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ASSESSING COUNTY-LEVEL PREDICTORS OF JUVENILE VIOLENT CRIME IN THE EAST NORTH CENTRAL REGION OF THE UNITED STATES

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ABSTRACT

ASSESSING COUNTY-LEVEL PREDICTORS OF JUVENILE VIOLENT CRIME IN THE NORTH CENTRAL REGION OF THE UNITED STATES

By

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Ecological theory is used to examine the relative impacts of structural conditions on the violent juvenile crime rate across the population density continuum. The study examines the effects of five structural variables (population density, socioeconomic status, residential mobility, racial composition and family disruption) on the juvenile violent crime rate for counties of the Census Bureau's East North Central Region. This rate is hypothesized to be higher in counties with: greater population density, higher percentage of black residents, higher residential mobility, greater family disruption, and lower socioeconomic status. OLS regression indicated that three variables (family disruption, population density, and residential mobility) had a significant effect on the violent juvenile crime rate. The model explained just under one-third of the variation in county level rates of violent juvenile crime.

To my parents for their love and generosity.

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Statement of the Problem

The intent of this study is to identify the structural conditions which are related to violent juvenile crime rates in areas of differing population density. Specifically, the focus will be on the relative impact of structural conditions on the rates of violent juvenile crime across the rural-urban dimension.

Purpose of the study

Human ecologists have long acknowledged and studied regional differences in the rate of violent crime. From the forerunning work of Shaw and McKay to the undertakers of more current ecological studies of criminality (Blau & Blau, 1982; Harries, 1980; Messner, 1982; Sampson, 1986b), much of the focus has been on the spatial examination of inter-city or intra-city patterns of crime and violence. As a result, relatively little is known about the effect of social structure characteristics on violent juvenile crime across the rural-urban dimension.

A number of researchers have noted that violent crime is a predominantly urban enterprise (Blau & Blau, 1982; Laub, 1983). It is undoubtedly the proliferation of criminal offenses in urban areas that has led to the thorough examination of their correlates. As indicated by Lyerly and

Skipper (1981), a number of factors have influenced the emphasis on urban crime. These factors include: (1) the greater visibility of urban crime which makes it more pliable to investigation, (2) the affect of urban crime on more individuals whose collective efforts produce official responses, and (3) the heterogeneity of the population in urban areas which lends itself to the theoretical explanation of delinquency. However, even with recognition that the rates of violent crime differ dramatically across areas of varying population density, little effort has been expended in order to determine if the correlates of urban delinquency are also correlates at other stages of the continuum of population density. For example, in a study of NCS data, Sampson (1986b) concluded that policies, programs and responses based on the assumption that the structural determinants of crime do not vary across the rural, suburban, urban dimension may be misdirected. Therefore, it is important to determine the relevancy of theoretical explanations which evolved from urban ecological studies to areas which may differ in a variety of social structural conditions.

Past ecological research has identified several structural components believed to be important to the study of crime and social structure. The pioneering work of Shaw and McKay identified several structural conditions (i.e., physical status of neighborhoods, economic status, population

composition) to be related to the amount of delinquent activity in an area. Since that time, ecological research has expanded its examination to include a wider variety of social conditions. According to Dunn (1980), these social variables fall into three categories: (1) socioeconomic status, (2) family stability, and (3) ethnicity. In addition, after reviewing over 30 studies of crime rates in the U.S., Messner and Sampson (1991) found that in nearly all studies the following structural conditions are either independent or control variables: racial composition, region, population size, poverty, and income inequality. They also found a significant representation of measures of population density, age structure, racial income inequality, and family disruption in their review of the literature.

This study will attempt to determine the effect of social structure characteristics on the rate of violent juvenile crime through the examination of counties in a five state area. The five state area includes the states of Wisconsin, Illinois, Indiana, Michigan, and Ohio. This conglomeration of states was chosen as a result of the great variation that exists in each state with respect to population density. In addition, these states comprise the East North Central region of the United States as defined by the U.S. Bureau of the Census. The rate of violent juvenile crime will be determined by 1990 UCR arrest data and Census data (STF3-A)

will be used to provide data on social structural characteristics for all counties in the five state area.

