

STRUCTURAL COVARIATES OF HOMICIDE RATES: DOES TYPE OF HOMICIDE MATTER?

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This research extends a 1990 study by Land, McCall, and Cohen on the structural covariates of homicide rates. Examining neighborhoods in St. Louis, this study assesses whether socioeconomic and demographic characteristics are correlated with different types of homicide, thereby addressing the question of whether homicides are sufficiently distinct in nature that their levels are not equally associated with community characteristics. The findings indicate that while residential instability is associated only with felony killings, economic disadvantage is associated with all of the homicide categories. The theoretical significance of the findings for theories of violent crime is discussed.

Keywords: *homicide types; neighborhood disadvantage; social disorganization*

In 1990, Land, McCall, and Cohen published an important study that addressed the question of whether structural covariates of homicide rates are invariant across time and social space. They did an extensive review of the literature and discovered that the findings obtained in 21 studies were inconsistent across time periods and geographical units. The concern for the authors was the source of this inconsistency. They posited that it may be due to statistical or methodological artifacts of studies such as different units of analysis, samples, model specifications, and problems of analysis and inference. However, Land et al. did not rule out the possibility that there may be no

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invariant correlates of homicide rates; that is, the effects of structural characteristics on homicide rates may be so context specific that they vary over time and level of analysis.

After examining the findings of prior studies, discussing issues of research design and statistical inference, and creating a baseline model that estimates 11 structural correlates of homicide rates for cities, metropolitan areas, and states in 1960, 1970, and 1980, the authors concluded that differences in studies' research procedures coupled with data-analysis and statistical-inference problems account for the disparate findings. In particular, they argue that much of the inconsistency is caused by collinearity among the regressors (Land et al. 1990:951). Land et al. reported that among their six structural indexes/covariates, three effects stand out in strength and invariance: deprivation index (which includes a measure for percent Black), population structure index, and percent divorced covariate, with the deprivation index having by far the strongest and most invariant effect. These factors show strong relationships to homicide at virtually all levels of analysis and time periods.

In the closing paragraph of the study, the authors raised an important question regarding the extent to which the invariances found for covariate relationships to the total homicide rate apply to disaggregated rates as well. Land et al. asked whether the deprivation index, population structure index, and percent divorced covariate are associated with different subtypes or categories of homicide. Key to this question is the idea that homicide is multidimensional; homicides vary in terms of the motive, characteristics of the victim and offender, setting, and circumstances. For example, a homicide in which a female suspect kills a male victim, her lover, during a heated argument in the home can be considered distinct from a homicide in which a young gang member robs and then kills an intoxicated stranger who is drinking in an alley; these killings are different with respect to a number of characteristics. Given such variation, it may be hypothesized that different types of homicide may have different correlates, patterns, and causes. These correlates may be individual-level characteristics or attributes of geographic units, such as those studied in Land et al. Furthermore, it is likely that some determinants may exhibit broad-ranging influence across many categories of homicide whereas others may be limited to specific types.

Building on the findings from the Land et al. (1990) analysis, this study addresses the question of whether the invariances they found apply to disaggregated homicide rates. Specifically, this study examines the relationship between neighborhood structure and homicide, with a focus on how neighborhood composition may be related to the nature or type of lethal violence that communities produce. In so doing, this research addresses the question of whether neighborhood characteristics are related to all kinds of

homicide, or whether homicides are sufficiently distinct in nature that their levels are not equally associated with certain structural covariates.

*THEORETICAL PERSPECTIVES ON
NEIGHBORHOOD STRUCTURE AND HOMICIDE*

The above-mentioned issues are related to a question that social disorganization theorists have discussed for decades: How does variation in community context relate to variation in the extent of crime and violence? These theorists are interested in the structural sources of violence and ask what it is about community structures and cultures that produce differential rates of crime.

In particular, Chicago School theorists such as Shaw and McKay (1942), among others, proposed a community-level theory of social disorganization that describes how features of the urban environment such as racial and ethnic heterogeneity, residential mobility, and low socioeconomic status lead to high levels of social disorganization in communities. In general terms, social disorganization refers to the inability of a community to realize the common values of its residents and maintain effective social controls (Kornhauser 1978:120). Empirically, the intervening dimensions of social disorganization can be measured in terms of the prevalence and interdependence of social networks in a community and in the span and intensity of collective supervision that the community directs toward local problems (Bursik 1988:521). Since the work of Shaw and McKay and others, a major goal of researchers who adopt this approach has been to identify additional sources of social disorganization including family disruption, relative poverty, and racial segregation.

A road less traveled for disorganization theorists, however, involves understanding how community characteristics are associated with the nature of crime and violence that neighborhoods produce. Neighborhoods not only experience different levels of violence but also experience qualitatively different types of violence, begging the question, How does the structure of a community influence the forms of deviant adaptation that emerge there? Regarding homicide, the question becomes, Are the neighborhood characteristics associated with one type of homicide (such as the type that occurs between intimates due to an argument) the same characteristics associated with a qualitatively different type of homicide (such as a robbery killing that occurs between strangers)? If certain structural covariates are equally associated with all types of homicide, then this would suggest that lethal violence, whatever the type, may have underlying or root causes. It may also suggest

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that what makes a killing be of one type and not another may be more related to micro-environmental characteristics of the homicide, or the specific circumstances surrounding the killing, than to the overall structure of the community. However, if this is not the case, that is, if certain structural covariates are not equally correlated with all homicide types, then this may suggest that a neighborhood's makeup is intimately linked to the production of criminal violence that occurs there, not just in terms of the frequency but also in terms of the nature of the violence. Examining how neighborhood structure is related to both the frequency and the type of violence that neighborhoods produce represents a key step in the quest to specify and understand community correlates of violence.

To address these issues, one must disaggregate the homicide rate into specific categories. The first systematic attempt to categorize homicide events on several conceptually important dimensions was Marvin Wolfgang's (1958) classic study, *Patterns in Criminal Homicide*. Since Wolfgang's study, the notion that homicides should not be treated as a homogeneous group and that different types of homicides may have different correlates, patterns, and causes has generally taken root (Flewelling and Williams 1999); criminologists and sociologists have been more sensitive to the importance of disaggregating homicide rates.

In a majority of these studies, the focus has been on the victim-offender relationship. Earlier work (Parker and Smith 1979) demonstrated that subculture and poverty indicators are correlated with primary homicides (or those in which the victim and offender have a primary relationship) but not with nonprimary homicides (or those in which the victim and offender do not have a primary relationship) across U.S. cities. In an attempt to disentangle subcultural and socioeconomic effects, Parker (1989) extended the classification scheme to include the following four types of homicide: (1) robbery, or nonprimary homicides that occur during a robbery; (2) other felony, or homicides that occur during serious crimes other than robbery; (3) primary nonintimate, or homicides that occur between acquaintances who do not have an intimate relationship; and (4) family intimate, or homicides that occur between spouses. Parker found that poverty is significantly related to three of the four categories, and in two of those (family intimate and other felony) it was clearly the dominant predictor. In contrast, poverty rates were not significantly related to robbery killings. Percent Black was found to be significantly related to two types—robbery and primary nonintimate—while the effects of inequality and percent of the population aged 20 to 34 were consistently nonsignificant. Parker interpreted these findings as evidence that the classification of homicide should be pushed to its theoretical limits and suggested other factors that should be considered in the further refinement of the victim-

offender typology, such as the presence of weapons and the involvement of drugs and/or alcohol in the killing (Parker 1989:1000).

Williams and Flewelling (1988) also addressed these issues in their study of disaggregated homicide rates in American cities. They used a theoretically integrated model to guide the calculation of disaggregated rates; the basis of disaggregation is derived from the theoretical relationships proposed by the social disintegration, resource deprivation, and violent cultural orientation perspectives, and includes the motive and victim-offender relationship. Williams and Flewelling found that resource deprivation and indicators of social disintegration have significant effects across the subtypes, although the magnitude of the effects varies, while indicators of violent cultural orientation are confined to homicides resulting from interpersonal conflicts.

More recent research has built on these findings. Kovandzic, Vieratis, and Yeisley (1998) reconsidered the roles that poverty and inequality play in promoting homicide by examining the relationship between these factors and disaggregated rates across U.S. cities in 1990, a time period following the largest increase in the economic gap between rich and poor in our nation's history. The authors created the following three homicide categories based on the victim-offender relationship: family members, acquaintances, and strangers. In line with earlier research, they found that inequality and poverty have varying effects depending on the type of killing analyzed. Inequality was related to family and stranger but not acquaintance homicide, while poverty was only related to acquaintance homicide. On the other hand, percent Black was related to all three types and emerged as the strongest predictor in each model.

To date, only one study examined the correlates of disaggregated homicide rates at the census-tract level. Miles-Doan (1998) explored whether neighborhood context is as important in explaining tract-level variation in the incidence of violence between intimate partners as it is in explaining violence between other family members, friends, or acquaintances. The results once again support the claim that the correlates of homicide rates (and other forms of violence) depend on the type of violence under consideration, as structural density, residential mobility, and resource deprivation explain more variation in rates of violence involving other family, friends, and acquaintances than in rates of intimate violence.

