the population variables, population density significantly impacts the numbers of both robberies (b = 0.997, t = 5.90) and rapes (0.941, t = 6.64). Only one significant impact was found among the Urban-Influence Code categories. While micropolitan counties were again similar regardless of whether or not they were adjacent to a metropolitan county, non-core, metro-adjacent counties had significantly fewer robberies (b = -0.672, t = -2.40) and rapes (b = -0.481, t = -2.03) compared to micropolitan, metro-adjacent counties. The coefficients for the other non-core counties were of similar magnitude but not significant. Methodologically, the lack of significance for these groups may be related to the extremely limited variability within the most rural counties.

Discussion and Conclusions

This study examined the impact of structural characteristics on violent offending in the upper Midwest. The results are largely consistent with other studies exploring social disorganization in non-metropolitan communities. Violent offenses were significantly associated with residential instability and family disruption. As expected by social disorganization theory, these results would suggest that communities that are more unstable and experiencing higher levels of family disruption are less able to exert formal and informal social controls over violent offending. However, there was no relationship between heterogeneity and violent offending in this region with the exception of models predicting assaults and controlling for population density. This may be a result of the unique racial structure of counties in this region. This region of the country tends to be very homogeneous with a small minority population. It may be that there is too little variation in this variable to detect any impact. Alternatively, the lack of a significant effect may be reflective of the overall racial stability in this region. As Bursik and Webb (1982) note, the racial distribution of a community is less important than the speed of racial change within the community. Rapid racial change (turnover) is predictive of higher crime rates. With such small minority populations in this region, most counties never even approach the racial distribution characteristic of turnover. Therefore, we would not expect an impact of race on violent crime.

Similar to Osgood and Chambers (2001) and Petee and Kowalski (1993), our results diverge from the existing literature in terms of the impact of poverty on violent crime. Research on social disorganization in urban areas has found an expected positive relationship between poverty and crime rates (i.e., higher levels of poverty are associated with higher crime rates; see discussion in Osgood and Chambers, 2000). As noted, studies of social disorganization in rural counties, however, have found no effect of poverty. In this study, poverty was negatively correlated with violent offending. Poorer counties had significantly fewer violent crimes controlling for other structural factors. As Osgood and Chambers (2000) note, this may still support the underlying reasoning of social disorganization theory that the impact of poverty is mediated by residential instability and ethnic heterogeneity. For example, poorer, rural communities may be more stable and homogeneous. Thus, we might expect that these counties would have lower violent crime rates. In particular, residential mobility appears to be a key factor here, correlating negatively with poverty ($r = -0.19$, $p < .01$). Poorer counties in this region are more stable. From a social disorganization perspective, it is not surprising to see lower violent offending in these counties. We did find a significant effect of unemployment in the expected direction. Lee et al. (2003) discuss the impact of deindustrialization in rural communities producing economic disadvantage as evidenced by unemployment rates. From their perspective, this may reflect a strain argument that communities experiencing higher levels of unemployment are more strained, which produces higher levels of violent crime.

It is interesting to note the impact of urban-influence code categories in these models. It seems that whether a county is adjacent to larger counties or economies is less important in predicting violent offending than a simple

consideration of the size of the town within the county. This classification is admittedly an incomplete measure of social and geographic isolation, but the results suggest further research is necessary in this direction to more fully explore the suggestions of Lee and colleagues (2003). Additionally, the social disorganization model appears to break down for robbery and rape when the county classifications are added. Robbery, in particular, is largely an urban crime, and when categories are created in this way, this distinction becomes very obvious. Robbery is an extremely rare event in non-core, non-adjacent counties; there is little variance for social disorganization to explain. Methodologically, rape is also a very rare event in the smallest, most rural counties. It is important to explore this more fully with additional research to determine whether this is an artifact of using official data.

One major limitation of this study is its reliance on official data. As Felson et al. (2002) note, there may be differences between individuals who report their victimization to police and those who do not. If individuals in rural areas rely more on informal social control, it may be that they are less likely to report offenses to police, preferring to deal with incidents outside of the formal criminal justice system (Weisheit et al., 1994). Additionally, residents and police may have more personal relationships in rural communities, leading police to respond more informally in certain situations (Weisheit et al., 1994). In other words, police in rural areas may be more likely to issue warnings without filing an official report because they know the individuals involved. Therefore, it is important to examine differences in victimization data across counties as well.

An additional limitation is county-level data which may lead to a false sense of similarity within these fairly large geographic units. It is possible that certain towns or neighborhoods within counties are more rural and isolated than others. The research on collective efficacy highlights the need to look beyond the county level at the level of towns or neighborhoods (see, for example, Benson et al., 2003; Van Wyk et al., 2003). Studies should also include individual-level measures of collective efficacy and social isolation as well as offending. While this study explores the spatial isolation of smaller counties from larger ones, the data cannot address the concentrated disadvantage described by Lee et al. (2003) on a smaller scale. Statistical models, such as Hierarchical Linear Modeling (see Bryk and Raudenbush, 1992), would also aid in examining the interplay between structural features of geographic areas and individual offending. This strategy would permit an exploration of whether the impact of structural factors is mediated by collective efficacy and/or social isolation. Thus, future research should incorporate other measures of violent offending (i.e., victimization or self-report data) and measurement at the individual or neighborhood level.

Results from this study provide support for the basic tenets of social disorganization theory. In addition, it is apparent that the theory's framework applies across various types of violent offending as well as across different regions and population types.

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Appendix A. Descriptive Statistics for Variables

(n = 221)

Variables	Mean	Standard deviation	Minimum	Maximum
Offenses (summed 2000-02)				
Aggravated assault	22.69	30.85	0	166
Other assaults	101.28	143.78	0	722
Robbery	1.63	3.42	0	21
Rape	4.63	8.66	0	61
Social disorganization				
Percent living in different house	35.19	6.37	19.4	60.6
Percent single mother families	14.32	5.11	4.5	33.7
Percent below poverty level	13.37	7.92	4.4	56.9
Annual unemployment rate	4.66	2.02	1.3	16.5
Index of diversity	0.10	0.11	0.01	0.5
Urban/rural variables				
Population	16,655	17,241	767	93,759
Population density	21.03	25.44	0.5	168.9

UIC categorical	N	Percent
Micropolitan, adjacent to metro	24	10.9 %
Micropolitan, not adjacent to metro	30	13.6
Non-core, adjacent to metro	68	30.8
Non-core, adjacent to micro	53	24.0
Non-core, not adjacent to either metro or micro	46	20.8