The purpose of this research is to contribute to the understanding of the impact of structural characteristics on the rate of violent juvenile crime across areas of varying population density. Its intent is to answer the calls by previous researchers for additional investigation of this topic and to determine the applicability of theory derived from the urban delinquency milieu to areas at any point on the population density continuum. Hopefully, its results will add to the multi-dimensional cognizance of delinquency and the environment.

Research Questions

This investigation will focus on several important questions. First, it will attempt to determine the individual and combined effects of five structural variables (population density, socioeconomic status, residential mobility, racial composition, and family disruption) on the juvenile violent crime rate for counties in the five states of the East North Central region (Wisconsin, Illinois, Indiana, Michigan, Ohio). Second, it will attempt to discover whether, controlling for other factors, population density has a significant impact on violent juvenile crime rates at the county level. Finally, based on the results produced, it will attempt to ascertain

whether a human ecological theory used to explain urban delinquency can also be effective in explaining delinquency in other areas.

Chapter 1

THEORETICAL FRAMEWORK

The purpose of this research is to determine the structural conditions which are related to rates of violent juvenile crime in areas of varying population density. The foundation of this research lies in the field of human ecology; therefore, it will be important to understand the meaning and purpose of human ecology as well as previous attempts to advance the field. Ecological theory has been in existence for many years and since its inception has shaped a large body of research examining the relationship between environmental characteristics and crime. Human ecology refers to the examination of the interrelationship between humans and their physical/social environment (Hagan, 1994). According to Vito and Holmes (1994), a central theme of human ecology is that crime can be discovered in an environment's physical and social composition. Through the study of ecological forces researchers attempt to determine the effect setting has on the incidence of criminal activity. Ecological theory relates the promotion of crime to a particular area's social and physical make-up. Sampson (1986a) indicates that the central theme of the ecological approach is that characteristics such as the division of labor, income inequality and percent divorced have an impact on crime which is independent of and not

attributable to the features of individuals. Macro level research seeks to determine the characteristics of communities, rather than those of individuals, that are related to higher crime rates.

Park

In order to provide the theoretical groundwork for this investigation, it is crucial to identify the important concepts and issues regarding the study of delinquency and the environment as related by significant theorists in the field of human ecology. Of great importance is Robert Park, a member of the Chicago School, who introduced the application of ecology to the study of human society. Taking from plant and animal ecology he formed what he called the theory of human ecology (Vold and Bernard, 1986). According to Park (1925), human ecology is a science which studies the forces responsible for creating an orderly and typical grouping of the population and institutions within an urban community. Park borrowed two important ideas from plant and animal ecology which created the foundation for the study of human ecology. The first idea he acquired from ecology was that of symbiosis. In ecology, symbiosis refers to the natural economy of plant and animal life in a particular habitat. In other words, symbiosis results when different types of organisms live together in a community and receive mutual benefits. Park gleaned this perspective from ecology and

applied it to his study of the city. Much like an ecologist might view a forest, Park viewed the city as an organism. Along with this conception of the city as organism, came Park's notion that certain natural areas existed within the city. Natural areas (composed of individuals of similar races, occupations, etc.) were characterized by the symbiotic relationships both between members of each individual natural area and between natural areas themselves (Vold & Bernard, 1986).

The process of invasion, dominance and succession was the second idea Park acquired from plant ecology. He used these concepts to describe the shifts in neighborhood composition within the city. Park believed that the concepts used to describe the evolution of a forest were valid in the explanation of a neighborhood's change from residential to commercial or from predominantly one ethnic group to another (Vold & Bernard, 1986).