Finally, looking at variation within one type of violence—spousal violence against women—Macmillan and Gartner (1999) pointed out that there are qualitatively different types of spousal violence as well. More importantly, these types likely have different correlates. Using latent structure analysis, the researchers identified four classes—no violence, interpersonal conflict, nonsystematic abuse, and systematic abuse—that vary in terms of level

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and nature of violence and the presence or absence of sexual aggression, and determined the extent to which individual-level and contextual factors are associated with these classes. Macmillan and Gartner found that the correlates differ for each class, with factors such as woman's education level, length of relationship, man's drinking, and household size affecting some (but not all) categories of spousal violence.

Collectively, existing studies highlight the importance of considering a range of types in the examination of the correlates of homicide rates. While much groundwork has been laid, much remains to be studied. First, the majority of these studies disaggregate homicide rates on only one characteristic: the victim-offender relationship. While important, there are other factors that play a critical role in homicide events and that warrant consideration. This issue is addressed in the present research using cluster analysis to consider and include as a basis for disaggregation additional factors such as motive, the presence of alcohol and drugs, and the type of weapon used. Cluster analysis is particularly useful in that the classification scheme can take into account multiple characteristics of the killing; thus, homicides can be categorized along numerous dimensions.

Second, most research has studied the relationship between factors such as poverty or racial composition and disaggregated homicide rates at the state, SMSA, and city levels, yet social disorganization theory is couched at the neighborhood level of explanation as the main process linking social environments and violence depends, at least to some extent, on interaction with others who live nearby (Sampson 1986). Excluding Miles-Doan (1998), few studies examine the correlates of disaggregated homicide rates at the neighborhood level, and thus in line with the recommendation that researchers establish whether similar patterns exist at lower levels of analysis, this study focuses on neighborhood homicide rates.

Finally, the current research builds on the Land et al. (1990) study using total and disaggregated rates, and in so doing, answers the critical question they pose at the conclusion of their study: Are key neighborhood characteristics associated with all types of homicide or are homicides sufficiently distinct in nature that their levels are not equally associated with certain structural factors?

CLUSTER ANALYSIS OF HOMICIDES

Cluster analysis is the generic name for a variety of procedures that can be used to create a classification. These procedures empirically form clusters, or groups of highly similar entities. Here, cluster analysis is used to determine whether homicides with different characteristics group into types.¹

Cluster Sample, Variables, Method, and Measures

The cluster sample, taken from the St. Louis Homicide Data Set, contains information on 2,161 homicides that occurred in St. Louis between 1985 and 1995. These killings represent criminal homicides that were compiled from case files maintained by the St. Louis Metropolitan Police Department and the supplemental files submitted by investigating officers. For each case, information about the suspect(s), victim(s), and event were recorded;² the coding instrument includes more than 80 items related to the killing.

All information from police files was hand coded by trained coders. In addition to coding relevant variables, a narrative was constructed that provides an account of each homicide describing what occurred, who was present, whether there were bystanders, and other important information. The source of these narratives is police reports (including a detailed description of the crime scene and surrounding location, any mention of physical evidence, a suspect interview, and witness testimonies). While most variables used in the study come directly from police files, a small number were coded from the narratives including cases in which a motive was not entered by police, the location of the homicide, and the presence/absence of victim precipitation.³

A potential limitation of these data is related to the accuracy, completeness, and consistency of information contained in police records. The St. Louis police department clears a high percentage of cases and, as a consequence, has more complete records than in cities with lower clearance rates (Decker 1996:431). Moreover, as Wolfgang (1958) claimed, "Criminal homicides known to the police, investigated, recorded, and procedurally followed through to conclusion provide the most valid and comprehensive data for description and analysis, as well as the best index of the amount and nature of this offense" (p. 17).⁴

If research results are to be valid, the data on which they are based, the individuals involved in the analysis, and the processes that yield the results all must be reliable. In light of this concern, a test of intercoder reliability was carried out. An independent researcher read through the narratives and coded a random subset of the cases (roughly 10%). Agreement coefficient alphas were computed for the variables, and the alphas indicate that we can be strongly confident that the high agreement levels between coders did not result from chance; the alphas range from a low of .78 for retaliation motive to a high of .94 for homicide location: public/private. Specific details and results from the reliability tests are available from the author on request.

Not all 2,161 homicides were included in the study sample. First, homicides classified as so-called open cases in which an offender is not identified were excluded ($n = 338$, 18%) as missing data, particularly suspect data, invalidate subtyping these cases. Second, missing values for some of the

cluster variables from cleared cases further reduced the sample. Thus, the final sample for cluster analysis contained information on 1,557 homicides (72% of all cases).⁵

From more than 80 variables that characterize each killing, the list was narrowed to 16 cluster variables. The rationale for choosing these characteristics was conceptual and empirical. Conceptually, the variables include fundamental aspects of the homicide: characteristics of the victim, the offender, their relationship, and the act of homicide itself. Variables not theoretically relevant (e.g., homicide time of day) were excluded. Empirically, all variables had to have a sufficient number of cases; variables that were statistically rare (e.g., child abuse motive) were not included. Given these considerations, the clustering variables include the following: motives (heat of anger, robbery, drugs, retaliation); facilitating factors (whether the homicide was drug related, gang related, alcohol related); victim-offender relationships (strangers, friends/acquaintances, family members); characteristics of the victim and offender (victim's gender, suspect's gender, suspect's status as a juvenile); and causes of death (shot, stabbed, beaten). For an explanation of how these variables were coded, see note 3.

Given the binary nature of the data, the most appropriate clustering method is the hierarchical agglomerative method. In this method, clustering begins by finding the closest pair of cases according to a distance measure (specified below) and combines them to form a cluster. The algorithm continues one step at a time joining pairs of cases, pairs of clusters, or a case with a cluster, until all of the data are in one cluster. The method is hierarchical because a cluster formed in a later stage of the analysis contains clusters from an earlier stage that contain clusters from a still-earlier stage. Within each level, the clusters are disjoint (each case belongs to only one cluster).

The method used to combine the clusters—average linkage within groups—computes an average of the similarity of a case under consideration with all cases in the existing cluster and joins the case to that cluster if a given level of similarity is achieved using this average value. Of the cluster measures that determine how different or alike two cases are, this study uses a predictability measure, Yule's Q, that assesses the association between items as the predictability of one given the other.

Homicide Subtypes

Four homicide types are produced by the within-groups average-linkage cluster analysis. To determine which characteristics differentiate the subtypes, mean values of victim and offender and event variables were produced for cases comprising each subtype, as well as for total homicides for

comparison. Mean values of variables for all homicides are presented in the first column of Table 1.

As shown, the majority of killings have motives of heat of anger (35%), retaliation (20%), and robbery (18%), and are conflict homicides (82%). More than one-third are alcohol or drug related (39% and 36%). Close to one-half take place in a public location (49%), and most involve the presence of a small number of bystanders. Well over one-half occur between friends or acquaintances (61%), while only about one in five occur between strangers. As expected, most offenders and victims in St. Louis are male (91% and 83%) and are killed by gunshot (74%). The majority of offenders are African American (90%). Finally, the average suspect's age is 27, and the average victim's age is 30.

Turning to the subtypes, cluster 1, or General Altercation, homicides have the following characteristics: heat-of-anger motive, the presence of conflict, alcohol and drug related, the homicide occurs in both public and in/around the home, the presence of bystanders, a victim-offender relationship of friends/acquaintances, male victim, victim injured by gunshot, Black suspect, male suspect, suspect's mean age is 27, and victim's mean age is 28. In these heat-of-anger killings, typically a Black male suspect shoots a Black male victim (a friend or acquaintance) with bystanders present. These homicides tend to be alcohol and drug related, meaning that the victim, offender, or both, have been drinking or using drugs immediately prior to and/or during the homicide event. Thus, General Altercation homicides represent arguments between males that escalate into lethal violence. Results show that 1,045 (67%) of all killings are General Altercation homicides. The second column of Table 1 reports mean values of characteristics for this subtype.

Cluster 2, or Felony, homicides have the following characteristics: robbery motive, drug and alcohol related, bystanders present, a victim-offender relationship of strangers or friends/acquaintances, male victim, victim injured by gunshot, Black suspect, male suspect, suspect's mean age is 24, and victim's mean age is 39. Felony killings are distinct from General Altercation killings; the main difference is motive, with 98% of Felony homicides having a robbery motive. In addition, more of them occur between strangers and involve primarily Black male suspects robbing and killing Black male victims in public or private spaces. Again, the primary mode of death is from gunshot. Of all homicides, 273 (18%) comprise the Felony category. Column three in Table 1 reports mean values of characteristics for Felony killings.

Domestic: Male/Female (M/F), or cluster 3, homicides can be characterized as follows: heat-of-anger motive, the presence of conflict, the homicide occurs in a private space (in/around the home), generally no bystanders, a victim-offender relationship of family members, female victim, victim

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TABLE 1: Characteristics of Total (N = 1,557), General Altercation (n = 1,045), Felony (n = 273), Domestic: M/F (n = 142), and Domestic: F/M (n = 97) Homicides

Variable	Total	General Altercation	Felony	Domestic: M/F	Domestic: F/M
	Mean Value	Mean Value	Mean Value	Mean Value	Mean Value
Motive: Heat of anger	.35	.41	.01	.43	.75
Motive: Domestic violence	.01	.00	.00	.05	.02
Motive: Robbery	.18	.02	.98	.01	.02
Motive: Drug	.08	.09	.09	.01	.00
Motive: Child abuse	.02	.01	.00	.12	.05
Motive: Rape/sexual	.02	.01	.03	.07	.00
Motive: Hate	.01	.01	.00	.01	.00
Motive: Psychotic	.00	.00	.00	.02	.00
Motive: Retaliation	.20	.29	.01	.03	.03
Motive: Self-defense	.03	.03	.00	.01	.10
Motive: Accident	.02	.01	.01	.04	.01
Conflict motive	.82	.98	.07	.91	.98
Drug related	.36	.38	.44	.17	.14
Gang related	.12	.14	.09	.04	.00
Alcohol related	.39	.40	.36	.34	.54
Victim precipitated	.15	.16	.08	.05	.46
Homicide location: Public	.49	.55	.44	.24	.22
Homicide location: In/around home	.60	.57	.53	.83	.87
Bystanders present ^a	2.02	2.13	1.79	1.56	1.71
Victim-offender relationship: Strangers	.21	.19	.49	.11	.00
Victim-offender relationship: Friends/acquaintances	.61	.72	.49	.27	.24
Victim-offender relationship: Family members	.17	.09	.02	.63	.76
Victim age	30.38	28.26	39.20	29.55	37.18
Victim gender: Male	.83	.93	.81	.00	.93
Victim injury: Gunshot	.74	.79	.69	.61	.37
Victim injury: Stab/slash	.13	.12	.13	.01	.53
Victim injury: Beaten	.07	.06	.09	.21	.03
Suspect age	26.65	26.55	23.70	31.98	32.11
Suspect age: Juvenile status	.13	.13	.18	.07	.07
Suspect race: Black	.90	.91	.92	.75	.89
Suspect gender: Male	.91	.98	.95	.87	.00

a. Represents modal value and coded as 1 if only the victim and offender were present, 2 if there were up to three bystanders present, or 3 if there were more than three bystanders present.

injured by gunshot, Black suspect, male suspect, suspect's mean age is 32, and victim's mean age is 30. Domestic: M/F killings are similar to General Altercation killings in that they both have heat-of-anger motives, conflict present, and Black males as suspects. Where they differ is in their location and environmental characteristics; Domestic: M/F homicides are more private affairs and occur in the home between the suspect and the victim only (who are intimates). In each case, the suspect kills a female victim; thus, these domestic homicides involve husbands, boyfriends, or male relatives killing their female counterparts. Of all homicides, 142 (9%) can be classified as Domestic: M/F. The fourth column of Table 1 reports average values of characteristics for this subtype.

Finally, cluster 4, or Domestic: Female/Male (F/M), homicides have the following characteristics: heat-of-anger motive, the presence of conflict, alcohol related, victim precipitation, the homicide occurs in private (in/around the home), small numbers of bystanders present, intimate victim-offender relationship, male victim, victim injured by stab/slash, Black suspect, female suspect, suspect's mean age is 32, and victim's mean age is 37. With conflict and a heat-of-anger motive, Domestic: F/M killings are similar to General Altercation and Domestic: M/F killings. However, they differ in that Domestic: F/M suspects are female. These homicides typically reflect women who kill men, usually intimates, by stabbing or slashing them to death (with bystanders present—most often children or other family members). In this subtype, the element of victim precipitation is introduced. In many cases, men are initiating the violence either by first assaulting the women or by threatening to kill them with a weapon. This is not to say that the women kill in self-defense, but in a near majority of cases (46%), the men are precipitating their own deaths.⁶ Similar to Domestic: M/F homicides, these deaths tend to occur in the home, where couples or spouses are most likely to argue. Of the cases, 97 (6%) are Domestic: F/M homicides. The last column of Table 1 displays mean values of characteristics for these killings.^{7,8}

Structural Characteristics and Homicide Subtypes

Although the subtypes are derived using cluster analysis, the interpretation of the cluster results was guided by previous research (see note 7). A number of studies of total and disaggregated homicide rates have focused on each of these categories. Anderson (1999), Luckenbill (1977), Sampson and Wilson (1995), and Wilson (1987) have written extensively about argument-related violence; Parker (1989), Rosenfeld, Bray, and Egley (1999), and Williams and Flewelling (1988) discussed felony-related killings; and

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domestic homicides have been the focus of studies by Dugan, Nagin, and Rosenfeld (1999), Macmillan and Gartner (1999), and Miles-Doan (1998).

As stated earlier, it is likely that some neighborhood correlates may exhibit influence across many homicide categories, whereas others may be limited to specific types. This notion stems from the theoretical and empirical literature on the correlates of criminal violence (Kovandzic et al. 1998; Williams and Flewelling 1988). For example, economic disadvantage—a key factor proposed by social disorganization theory—is likely to be strongly correlated with General Altercation homicides. Anderson (1999), Horowitz (1983), and Sampson and Wilson (1995) extended social disorganization theory by incorporating structurally based cultural adaptations in their explanations. These authors suggested that concentrated disadvantage influences violent crime by creating a climate in which the willingness to participate in violence is one of the few strategies males have for earning the respect and admiration of their peers. Moreover, Krivo and Peterson (1996) and Anderson (1999) suggested that part of the adaptation to living in a high-crime neighborhood may be the willingness and ability to use violence to protect oneself and one's belongings. This willingness may translate into higher rates of defensive violence. These processes whereby disadvantage encourages higher rates of violence are likely to generate altercation-based homicides, and especially those that occur in public. Therefore, it is likely that neighborhoods with high levels of economic disadvantage will experience greater numbers of General Altercation homicides.

On the other hand, Felony homicides are motivated by financial gain, not the development or maintenance of reputations. Unlike General Altercation killings that arise in the normal activities of an offender's life, Felony killings involve some (however small) level of planning and usually take place where there are material goods worth stealing. The locations of these targets are less often in economically disadvantaged neighborhoods, and as Parker (1989) found, poverty rates are not significantly related to robbery homicides. However, Polk (1994:99) raised the point that in many instances of robbery homicide, the knowledge of a person (potential victim), regardless of where he or she resides, and the presence of money, are likely to influence the thought processes that lead to the killing. Indeed, while the Felony subtype has the largest percentage of stranger homicides (49%), the remaining killings occur between friends and acquaintances, supporting Polk's claim. Thus, disadvantage is predicted to be significantly but moderately related to Felony murders.

Finally, economic disadvantage is expected to be less strongly related to Domestic killings because unlike General Altercation and Felony homicides, which tend to occur in public, domestic killings occur in and around the home and are more private in nature; therefore, they are less likely to be influenced by the surrounding community characteristics (identified in social

disorganization theory) such as economic disadvantage, an argument consistent with the findings in Miles-Doan (1998).

Another key factor proposed by social disorganization theory—residential instability—is not likely to be significantly related to General Altercation homicides. For the development and maintenance of respect and reputation to be salient, social networks must be fairly constant. If social relations are constantly in flux (as they tend to be in neighborhoods with high rates of turnover), hierarchies based on reputation are more difficult to maintain. While residential instability is seen as a contributor to neighborhood crime in general, it may be substantially less related to types of crime that stem from the maintenance of social hierarchies, such as argument-based homicides. In fact, high levels of instability may decrease reputation-based violence by inhibiting the development of entrenched social hierarchies.

Residential instability, however, is likely to increase the number of targets for economically motivated crimes by decreasing levels of guardianship and increasing the interaction between individuals from diverse social milieus. Unstable neighborhoods are also likely to have fewer residents that know one another and look out for each other. Therefore, this factor is likely to be more strongly related to Felony homicides. Finally, given the private nature of domestic killings, residential instability is less likely to influence Domestic homicides in St. Louis neighborhoods.

METHOD

To determine whether neighborhood characteristics are associated with each of the homicide categories, I performed four regression analyses using 1990 tract-level census data for the city of St. Louis.⁹ St. Louis has 114 tracts, 3 of which are excluded from the analyses because they do not have adequate size populations (i.e., they have populations of less than 200). This population size requirement allows one to construct reliable rates, and other studies that have utilized these data also have excluded these tracts from their analyses (Rosenfeld et al. 1999). The regression models adjust for spatial autocorrelation.

Neighborhood Measures and Homicide Counts

Nine variables were constructed from the census to reflect neighborhood differences in poverty, race, the labor market, age composition, family structure, and residential stability. The list of independent variables resembles, as closely as possible, the measures used by Land et al. (1990:931–932).¹⁰ They include the following: (1) percent Black; (2) median family income; (3)

percent poverty, defined as the percentage of persons living below the poverty level; (4) percent young males, defined as the percentage of young males, ages 14 to 24; (5) percent residential mobility, defined as the percentage of persons ages five and over who have changed residences in the past five years; (6) percent children not living with both parents, defined as the percentage of children 18 years and under not living with both parents; (7) percent unemployed, defined as the percentage of unemployed persons ages 16 years and over; (8) percent divorced males, defined as the percentage of divorced males ages 15 years and over; and (9) population size, defined as the total resident population.

To diagnose potential collinearity among the independent variables, I used the diagnostics developed by Belsley, Kuh, and Welsch (1980) that are widely accepted in the field of econometrics. The strength of this procedure is that, in addition to determining whether variables are collinear, this method determines whether specific coefficient estimates are isolated from the ill effects of collinearity and, therefore, are relatively trustworthy in spite of ill-conditioned data.