Robert Park (1925) used what he termed the theory of human ecology to study the social problems of the city. He believed the city to be characterized by "impersonal and rational" human relations and an unceasing state of crisis (p. 22). With regard to social control and the city, Park notes the importance of the replacement of direct associations with indirect associations in the urban environment. He states that the conditions of social control are drastically changed

and the problems increased as a result of the conditions present in the urban milieu. He feels that social control originates somewhat spontaneously rather than in response to a collective belief and concludes that the deteriorating aspects of life in the city changed the role of core institutions such as the church, the family and the school. He noted the schools assumption of certain family functions. The increase in crime within large cities was believed to be the result of the disintegrating influence of the urban environment on local attachments and the primary group.

Burgess

Of additional importance to this investigation is Ernest Burgess, another Chicago School sociologist. He created the concentric zone model which portrayed what he believed to be the tendency of cities to expand outward from the commercial city center. He, like Park, incorporated the ecological concepts of invasion, dominance, and succession into his discussion of urban growth (Vold & Bernard, 1986). Burgess (1925) described zone expansion as each inner zone extending its area by invading the next zone. He termed this process "succession" (p. 50). He illustrated that the expansion of the city resulted in zones of individuals grouped by residence and occupation (i.e., zone in transition, zone of workingmen's homes, residential zone). He described each of the zones and noted the particular type of individual living in each. Zone

II, the one he termed the zone in transition, was characterized as the oldest, most deteriorated section of the city and marked by poverty, crime and vice. Perhaps most important to note about Burgess is the application of his concentric zone model to the study of juvenile delinquency by Shaw and McKay.

Wirth

Another Chicago School sociologist, Louis Wirth (1964), uses the framework of human ecology in an attempt to define and formulate a theory of urbanism. In his classic essay, "Urbanism as a Way of Life," Wirth (1964) describes the city and country as occupying positions at opposite ends of a continuum of communities. He defines the city as "a relatively large, dense, and permanent settlement of socially heterogeneous individuals" (p. 66), and goes on to insist that the attributes of urbanism are emphasized more in communities which are larger in population size, more densely populated, and marked by a greater amount of heterogeneity. In his theoretical formulation, Wirth attempts to address each of these three factors.

With regard to population size, Louis Wirth depicts urban individuals as having a wider range of personal characteristics, cultures, professions, and opinions than rural individuals. As a result of the greater number of inhabitants, there is a greater possibility that there will be

differences among them. In addition, he describes the lack of a sense of community within the urban environment as the lack of kinship and neighborly bonds among individuals of diverse backgrounds. The common bonds present in folk society are replaced by competition and mechanisms of formal social control. Wirth believes that as the size of a community increases, the likelihood of a member of that community knowing all other members on a personal basis becomes limited. He characterizes the social environment of the urban community as being marked by a greater number of secondary contacts than primary contacts. In other words, although urban inhabitants may have more acquaintances, they know a smaller proportion of those they come in contact with on a daily basis and of those they do know, their knowledge is less intimate than rural inhabitants. The urban environment is portrayed as anonymous, superficial, and transitory.

In addressing the role of population density in urban life, Wirth contends that when individuals with no emotional attachment to each other live and work in close proximity the result is "a spirit of competition, aggrandizement, and mutual exploitation" (p. 74). Disaster and irresponsibility are quelled by instituting formal controls. Wirth believes that loneliness, friction, irritation, and nervous tension are all the product of the degree of population density within the urban milieu.

Louis Wirth also discusses the importance of heterogeneity in the urban milieu. The interaction between the diverse individuals present in the urban environment leads to a complication of the class structure and creates an arrangement of social stratification which is more differentiated than in more integrated communities. The urban individual is seen as more mobile and, therefore, more likely to come in contact with a greater variety of people. This mobility subjects the urbanite to a social status which fluctuates. This, in turn, leads the individual to view instability and insecurity in the world at large as normal. According to Wirth, city inhabitants are usually not home owners, subscribing instead to a transient lifestyle. This way of life does not sponsor neighborliness or feelings of community membership.

In Wirth's final analysis, he supports the sociological descriptions of urbanism as a mode of existence in which the strength of kinship bonds is weakened, the family's social significance declines, secondary contacts replace primary contacts, the neighborhood is absent, and social solidarity is impaired. According to Wirth, it would be expected that the urban environment, as opposed to the rural environment, would be marked by higher incidences of suicide, crime, delinquency and other forms of disorganization.