According to Belsley et al. (1980:113), an appropriate means for diagnosing degrading collinearity is the following double condition: (1) a singular value judged to have a high condition index (which represents the collinearity of combinations of variables in the data set—the relative size of the eigenvalues of the matrix) and that is associated with (2) high variance-decomposition proportions for two or more estimated regression coefficient variances. The number of condition indexes deemed large (greater than 30) identifies the number of near dependencies, and the magnitudes of these high condition indexes provide a measure of their relative tightness. Furthermore, the determination of large-variance-decomposition proportions (greater than .5) associated with each high condition index identifies those variables that are involved in the corresponding near dependency. The magnitude of these proportions in conjunction with the high condition index provides a measure of the degree to which the corresponding regression estimate has been degraded by the presence of collinearity.

The results indicate that there is degrading collinearity between the following variables: percent poverty, median family income, percent Black, percent unemployment, and percent children under 18 not living with both parents, as evidenced by a large condition index (37) and variables with large variance-decomposition proportions (greater than .5 for all). This is not surprising and is consistent with past research (Baller et al. 2001; Land et al. 1990; Miles-Doan 1998). For confirmation of these results, I examined variance inflation factor (VIF) scores—the statistic most frequently used by researchers studying homicide (Messner and South 1992; Parker and McCall

1999; Parker and Pruitt 2000; Sampson 1987)—that confirmed the high collinearity between the disadvantage-related variables.

Using these diagnostics as a guide, I adopted a strategy of confirmatory factor analysis and hypothesized that an interpretable one-factor solution will represent the intercorrelations among indicators of disadvantage. The results support this hypothesis; all factor loadings were above .80 (percent poverty = .94, median family income = -.91, percent Black = .85, percent unemployed = .88, and percent children 18 and under living in a single household = .93), and the factor has an eigenvalue greater than 1.00 (4.059) that explains 81% of the cumulative variance. This factor, labeled Neighborhood Disadvantage, is thus used along with percent residential mobility, percent young male, percent divorced males, and population size to capture the various dimensions of community context.¹¹

Initially, rates for the homicide categories were the dependent variables; however, an examination of the univariate distributions revealed skewness in the rates. Homicide is a rare event, and most neighborhoods in St. Louis have very few homicides even after pooling the data over a 10-year period. Moreover, when populations are small relative to offense rates, the discrete nature of the counts cannot be ignored and ordinary least squares regression (OLS) analyses cannot be employed. As Osgood (2000:22–23) explained, rates based on small counts of homicide present two serious problems for least-squares analysis: First, because the precision of the estimated homicide rate depends on population size, variation in population size across the aggregate units will lead to violating the assumption of homogeneity of error variance. We would expect larger errors of prediction for per-capita homicide rates based on small populations than for rates based on large populations. Second, normal or even symmetrical error distributions of homicide rates cannot be assumed when counts are small. The lowest possible count is zero, so the error distribution must become increasingly skewed (as well as more decidedly discrete) as homicide rates approach this lower bound.

A data analytic approach that resolves these problems is the Poisson-based regression model. Poisson regression has the advantage of being precisely tailored to the discrete, often highly skewed distribution of the dependent variable. However, the basic Poisson regression model is appropriate only if the data are not overdispersed; applying this model to overdispersed data can produce underestimation of standard errors of the β s, which leads to misleading significance tests. A solution is found with the negative binomial regression model, the best known and most widely available Poisson-based model that allows for overdispersion (Osgood 2000:28–29). Negative binomial regression combines the Poisson distribution of event counts with a gamma distribution of the unexplained variation in the underlying or true

mean event counts. In light of these issues, this study employs counts for the homicide categories and total homicides as the dependent variables and uses a negative binomial estimation procedure to determine the relationship between neighborhood characteristics and General Altercation, Felony, Domestic: M/F, and Domestic: F/M killings.

*Regression Analysis Adjusting for
Spatial Autocorrelation*

Homicide is not randomly distributed but spatially concentrated in certain areas in the metropolis. Formally, the presence or absence of this pattern is indicated by the concept of spatial autocorrelation, or the co-occurrence of similarity in value with similarity in location (Anselin et al. 2000:14). When high values in a location tend to be associated with high values at nearby locations, or low values with low values for neighbors, positive spatial autocorrelation or spatial clustering is said to occur. In analyses using spatial data, estimates and inferences from regression analyses must include an adjustment for spatial autocorrelation; ignoring spatial dependence in the model may lead to false indications of significance, biased parameter estimates, and misleading suggestions of fit (Messner et al. 2001:427).

Spatial dependence can be controlled for using a spatial lag or spatial error model (Baller et al. 2001:566). The spatial error model evaluates the extent to which the clustering of homicide rates not explained by measured independent variables can be accounted for with reference to the clustering of error terms. In this sense, it captures the spatial influence of unmeasured independent variables. The spatial lag model, in contrast, incorporates the spatial influence of unmeasured independent variables but also stipulates an additional effect of neighbors' homicide rates (i.e., the lagged dependent variable). This is the model most compatible with notions of diffusion processes because it implies an influence of neighbors' homicide rates that is not simply an artifact of measured or unmeasured independent variables. Rather, homicide in one place may actually increase the likelihood of homicide in nearby locales (Baller et al. 2001:567).

In the multivariate models, I estimate the effects of structural characteristics on homicide levels with adjustments for spatial dependence by employing a spatial lag model.¹² The first step in this procedure consists of the analysis of patterns of spatial autocorrelation in the homicide levels. A number of spatial autocorrelation tests have been developed, the most common of which is Moran's I (Baller et al. 2001), a cross-product coefficient similar to a Pearson correlation coefficient and scaled to be less than 1 in absolute value. Significant positive values for Moran's I indicate positive spatial autocorrelation or clustering. In the analysis presented here, I used the

Spacestat software to carry out the Moran's I test for spatial autocorrelation for each homicide subtype.¹³

Assuming that spatial dependence is observed, I included a spatial lag model in the final regression analyses. Land and Deane (1992:228) asserted that in spatial-effects models, the spatial diffusion or interaction processes are determined simultaneously with the dependent variable. This produces a nonzero correlation between the potential (spatial lag) variable and the error term, which violates the assumptions under which OLS produces unbiased estimates of the regression coefficients. As a corrective method, they propose a two-stage least squares (2SLS) technique to derive consistent estimators in spatial-effects models with potential variables. Thus, following recent research (Morenoff and Sampson 1997:43), I applied Land and Deane's 2SLS technique, and in particular, the Anselin-Alternative method, to create measures of homicide potentials.¹⁴ These variables control for the spatial dependence exhibited by each homicide type.

RESULTS

Neighborhood Correlates of Homicide Counts

Means, standard deviations, and bivariate correlations for all variables are presented in Table 2. Average counts for all homicides and the subtypes—General Altercation, Felony, Domestic: M/F, Domestic: F/M—from 1985 to 1995 are 15.87, 9.18, 2.40, 1.24, and .84, respectively. Looking at neighborhood factors, in 1990, the average poverty level across neighborhoods was 25%, the average percentage of children not living with both parents was 40, and the average percentage of persons unemployed was nearly 7. Other characteristics of interest include the average percentage of males divorced (9), the average percentage of persons who have changed residences in the past five years (44), and the average median family income (\$24,298).

Turning to the relationship between these characteristics and homicide, the correlations show that different neighborhood characteristics are significantly associated with different types of homicide. For example, percent young males is significantly positively related only to General Altercation, Felony, and Domestic: F/M killings ($r = .26, .21, \text{ and } .23$, respectively), whereas percent divorced males is significantly negatively correlated only with General Altercation ($r = -.28$) and Domestic: F/M homicides ($r = -.21$). Population size is significantly positively correlated with only Felony ($r = .25$) and Domestic: F/M killings ($r = .20$). Residential mobility is not significantly associated with any type of homicide.

TABLE 2: Basic Statistics and Correlations, 1990

<i>Description</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. General Altercation homicide count	1.00	.70**	.58**	.50**	.97**	.77**	-.66**	.67**	.26**	-.04	.69**	.69**	-.28**	.18
2. Felony homicide count		1.00	.45**	.53**	.81*	.63**	-.50**	.50**	.21*	.01	.59**	.55**	-.18	.25**
3. Domestic: M/F homicide count			1.00	.28**	.64**	.41**	-.39**	.42**	.05	.03	.42**	.36**	-.14	.16
4. Domestic: F/M homicide count				1.00	.58**	.49**	-.48**	.51**	.23*	-.09	.46**	.46**	-.21**	.20*
5. Total homicide count					1.00	.79**	-.67**	.68**	.25**	-.05	.71**	.70**	-.28**	.22*
6. Percent Black						1.00	.73**	.35**	-.16	.74**	.72**	-.23*	-.09	
7. Median family income							1.00	-.84**	-.30**	-.02	-.85**	-.73**	.19*	.14
8. Percent poverty								1.00	.32**	.08	.85**	.80**	-.15	-.14
9. Percent young males									1.00	.10	.21*	.24*	-.35**	-.08
10. Percent residential mobility										1.00	.22*	-.04	.49**	-.04
11. Percent children not living with both parents											1.00	.73**	-.03	-.11
12. Percent unemployed												1.00	-.15	-.01
13. Percent divorced males													1.00	-.16
14. Population size														1.00
\bar{X}	9.18	2.40	1.24	.84	15.87	48.96	24,298	24.92	7.48	43.96	39.62	6.76	9.06	3,571.86
<i>SD</i>	9.27	2.52	1.46	1.09	14.66	40.87	9,238	15.42	3.49	12.04	17.09	3.74	2.72	1,526.73

* $p < .05$. ** $p < .01$.

On the other hand, the economic disadvantage indicators as well as percent Black and percent children not living with both parents are significantly associated with all homicide counts. This suggests that homicide, whatever the type, occurs more frequently in neighborhoods that have higher percentages of Blacks and higher levels of economic disadvantage. To see if these patterns hold, we turn to the regression results.

*Neighborhood Structure and Disaggregated
Homicide Counts: Regression Results*

Table 3 presents results on community characteristics of total and disaggregated homicide counts from a series of negative binomial regressions. In reviewing the results, I caution against making causal inferences recognizing the possibility that homicide levels may have reverse causal effects on some of the independent variables. If the true relationship between homicide and neighborhood factors is reciprocal, then the analysis suffers from simultaneity bias because there is no control for the effect of homicide levels on the indicators of Disadvantage and the other covariates. With that in mind, I favor interpretations that stress the association between neighborhood factors and homicide levels (this issue is discussed in more detail later in the article).¹⁵

As shown in the first column of Table 3, Disadvantage, residential mobility, and population size are significantly positively associated with total homicide levels ($\beta = .68, p < .001$; $\beta = .01, p < .05$; $\beta = .0003, p < .001$, respectively). Concerning Disadvantage, the coefficient of .682 indicates that a unit change in Disadvantage is associated with a 98 percent higher level of expected homicides, (percentage change = $100 \times [\exp(.682) - 1]$), holding all else constant. Likewise, the coefficient of .009 for residential mobility indicates that a unit change in mobility is associated with a 1 percent higher level of expected homicides, holding all else constant. These findings are consistent with Land et al. (1990) and other research on structural covariates of total homicide rates (Sampson 1986; Williams and Flewelling 1988). The question we turn to now, however, is whether these characteristics will be significantly related to each of the subtypes as proposed by Land et al. (1990).

Looking first at General Altercation killings, or those that occur between males in public because of an argument that escalates into murder, Disadvantage and population size are both significantly positively related to these killings ($\beta = .76, p < .001$; $\beta = .0003, p < .001$). A one-unit change in Disadvantage is associated with a 114 percent higher level of expected General Altercation homicides, net of the other variables. The significant positive relationship between Disadvantage and this subtype reflects findings of prior research on disaggregated homicide rates (Kovandzic et al. 1998; Miles-

TABLE 3: Regression Results for Neighborhood Characteristics on Homicide Counts^a

Variable	All Homicides	General Altercation Homicide	Felony Homicide ^b	Domestic: M/F Homicide ^b	Domestic: F/M Homicide ^b
Neighborhood Disadvantage	.682***	.758***	.420***	.525***	.684***
Percent residential mobility	.076	.092	.105	.142	.160
Percent young males	.009*	.009	.015*	.011	-.004
Percent divorced males	.004	.005	.006	.009	.010
Population size	.008	.018	.002	-.054	.044
Spatial autocorrelation coefficient	.014	.017	.022	.037	.036
Constant	-.019	-.012	-.006	-.044	.010
Pseudo R ²	.023	.028	.035	.047	.063
-2LL	.0003***	.0003***	.0003***	.0002**	.0003***
	.00	.00	.00	.00	.00
	.111***	.176***	1.505***	.555	.888
	.019	.037	.259	.842	.930
	-.886	-1.475**	-5.076***	-.968	-2.493*
	.453	.550	.887	1.213	1.225
	.23	.23	.35	.14	.21
	-325.046	-281.158	-174.834	-153.650	-114.793

a. Entries are unstandardized coefficients followed by standard errors.

b. Results are from Poisson regression because the negative binomial model indicated no overdispersion in the data for this subtype.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Doan 1998; Parker 1989) and begins to lend support to the notion that homicide, regardless of type, is more likely to occur in disadvantaged neighborhoods. While the effect of residential mobility is in the predicted direction, this factor is not significant, nor are percent young males or percent divorced males.

Moving to Felony homicides, Disadvantage and population size, once again, are significantly positively related to these robbery homicides ($\beta = .42$, $p < .001$; $\beta = .0003$, $p < .001$). Equally important, however, is the finding that residential mobility is significantly positively related to Felony homicides ($\beta = .015$, $p < .05$), suggesting that neighborhoods with higher levels of residential mobility have higher levels of robbery homicides; a one-unit change in residential mobility is associated with a 2 percent higher level of expected Felony killings. Of all the categories, Felony homicides include the largest percentage of stranger homicides, and, thus, it is not surprising that neighborhoods with greater population turnover are more likely to experience Felony homicides.

Turning to Domestic: M/F killings, or those in which male suspects kill their female counterparts during heated arguments or fights, Disadvantage is significantly positively related to this type ($\beta = .53$, $p < .001$)—a one-unit

change in Disadvantage is associated with a 70% higher level of the expected number of these homicides, net of the other variables—as is population size ($\beta = .0002, p < .001$). On the other hand, residential mobility, percent divorced males, and percent young males are not significantly related to Domestic: M/F killings. Once again, higher levels of Disadvantage are associated with higher levels of these homicides, suggesting that this factor exhibits broad-ranging influence across many categories of homicide.

Finally, factors significantly associated with Domestic: F/M homicides include Disadvantage ($\beta = .68, p < .001$)—a one-unit change in Disadvantage is associated with a nearly 97 percent higher level of the expected number of these homicides—and population size ($\beta = .0003, p < .001$). These heat-of-anger killings, in which female suspects typically kill male intimate victims, are more likely to occur in poorer neighborhoods with larger populations.

The results also indicate that spatial autocorrelation exists in the models. First, the global Moran's I coefficients for all homicide categories are greater than zero and significant at the $p < .05$ level, providing evidence of a significant spatial pattern. Second, the results in Table 3 indicate that spatial autocorrelation in the homicide distributions remains after accounting for neighborhood context. The coefficient for the autocorrelation term is significant in all categories excluding the domestic categories. This suggests levels of General Altercation and Felony killings in communities influence levels of these killings in nearby communities, even after controlling for neighborhood characteristics. These results are consistent with a diffusion hypothesis: The spatial distribution of homicides likely reflects intrinsic features of the phenomenon and not simply the presence of facilitating neighborhood characteristics (Rosenfeld et al. 1999:17–18).

Overall, the results suggest that, first, to a small degree, different neighborhood characteristics are associated with different types of homicide. For example, residential instability is significantly related to overall and Felony levels but not to General Altercation or Domestic levels. Moreover, the size of the coefficient of each neighborhood characteristic varies across categories. That is, the strength of the association between Disadvantage and homicide, for example, varies by subtype, with Disadvantage being most strongly associated with General Altercation levels and least strongly associated with Felony levels.¹⁶ Second, and more importantly, the results reveal that Disadvantage is the factor most strongly associated with all categories; neighborhoods with higher levels of Disadvantage are more likely to have higher levels of homicide, regardless of type.

Pseudo R^2 statistics displayed at the bottom of Table 3 indicate that the regression model accounts for 14 percent to 35 percent of the variance in homicide counts at the neighborhood level. The neighborhood factors do a better job of explaining variation in public homicides that are not domestic

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than variation in private homicides; the lowest R^2 s are for the domestic categories, a finding that supports previous research (Miles-Doan 1998). This is likely due to the private nature of domestic homicides. Unlike General Altercation and Felony homicides, domestic murders are more likely to occur between intimates, in a private location, and involve fewer bystanders. Thus, they are less likely to be influenced by the overall structure of the community or broader neighborhood forces. Prior research on the correlates of intimate violence underscores this finding. In their study of the factors of spousal violence against women, Macmillan and Gartner (1999) discovered that a variety of individual-level characteristics such as household size, drinking behavior, and length of the relationship play a significant role in different types of spousal violence. On the other hand, the lower R^2 s for Domestic killings may also reflect the fact that no spatial dependence was detected for these homicides.

CONCLUSIONS AND DISCUSSION

In extending the findings from Land et al. (1990), this study addressed an important theoretical question: How does the structure of a community influence the forms of deviant adaptation that emerge there? Its goal was to determine whether neighborhood factors are associated with all types of homicide or whether homicides are sufficiently distinct in nature that their levels are not equally associated with structural correlates. The results of the analyses revealed that while different community factors are associated with different types of homicide, at the neighborhood level, Disadvantage is associated with all types of homicide, suggesting that this factor exhibits pervasive influence across a range of violent behaviors and raises questions of whether different forms of lethal interpersonal violence might reflect different responses to fundamentally similar circumstances.

This finding raises a question about why Disadvantage (which includes a measure for percent Black) is consistently associated with homicide levels. Two theoretical perspectives, the subcultural and the structural, offer contrasting explanations. Proponents of the subcultural perspective would interpret these findings in terms of the cultural and/or normative attributes allegedly specific to African Americans. This perspective holds that high rates of violence result from a culture in which criminality in general, and violence in particular, are more acceptable forms of behavior. Subcultural theorists claim that African American social institutions themselves contribute to the development and persistence of a subculture conducive to violence (Wolfgang and Ferracuti 1967). For example, the disintegration of particular institutions (i.e., churches, families, and schools) denies Blacks the opportunity to learn

conventional norms and values. The result of such processes is that Blacks are more likely to use violence in their day-to-day encounters, and violence is seen as an acceptable means to solving disputes.

Structural perspectives, in contrast, argue that higher rates of violence among African Americans stem from the disadvantaged material conditions that they disproportionately face, such as high levels of poverty and unemployment. Wilson (1987) and Sampson and Wilson (1995) argued that harsh material conditions facing a substantial proportion of the African American population, coupled with high levels of residential segregation, account for the high rates of within-group violence. Krivo and Peterson (1996) found support for such “concentration effects” for both White and non-White neighborhoods in Columbus, Ohio, suggesting that extreme disadvantage, for any racial group, produces heightened levels of violence.