Shaw & McKay

In a landmark study of delinquency, Clifford Shaw and Henry McKay used the framework provided by Park and others at the University of Chicago. They were the first to study juvenile delinquency from the perspective of human ecology and their work has had a major effect on all endeavors proceeding it; therefore, a thorough understanding of the product of their research, social disorganization theory, is of critical importance to the current study.

In the late 1920's, Clifford Shaw and his colleague Henry McKay became interested in the spatial variation in delinquency rates within the city of Chicago and later other major cities (i.e., Philadelphia, Boston, Cincinnati, Cleveland, Richmond). Contrary to the thinking of their time, Shaw and McKay did not view delinquents as abnormal, psychologically or biologically. Instead, they focused on the role of the environment in prompting delinquent behavior (Vold & Bernard, 1986). Using official data they examined delinquency rates and community characteristics. Through this examination they observed that area rates of delinquency had remained stable over a long period of time. They also found three groups of factors important to their study of delinquency rates: (1) physical status, (2) economic status, and (3) population composition (Shaw & McKay, 1969).

Shaw and McKay used the following as indications of the physical status of communities; the location of major industrial and commercial developments, the distribution of buildings condemned for demolition or repair, and the percentage increase or decrease in population by square-mile areas. They found that delinquency was most prevalent in areas marked by the presence of industry and commerce as well as those areas adjacent to areas of industry and commerce. Those neighborhoods also had the highest amount of condemned buildings. Shaw and McKay noted that these areas are also characterized by a decrease in population as residential buildings are taken over for commercial purposes. In relation to population increase or decrease, they found that communities with the highest delinquency rates were those in which the population decrease is most rapid (Shaw & McKay, 1969).

The following were used as indicators of economic status by Shaw and McKay: percentage of families on relief, median rentals, and home ownership. Similar to the pattern they found with physical status, the areas of lowest economic status were plagued by the highest rates of delinquency. Shaw and McKay insist however, based on the stability of delinquency rates over an extended period of time, that economic status solely does not explain juvenile delinquency. The correlations displayed with regard to economic status

simply lead to the interpretation that impoverished people and their communities lack adequate resources (Kornhauser, 1978).

In their analysis, Shaw and McKay use the percentage of foreign-born and negro heads of families as an indicator of population composition. Their analysis indicates that those areas comprised of higher concentrations of foreign-born and negro heads of families are characterized by the highest rates of delinquency. Shaw and McKay do not, however, conclude that delinquency is the product of any specific racial or ethnic group. This conclusion is based on the fact that regardless of shifts in the ethnic/racial composition of the population in Zone II, high rates of delinquency survived[1]. According to Shaw and McKay (1969), the assumption that delinquency involvement was the result of a particular racial or ethnic background would be incorrect due to the complete change in population composition and the absence of a notable change in delinquency rates.

Using the framework of ecology, Shaw and McKay stressed the relation of invasion, dominance, and succession to delinquency and its correlates. They noted that areas in Zone II are most frequently the victims of these processes (i.e., commercial expansion and the influx of new immigrants). Shaw

[1]Zone II refers to the *zone in transition* (discussed earlier in this chapter). Shaw and McKay relied heavily upon the concentric zone model created by Ernest W. Burgess.

and McKay indicated that rapid population turnover affects the community by severing the lines of communication that existed and causing the dismantling of formal social organizations. The residents no longer identify with the community or each other and there exists a decreased ability of people to control their children. The lack of neighborliness, brought on by a transitory population, results in a decreased capacity for informal social control. Neighbors no longer know each other or each others' children. Therefore, neighbors are no longer able to police neighborhood youth (Vold & Bernard, 1986).