However, the positive relationship between Disadvantage and all types of homicide may be due to a combination of structural and cultural factors, reflecting ideas from each of these perspectives. From a structural standpoint, more than 50 years after Shaw and McKay’s assessment of race and urban ecology, we still cannot say that Blacks and Whites share a similar environment in many cities, especially with regard to concentrated urban poverty, racial segregation, housing discrimination, and joblessness. It could be argued that racial differences in poverty and family disruption (among other things) are so strong that the “worst” urban contexts in which Whites reside are considerably better than the average context of Black communities (Sampson 1987:354). These patterns underscore Wilson’s (1987) idea of “concentration effects.” These concentration effects, reflected in a range of outcomes from degree of labor force participation to criminal violence, are created by the constraints and opportunities that the residents of inner-city neighborhoods face in terms of access to jobs and job networks, involvement in quality schools, availability of marriageable partners, and exposure to conventional role models (Sampson and Wilson 1995:42). Moreover, ecological segregation of communities gives rise to what Kornhauser termed “cultural disorganization,” or the attenuation of societal cultural values. Poverty, heterogeneity, instability, and other structural features of urban communities are hypothesized to impede communication and obstruct the quest for common values, thereby fostering cultural diversity with respect to noncriminal values. An important component of Shaw and McKay’s (1942) theory was that disorganized communities spawned delinquent gangs with their own subcultures and norms perpetuated through cultural transmission (pp. 49–50).

Here is where elements of a subcultural explanation may come into play. Ethnographic studies such as Elijah Anderson’s (1999) *Code of the Street* support the notion that structurally disorganized communities are conducive to the emergence of cultural value systems and attitudes that seem to

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legitimate, or at least provide a basis of tolerance for, violence. Anderson argued that poor and lower-class adults more often find themselves in disputes that lead to violence, and because they are more often alienated from agencies of social control such as the police and the courts, they are left alone more often to settle disputes on their own. Parents, in turn, tend to socialize their children into this reality (Anderson 1999:15). While these theoretical ideas and concepts have not been directly tested in this study—applied to the level of neighborhoods—they make meaningful the persistent covariation of Disadvantage and total and disaggregated homicide levels in St. Louis.

Social-Structural Correlates of Homicide Types: Future Directions

There are numerous avenues that should be explored in future research on the correlates of disaggregated homicide rates. First, with respect to the generalizability of the findings for St. Louis, it would be useful to replicate the analyses in other urban contexts. Of particular concern is whether the cluster analyses in other cities would yield comparable categories with similar victim, offender, and event characteristics. It is also important to determine whether there are similar patterns in the relationships between neighborhood characteristics and the homicide categories.

A second avenue involves exploring the importance of another spatial context of violence: the micro-environment of the homicide. The micro-environment is a social context that involves the interpersonal relationship between the victim and offender, a physical location with characteristics and properties, and a behavioral setting that establishes the activities of the victim and offender at the time of the offense. Focusing on variation across smaller spaces opens up a new level of analysis that can absorb many variables that have been previously shunned as not sufficiently sociological. This increased range of independent variables at a micro-place level also means that variation in homicide within communities is probably greater than variation across communities.

The findings from this study indicate that this approach to understanding certain types of homicide is likely to prove fruitful. Recall that, of the homicide categories, the two that were domestic in nature were least associated with broader community characteristics, a finding that supports previous research (Miles-Doan 1998). This is likely due to the private nature of domestic homicides. Thus, it might be the case that micro-environmental factors such as the behavioral setting play a more direct role in the killing than do broader community forces.

Third, although this study has been concerned with how neighborhood structure is related to homicide, an equally critical question for researchers

involves estimating the reciprocal effects of homicide levels on the structure of communities. This question is important because just as we find that neighborhood composition is intimately linked to crime, there is mounting evidence that crime and violence help to shape the metropolis (Morenoff and Sampson 1997). Like such locational resources as good schools, access to jobs, or a clean environment, safe neighborhoods with little violence are highly valued, and safety becomes part of the calculus in determining where people choose to live. While a long tradition of criminological research has investigated the effects of neighborhood characteristics on levels of violence, what is less known is how violence shapes the structure of communities over time. Given the findings from this study, it may be the case that both the frequency and the nature of homicide are important factors to consider; just as neighborhood factors are differentially related to types of killings, different categories of homicide may also have differing effects on the composition of communities over time. Thus, we can ask, Do all types of homicide equally produce changes in neighborhood composition over time?

Finally, future research should attempt to disentangle the effects of racial composition and economic disadvantage on levels of violence. As prior research and this study have shown, at the neighborhood level, race and class are highly correlated. The poorest areas in St. Louis have the highest percentages of African American residents, and these neighborhoods experience the greatest homicide rates, no matter what the type. At the same time, nearly all of the middle-class and wealthiest neighborhoods are predominantly White, and they enjoy the lowest rates in the city. Thus, it is nearly impossible (in this case) to pinpoint the underlying process contributing to high homicide rates in certain neighborhoods.

One solution involves replicating these analyses in a city that would allow the researcher to examine more thoroughly the intersection of race, socioeconomic status, and homicide. Indeed, this is exactly what Krivo and Peterson (1996) did in their analysis of local areas in Columbus, Ohio. Given the population composition of Columbus neighborhoods, they were able to analyze both poor (Black and White) and middle-class (Black and White) neighborhoods. They found that extremely disadvantaged communities have higher levels of crime than less disadvantaged areas and, more importantly, that this pattern holds for both Black and White communities. These findings indicate that neighborhood disadvantage may represent more accurately the underlying causes of heightened violence in some communities, and support Sampson's (1987) point that "the sources of crime are invariant across race and rooted largely in the structural differences among communities" (p. 642). Findings of this sort, however, are few and far between.

A second solution involves testing for interaction effects to determine whether Blacks and Whites commit less or more killings based on the racial

(or socioeconomic) composition of the neighborhood in which they reside. For example, one could examine whether Blacks who live in predominantly Black neighborhoods have higher or lower rates of homicide compared to Blacks that live in mixed or predominantly White neighborhoods, controlling for other factors. Likewise, one could test whether Blacks in poor neighborhoods commit more homicides than Blacks in middle-class neighborhoods. Once again, however, compositional distributions of this sort (e.g., Blacks residing in predominantly White neighborhoods) are rare in U.S. cities.

A final solution involves the further disaggregation of homicide subtypes by race. One of the most intriguing findings from a number of recent studies that examine the structural correlates of (total) homicide rates is that economic factors such as poverty, median family income, and income inequality are more strongly associated with White than Black homicide levels (Ousey 1999; Peterson and Krivo 1993; Shihadeh and Steffensmeier 1994). What has yet to be determined, however, is whether further disaggregating Black and White killings by motive (and other characteristics) may help explain this finding. Results from a study by Kubrin and Wadsworth (2003) suggested this may be the case. Analyzing the impact of socioeconomic and demographic factors on disaggregated Black homicide rates in St. Louis, Kubrin and Wadsworth found significant variation within Black killings in terms of motive, victim and offender characteristics, victim and offender relationship, and type of death. More importantly, they found that concentrated disadvantage is significantly associated with some, but not all, types of Black killings and that residential instability has a negative effect on gang homicide. These findings reinforce the necessity of disaggregating homicide rates, both by race and by other characteristics, to better understand the race-violence relationship, and suggest that more studies of this type should be undertaken.

These suggestions aside, this study advances the notion that homicides vary along a number of significant dimensions and that characteristics of neighborhoods are correlated, in different ways, to this variability. More importantly, however, this study illustrates that Disadvantage is significantly associated with all types of homicide. Thus, to return to the question initially posed by Land et al. (1990)—whether the invariances they found for the covariate relationships to the total homicide rate apply to disaggregated rates as well—the answer is clearly yes for Disadvantage.

NOTES

1. Although cluster analysis does not provide a goodness-of-fit statistic for determining the ideal number of clusters, for the purposes of the study, it is the most appropriate method to disaggregate the data. I tried other methods including factor analysis and latent class analysis,

both of which were problematic for different reasons. With latent class analysis, given the small number of cases and relatively large number of homicide characteristics, when I created the multivariate table needed to run the models, I had a sparse cell problem. I was able to remove variables and solve the sparse cell problem; however, when the model was finally able to run, I felt that its theoretical integrity was compromised as only victim-offender relationship variables were included.

2. A majority (95%) of the cases are single offender–single victim; however, when cases involve multiple offenders or victims, characteristics of the first offender or victim are used, as is done in the Supplementary Homicide Reports.

3. The classification of motives here refers to the police-recorded motive. This study allows for the occurrence of multiple motives. Thus, in a homicide in which a suspect kills the victim because of an argument that occurs during the commission of a felony, both motives (argument and felony) are recorded. This practice is in line with researchers who argue that motive be coded as a multiple-choice checklist rather than a single force-choice item. A further precaution is taken concerning motive classification. Rather than relying on only one, the study employs numerous motive classifications in varying format. First, for the variable Motive, the actual motive(s) is (are) selected from a list of motives (heat of anger, domestic violence, robbery, drugs, child abuse, rape/sexual, hate crime, psychotic, retaliation, self-defense, accidental, all other, unknown). Second, following Williams and Flewelling's (1988) dichotomous categorization, another classification is based on the presence or absence of conflict; nonconflict homicides include those committed in the context of some other crime, whereas conflict homicides result from a person-to-person argument or fight. Finally, distinguishing between a factor's cause and just presence in the killing is crucial. For example, while drugs may be present in a homicide (i.e., victim and offender were smoking crack immediately prior to the homicide), the drugs may not be the underlying motive for the homicide. To address this issue, a case was coded 1 (presence) for drug- or alcohol-related killing if there was any mention whatsoever of drugs or alcohol being present; however, this does not imply that drugs or alcohol were the cause of the homicide. Instances of when drugs or alcohol constituted the underlying motive included the following: robbery of drugs, drug territory dispute or turf war, drug debt, suspect high on drugs, and drug deal gone wrong. Each of these cases would be coded 1 for both motive and presence.

4. Concerning homicide levels, the city is particularly appropriate for study for a number of reasons. First, St. Louis has high murder rates, typically ranking among the top five cities in the United States. St. Louis's average homicide rate from 1980 to 1995 was 49 per 100,000 population, while the average rate for these years for all cities with a population size between 250 and 499,000 (comparable to St. Louis) was only 21. Second, St. Louis rates have closely tracked the ups and downs in the national rate over the past 30 years and thus mirror national trends.

5. To determine if open-case and closed-case homicides are significantly different from one another, I compared frequency distributions on a subset of victim characteristics (variables for which there is information in open-case homicides) across the samples. The means and distributions for all variables are nearly identical: The mean victim age in open-case homicides is 33.5 compared to 30.4 in closed-case homicides. In open-case homicides, 86 percent of the victims are Black, 86 percent are male, and 76 percent are killed by gunshot; likewise, in closed-case homicides, 86 percent of the victims are Black, 83 percent of the victims are male, and 74 percent of the victims are killed by gunshot. I further explored this issue by using a two-pronged approach to determine whether excluding cases with missing data would bias the results. First, I created a variable of exclusion by coding each case (at the individual level) as 1 if it was excluded in the final sample and zero if it was included. I then ran a logistic regression, regressing the exclusion variable on victim characteristics: race, age, gender, and method of death (shot, stabbed, beaten). The only significant variable was victim age ($\beta = -.017$; $p < .001$), suggesting that younger victims are more likely to be excluded from the final sample. None of the other

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variables was statistically significant. Given that General Altercation homicides involve the youngest victims (see cluster analysis results), this implies that there might be a slight undercount of General Altercation homicides in the final sample. As a second test, I aggregated the excluded cases to the tract level and ran a negative binomial regression, regressing the number of excluded cases on the neighborhood characteristics used in the regression models. None of the neighborhood factors was significant; thus, the measurement error resulting from excluding cases with missing data is not significantly related to neighborhood factors. This suggests that even if I have produced some undercount of General Altercation homicides, the undercount is not differentially distributed across tracts. Collectively, these results suggest that excluding open-case homicides from the analyses does not pose a serious problem.

6. Following Wolfgang (1958), victim precipitation is classified based on the current homicide event and does not take into account previous violent altercations. If the police files indicated that the victim attacked or threatened to attack the offender during the event, the case was coded as 1 for victim precipitation. Likewise, if the victim did not attack or threaten to attack the offender during the event, the case was coded as zero for victim precipitation, despite a possible long history of violent altercations between the victim and offender. Thus, while victim precipitation (based on this definition) is more prevalent in Domestic killings, this does not imply that General Altercation (or other homicides) do not result from a history of violent encounters between the offender and victim.

7. It is important to consider the procedures used to determine how many groups are present in the cluster results. The determination of four clusters was made using a variety of techniques. First, after reading disaggregation studies, I learned about the types of homicide that are likely to exist in urban areas. Second, having coded data from the narratives, I had an idea about the potential number of clusters and what they might look like; reading more than 1,500 cases led me to become familiar with characteristics of the killing that tended to correlate with one another. Third, this knowledge from prior literature and my in-depth reading of the cases aided in the interpretation of the cluster results, and in particular, in determining the number of groups through examining the nested-tree structure of the dendrogram. Finally, I compared results from a range of cluster solutions, examining two-, three-, four-, and five-cluster solutions. The results of the three-cluster solution did not distinguish between the domestic subtypes, something I viewed as problematic in light of the findings from Macmillan and Gartner (1999), which documented distinct forms of spousal violence that have different correlates. Likewise, the five-cluster solution was problematic in that it produced a subtype that only had 35 cases assigned to it. After comparing this fifth cluster to the others, I determined that it was not significantly different from the General Altercation and Felony categories to warrant inclusion. Thus, after familiarizing myself with the literature, carefully inspecting the hierarchical tree, and comparing results from a range of solutions, I chose the four-cluster solution. Replication analyses across a series of data sets were done to determine the internal consistency of the cluster solution. I conducted three additional analyses, each with a random subset of cases (the first with 75 percent, the second 50 percent, and the third 25 percent of all cases). Replication test results indicate high internal consistency in the cluster solution; mean values of all variables remained almost identical across tests.

8. One potential problem with using homicide data that span a 10-year period is that the results of the analyses could be affected if one or more of the subtypes became more or less prevalent over time. To determine whether the mixture of homicide types remained relatively invariant between 1985 and 1995, I examined the subtypes for each year over the time period. With a few minor exceptions, the percentages of each subtype remained stable over the 10-year period.

9. A long-debated issue in the literature is whether census tracts constitute neighborhoods. Tracts generally have stable boundaries and are designed to be relatively homogeneous with respect to population characteristics, economic status, and living conditions. While tracts may

not necessarily correspond to neighborhoods in a socially meaningful sense, they are the best local areas for which the homicide data are available. The data are not available at a lower level of aggregation such as the block-group level. Tracts as proxies for neighborhoods have been used in prior analyses of homicide (Miles-Doan 1998; Morenoff and Sampson 1997).

10. I did not include the following variables: south dummy, population density, and Gini index of income concentration because the analyses are performed at the census-tract level and these variables operate at the city or SMSA level. At the neighborhood level, there is no equivalent population density measure to the one used by Land et al. (1990) (that correlates strongly with population size). I tried a variety of other density measures, all at the household level, and they were strongly correlated with measures of disadvantage, not population size. As well, the Gini index is best measured at a level of aggregation higher than the tract because most tracts are relatively homogeneous with respect to economic status and living conditions. I did include one variable not studied by Land et al.—residential mobility—because this factor has been shown to be strongly linked to homicide rates in prior research at the neighborhood level (Miles-Doan 1998). It is important to point out that, given the use of different units of analysis, any comparison of the results with the Land et al. findings is necessarily indeterminate.

11. Although race is conceptually distinct from disadvantage and treating them as attributes of the same dimension confounds attempts at untangling their distinct influences on homicide, the finding that percent Black loads heavily with the poverty-related variables makes sense ecologically (in St. Louis) as this reflects neighborhood segregation mechanisms that concentrate the poor, African Americans, and single-parent families with children (Morenoff, Sampson, and Raudenbush 2001; Wilson 1987). In such a segregated context, it is problematic to separate empirically the influence of percent Black from the other components of the disadvantage scale for there are in fact no predominantly White (> 75 percent White) neighborhoods that map onto the distribution of extreme disadvantage that Black neighborhoods experience. For example, when I divided St. Louis into thirds on poverty level, no predominantly White neighborhoods fell into the high category. This finding is consistent with Krivo and Peterson (2000), Morenoff et al. (2001), and Sampson and Wilson (1995).

12. Although Baller et al. (2001) distinguished between a spatial lag and spatial error model, the procedures outlined in their study to determine which model is most appropriate are available only for ordinary least squares (OLS)-based and not for Poisson-based regressions (personal correspondence with Baller, February 2002). Currently, the area is not well-enough developed to run the different diagnostic tests in Spacestat that would tell you which model is appropriate to deal with the autocorrelation. In particular, the series of Lagrange Multiplier tests that perform this procedure are currently available only for OLS-based regressions. As a result, I ran the spatial lag model; detecting and controlling for the spatial lag is sufficient as the error model is actually nested within the lag model (for a complete explanation, see Baller et al. 2001:566).

13. For the computation of Moran's I and the creation of the spatial lags, a first power inverse distance weights matrix (row standardized) was used. This matrix is based on the distance between census tract centroids for all tracts excluding the one under consideration; greater weight is given to tracts that are closer than to those that are farther away. To create the spatial lags, I then multiplied the spatial weight matrix by predicted values of each of the dependent variables. This potential indicates the influence of neighboring homicide, with the influence decaying as the distance between tracts increases (Land and Deane 1992:228).

14. In the first stage, I save the predicted values of the dependent variables from a regression. The predicted values are then multiplied by the spatial weight matrix. That product, as a variable, is used in the final regressions to control for spatial lag dependence.

15. A related issue has to do with the implications of the homicide data spanning a 10-year period with 5 years preceding the 1990 census data from which the structural covariates are

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derived. This could be problematic if it is the case that homicide levels from 1985 to 1990 influence changes in neighborhood characteristics (that are measured in 1990). However, a 1992 report issued by the Federal Reserve Bank of St. Louis (Community Affairs Office) on St. Louis demographics suggested that during this time period, St. Louis communities were relatively stable. The report stated that "overall, the region (city of St. Louis) has been in a period of population stability" (p. 4). This suggests that including data from 1985 to 1990 is not likely to be problematic. Given the rarity of homicide, it is a common practice in studies to aggregate the data over a number of years (Messner and South 1992; Parker and McCall 1999; Parker and Pruitt 2000). This is especially true when examining disaggregated rates across census tracts.