Their analysis of juvenile delinquency and the environment led to the creation of social disorganization theory, which has played a notable role in the development of a great deal of contemporary theoretical criminology (Vold & Bernard, 1986). Shaw and McKay's conception of a socially disorganized community is one which does not have the ability to actualize its values. The community problems they studied and found to be correlated with delinquency are indicators of social disorganization. The premise of Shaw and McKay's social disorganization theory is the following:

> All members of the society are said to have certain broadly similar basic values, and the source of delinquency is sought in community conditions that prevent their being attained. It is not an ethnic or racial culture, a class culture, or a slum culture that harbors delinquent values; it is a community that cannot supply a structure through which common values can be realized and common problems solved (Kornhauser, p. 63).

Kornhauser

In her book, Social Sources of Delinquency, Ruth Rosner Kornhauser (1978) offers a thorough evaluation and explication of Shaw and McKay's social disorganization theory which will prove important to this investigation. She labels Shaw and McKay's delinquency theory a "mixed model" characterized by the merging of both a control model and a cultural deviance model. According to Kornhauser, Shaw and McKay's conclusion that the "preponderance" of delinquency in the interstitial area is accounted for by the presence of a delinquent subculture is false if their control model is true. A community must be weakly controlled - disorganized - to foster a tradition of delinquency. However, according to social disorganization theory, if a community is disorganized yet lacking a delinquent subculture, a new group of delinquents and the resulting crime would be produced even if slum residents were replaced with newcomers to the environment (p. 69).

Upon this evaluation, Kornhauser extracts "a noncircular control model" from social disorganization theory which she contends is congruent with the data, logic and intentions of Shaw and McKay. She believes that social disorganization does not encompass the realm of the delinquent or criminal system. Kornhauser's control model defines social disorganization as "the ineffective articulation of values within and between

culture and social structure" (p. 69). She diagrams the model in the following manner:

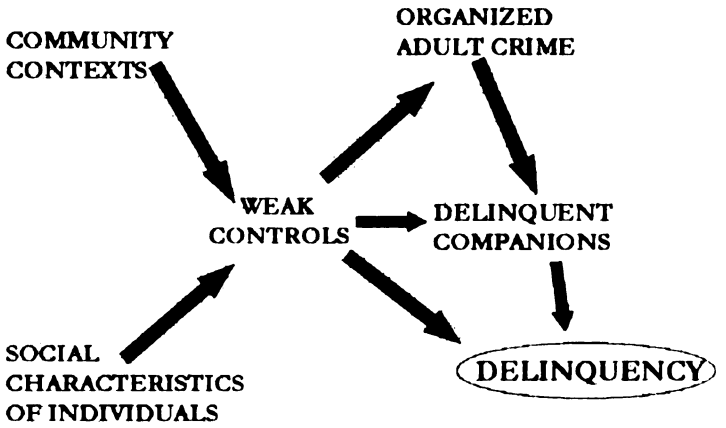

Figure 1 - Kornhauser's Control Model

She discounts the cultural deviance model and concludes that young people become delinquent based on the amount of control commanded by their community rather than through the association with delinquent peers.

Kornhauser insists that the internal logic of Shaw and McKay's theory is consistent with her explication based on the inferences their theory produces. The first inference she refers to is that social disorganization must occur in order for a delinquent subculture to exist. Ruth Kornhauser believes that the effects of economic level, mobility and heterogeneity on community culture and structure represent the main issues of concern for Shaw & McKay. The second inference that she makes reference to is that the direct path drawn by

Shaw and McKay between a delinquent subculture and resulting delinquency must be invalid according to the control model portion of social disorganization theory.

In her theoretical explication, Kornhauser focuses on the importance of three characteristics in her description of social disorganization. Those characteristics are economic level, degree of heterogeneity, and amount of mobility. With respect to economic level, Kornhauser points out that in Shaw and McKay's analysis, poverty was the most significant determinant of slum disorganization. Heterogeneity is important to the model as a result of its role as a barrier to shared community values. In addition, a community marked by high population turnover indicates that the subcultures to which these individuals belong espouse "values and practices" which are not effective in their new environment. Communities characterized by a greater degree of mobility also suffer from the need to continually re-establish the relationships and communication lines which have developed. Kornhauser assumes that economic level, mobility and heterogeneity respectively are the elements which determine whether or not communities within a city will produce an effective control system.