16. To formally test the extent to which the Disadvantage and residential instability effects differ from one another, I applied the formula for the standard test for coefficient differences across equations (Paternoster et al. 1998; also see McNulty 2001:479): $t = b_1 - b_2 / \sqrt{SEb_1^2 + SEb_2^2}$. There are some statistically significant differences in the effects across the equations. The coefficient for Disadvantage was significantly different ($p < .05$, two-tailed test) in the Total versus Felony, General Altercation versus Felony and Felony versus Domestic: F/M equations. Comparisons for the variable residential mobility ($p < .10$, two-tailed test) show a significant difference in the Felony versus Domestic: F/M equation.

REFERENCES

- Anderson, Elijah. 1999. *Code of the Street*. New York: W.W. Norton.
- Anselin, Luc, Jacqueline Cohen, David Cook, Wilpen Gorr, and George Tita. 2000. "Spatial Analyses of Crime." Pp. 213–62 in *Criminal Justice 2000*, vol. 4, *Measurement and Analysis of Crime and Justice*, edited by D. Duffee. Washington, DC: National Institute of Justice.
- Baller, Robert D., Luc Anselin, Steven F. Messner, Glenn Deane, and Darnell F. Hawkins. 2001. "Structural Covariates of U.S. County Homicide Rates: Incorporating Spatial Effects." *Criminology* 39 (3): 561–90.
- Belsley, David A., Edwin Kuh, and Roy E. Welsch. 1980. *Regression Diagnostics: Identifying Influential Data and Sources of Collinearity*. New York: John Wiley and Sons.
- Bursik, Robert J. 1988. "Social Disorganization and Theories of Crime and Delinquency." *Criminology* 26:519–51.
- Decker, Scott H. 1996. "Deviant Homicide: A New Look at the Role of Motives and Victim-Offender Relationships." *Journal of Research in Crime and Delinquency* 33 (4): 427–49.
- Dugan, Laura, Daniel S. Nagin, and Richard Rosenfeld. 1999. "Explaining the Decline in Intimate Partner Homicide." *Homicide Studies* 3 (3): 187–214.
- Federal Reserve Bank of St. Louis (Community Affairs Office). 1992. "City and County of St. Louis." Unpublished report.
- Flewelling, Robert L. and Kirk R. Williams. 1999. "Categorizing Homicides: The Use of Disaggregated Data in Homicide Research." Pp. 96–106 in *Homicide: A Sourcebook of Social Research*, edited by M. D. Smith and M. A. Zahn. Thousand Oaks, CA: Sage.
- Horowitz, Ruth. 1983. *Honor and the American Dream: Culture and Identity in a Chicano Community*. New Brunswick, NJ: Rutgers University Press.
- Kornhauser, Ruth R. 1978. *Social Sources of Delinquency: An Appraisal of Analytic Models*. Chicago: University of Chicago Press.
- Kovandzic, Tomislav, Lynne M. Vieratis, and Mark R. Yeisley. 1998. "The Structural Covariates of Urban Homicide: Reassessing the Impact of Income Inequality and Poverty in the Post-Reagan Era." *Criminology* 36 (3): 569–97.

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- Krivo, Lauren J. and Ruth D. Peterson. 1996. "Extremely Disadvantaged Neighborhoods and Urban Crime." *Social Forces* 75:619-48.
- . 2000. "The Structural Context of Homicide: Accounting for Racial Differences in Process." *American Sociological Review* 65:547-59.
- Kubrin, Charis E. and Tim Wadsworth. 2003. "Identifying the Structural Correlates of African-American Killings: What Can We Learn from Data Disaggregation?" *Homicide Studies* 7: 3-35.
- Land, Kenneth C. and Glenn Deane. 1992. "On the Large-Sample Estimation of Regression Models with Spatial- or Network-Effects Terms: A Two-Stage Least Squares Approach." *Sociological Methodology* 22:221-48.
- Land, Kenneth C., Patricia L. McCall, and Lawrence E. Cohen. 1990. "Structural Covariates of Homicide Rates: Are There Any Invariances Across Time and Social Space?" *American Journal of Sociology* 95:922-63.
- Luckenbill, David. 1977. "Criminal Homicide as a Situated Transaction." *Social Problems* 25:176-86.
- Macmillan, Ross and Rosemary Gartner. 1999. "She Brings Home the Bacon: Labor-Force Participation and the Risk of Spousal Violence Against Women." *Journal of Marriage and the Family* 61:947-58.
- McNulty, Thomas. 2001. "Assessing the Race-Violence Relationship at the Macro Level: The Assumption of Racial Invariance and the Problem of Restricted Distributions." *Criminology* 39 (2): 467-87.
- Messner, Steven F., Luc Anselin, Robert D. Baller, Darnell F. Hawkins, Glenn Deane, and Stewart E. Tolnay. 2001. "The Spatial Patterning of County Homicide Rates: An Application of Exploratory Spatial Data Analysis." *Journal of Quantitative Criminology* 15 (4): 423-50.
- Messner, Steven F. and Scott J. South. 1992. "Interracial Homicide: A Macrostructural-Opportunity Perspective." *Sociological Forum* 7 (3): 517-36.
- Miles-Doan, Rebecca. 1998. "Violence Between Spouses and Intimates: Does Neighborhood Context Matter?" *Social Forces* 77 (2): 623-45.
- Morenoff, Jeffrey D. and Robert J. Sampson. 1997. "Violent Crime and the Spatial Dynamics of Neighborhood Transition: Chicago, 1970-1990." *Social Forces* 76 (1): 31-64.
- Morenoff, Jeffrey D., Robert J. Sampson, and Stephen W. Raudenbush. 2001. "Neighborhood Inequality, Collective Efficacy, and the Spatial Dynamics of Urban Violence." *Criminology* 39 (3): 517-59.
- Osgood, D. Wayne. 2000. "Poisson-Based Regression Analysis of Aggregate Crime Rates." *Journal of Quantitative Criminology* 16 (1): 21-43.
- Ousey, Graham C. 1999. "Homicide, Structural Factors, and the Racial Invariance Assumption." *Criminology* 37 (2): 405-25.
- Parker, Karen F. and Patricia L. McCall. 1999. "Structural Conditions and Racial Homicide Patterns: A Look at the Multiple Disadvantages in Urban Areas." *Criminology* 37 (3): 447-73.
- Parker, Karen F. and Matthew V. Pruitt. 2000. "Poverty, Poverty Concentration, and Homicide." *Social Science Quarterly* 81:555-70.
- Parker, Robert Nash. 1989. "Poverty, Subculture of Violence, and Type of Homicide." *Social Forces* 67 (4): 983-1007.
- Parker, Robert Nash and M. Dwayne Smith. 1979. "Deterrence, Poverty and Type of Homicide." *American Journal of Sociology* 85:614-24.
- Paternoster, Raymond, Robert Brame, Paul Mazerolle, and Alex Piquero. 1998. "Using the Correct Statistical Test for the Equality of Regression Coefficients." *Criminology* 36:859-66.
- Peterson, Ruth D. and Lauren J. Krivo. 1993. "Racial Segregation and Black Urban Homicide." *Social Forces* 71 (4): 1001-26.

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- Polk, Kenneth. 1994. *Why Men Kill*. Cambridge, UK: Cambridge University Press.
- Rosenfeld, Richard, Timothy M. Bray, and Arlen Egley. 1999. "Facilitating Violence: A Comparison of Gang-Motivated, Gang-Affiliated, and Non-Gang Youth Homicides." *Journal of Quantitative Criminology* 15 (4): 495–516.
- Sampson, Robert J. 1986. "Crime in Cities: The Effects of Formal and Informal Social Control." Pp. 271–311 in *Communities and Crime*, edited by A. J. Reiss, Jr., and M. Tonry. Chicago: University of Chicago Press.
- . 1987. "Urban Black Violence: The Effect of Male Joblessness and Family Disruption." *American Journal of Sociology* 93:348–82.
- Sampson, Robert J. and William Julius Wilson. 1995. "Toward a Theory of Race, Crime and Urban Inequality." Pp. 37–54 in *Crime and Inequality*, edited by J. Hagan and R. D. Peterson. Stanford, CA: Stanford University Press.
- Shaw, Clifford R. and Henry McKay. 1942. *Juvenile Delinquency and Urban Areas*. Chicago: University of Chicago Press.
- Shihadeh, Edward S. and Darrell J. Steffensmeier. 1994. "Economic Inequality, Family Disruption, and Urban Black Violence: Cities as Units of Stratification and Social Control." *Social Forces* 73 (2): 729–51.
- Williams, Kirk R. and Robert L. Flewelling. 1988. "The Social Production of Criminal Homicide: A Comparative Study of Disaggregated Rates in American Cities." *American Sociological Review* 54:421–31.
- Wilson, William Julius. 1987. *The Truly Disadvantaged: The Inner City, the Underclass, and Public Policy*. Chicago: University of Chicago.
- Wolfgang, Marvin E. 1958. *Patterns in Criminal Homicide*. University of Pennsylvania Press.
- Wolfgang, Marvin E. and Franco Ferracuti. 1967. *The Subculture of Violence: Towards an Integrated Theory in Criminology*. London: Tavistock.

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