Kornhauser's model indicates that these ecological causes lead to both cultural disorganization (diversity of subcultures, obsolescence of subcultures, limited scope of community culture, irrelevance of societal culture) and

structural disorganization (lack of institutional resources, institutional instability, isolated institutions). The consequences outlined by the model include each of the following: the community and family's lack of ability to exert direct external control, absence of internal values and internal controls, weak social bonds and institutional impotence in the exaction of community values. In concluding her interpretation of social disorganization theory, Kornhauser suggests that the aggregate community characteristics produce variations in levels of disorganization resulting in differences in the strength of community controls accounting for variations in delinquency rates.

This study will not attempt to directly test Shaw and McKay's social disorganization theory. It will, however, rely on the conceptual framework they pioneered for the application of ecological theory to the study of delinquency. The control theory explication of Shaw and McKay's theory offered by Kornhauser will, in particular, serve as a guide. More generally, this study will rely on the basic premise espoused by ecological theory that the environment and its characteristics have an effect on those in it. With this foundation, I hope to add to the intra- and inter-city studies that have been completed by addressing the impact of social

structural characteristics across areas of great variation in population density -- namely across the rural-urban dimension.

Chapter 2

EMPIRICAL FINDINGS

From the work of the early ecological theorists as well as more contemporary researchers, are drawn five variables central to the discussion of the relationship between the environment and crime. Those variables are population density, socioeconomic status, residential mobility, racial composition and family disruption. Kornhauser (1978) describes age, sex, race, ethnicity, socioeconomic status and community size as staples of delinquency theory. Others conclude that community-level elements like racial segregation, residential mobility and population turnover, family disruption, and the dimensions of local social organization (i.e., social resources) are structural factors which deserve additional inquiry (Sampson & Wilson, 1995).

Several researchers have noted the importance of population density in the study of delinquency rates (Beasley and Antunes, 1974; Mladenka and Hill, 1976; Smith and Jarjoura, 1988). In his study of risk factors related to violent victimization and offending, Sampson and Lauritsen (1994) note that characteristics related to housing and population density seem to increase the amount of violent crime in an area regardless of compositional factors. In a 1988 study, a number of economic and social variables were

controlled for and the results displayed that density's effect on violent crime was one of the strongest of those observed (Smith & Jarjoura). Density is often described as a characteristic of urbanized areas which promotes criminality (Harries, 1980). It is viewed as forcing individuals into unwanted interactions resulting in stress. In a study of the impact of neighborhood characteristics and urbanization on rates of violent and theft crimes, Sampson (1986b) investigated the impact of the structural density of neighborhoods in rural and urban areas. He found that structural density was a significant positive predictor of victimization rates and had a stronger effect on violent crime than urbanism. The conclusion reached was that the results support the idea that areas of high structural density obstruct effective surveillance and guardianship. He also found that structural density had a greater effect on crime rates in rural and suburban areas than in urban areas. Urban youth are qualitatively and quantitatively more criminally active than rural or suburban youth (Feld, 1991).

Socioeconomic status has been found to be an important predictor of crime rates in numerous studies. Those with lower incomes and education levels are more likely to become victims of violent crime in all areas (Bachman, 1992). Median education level has been found to have a negative association with homicide, an association which was stronger in rural

areas (Quinney, 1966). Both median income and median education level have been found to be negatively associated with crime (Dunn, 1980). In their test of an opportunity theory of criminal victimization, Cohen, Kluegel and Land (1981) found an inverse relationship between income and assault and a direct relationship between income and personal larceny across urban areas, mid-size urban areas and small town/rural areas. In other research, Albert Reiss (1951) found a significant association between family income level and juvenile probation outcome (Reiss, 1951). The higher level of delinquency among juveniles in lower income families was believed to be related to the diminished parental authority and decreased family unity which characterized such families as well as the failure of the juvenile members of these families to respond to social control. Chilton's 1964 study of delinquency in Baltimore, Detroit and Indianapolis found "that delinquency still appears to be related to transiency, poor housing and economic indices; this supports the assumption of almost all sociological theories of delinquency, that delinquency in urban areas is predominantly a lower-class male phenomenon" (pp. 82-83). The results of previous studies considered together indicate a "valid nonnegligible relation between SES and extreme delinquency in large, heterogeneous communities" (Kornhauser, p. 99).

Residential mobility has also received much attention in ecological studies of delinquency. In his study of cities and crime, Harries (1976) found that crime rates and residential stability were inversely related. Residential mobility, number of years at present address, was found to be inversely related probation success (Reiss, 1951). A study of intra-urban mobility in Omaha discovered that court adjudicated delinquents belonged to families who moved more frequently around the city than the average family (Sullenger, 1950). More recently, a review of 20 years of community level research on interpersonal violent crime by Sampson and Lauritsen (1994) uncovered that Shaw and McKay's theory was supported by the research with regard to the correlates of residential mobility, poverty and heterogeneity.

A recent study of race, crime and urban inequality examined the structural importance of the relationship between race and crime (Sampson & Wilson, 1995). The need to view black and white criminality in light of community context is stressed, and it is noted that black and white crime rates both vary by ecological characteristics. The percent of black residents in a county was used by Wilkinson (1984a) as an indicator of racial composition in his study of homicide and rurality and the measure was determined to have substantial positive effects. The percentage of black residents in the population has been used as an indicator of ascriptive

inequality and found to be associated with high rates of nonlethal violence (Wilkinson, 1984). Percent black has also been treated as an indicator of SMSA racial composition (Blau & Blau, 1982). A strong correlation between percent black and violent crimes in an SMSA was discovered; however, when income inequality and racial income inequality are controlled, this positive influence decreases. It was suggested that due to the intra-racial nature of most violent crime, the findings indicate that "general and racial inequalities produce social disorganization and discontent which find expression in frequent nonrealistic conflict and criminal violence" (p. 122). Further, it was noted by Lander (1951) that homogenous communities displayed the lowest delinquency rates for whites and blacks, while areas characterized by an equivalent combination of whites and blacks experienced the highest delinquency rates.

Family disruption is the final variable which will be addressed in this study. Divorce is viewed as an indicator of community disruption and the percentage of divorced persons in an MSA previously showed a strong positive relationship with each type of violent crime examined (Blau & Blau, 1982). The theoretical importance of family disruption has been related to a decrease in both formal and informal social controls and family structure is viewed as an important determinant of variations in crime rates. Measures of family disruption such

as overall divorce rate and proportion of black and white intact families were found to have strong effects on offending (Sampson, 1986b).

Chapter 3

METHODOLOGY

Data and Variables

Two sources of data will be used in this study; 1990 U.S. Census data (STF3-A) and 1990 Uniform Crime Report (UCR) data. STF3-A will be used to provide information on all structural variables. STF3-A supplies county level data based on a weighted sample of the 1990 census. Uniform Crime Report data will be used to provide information on juvenile violent crime arrest statistics.

Questions surrounding the accuracy of official arrest data in reflecting the total crime rate are frequently raised. Some researchers note, however, that comparisons of UCR data with National Crime Survey Data suggest strong agreement between arrest and offending rates (Hindelang, 1978). This has led to the conclusion by some individuals that increased trust may be placed in the validity of arrest data. The most serious of the UCR crimes have been viewed as the most reliably recorded as the seriousness of the crime committed has been believed to be the strongest predictor of arrest. The influence of racial and class biases in police contacts for common offenses has been evidenced; however, no such connection has surfaced between racial bias in arrest and crimes such as homicide and robbery (Messner & Sampson, 1991).

Blau & Blau (1982) further report that regardless of the known problems with official arrest statistics, the UCR provides fairly accurate indications of comparative frequencies of serious crimes, but not of their absolute frequencies.

This research will examine a five state area. The five state area includes the states of Wisconsin, Illinois, Indiana, Michigan, and Ohio. These states comprise the East North Central region of the United States as defined by the U.S. Bureau of the Census.

The unit of analysis for this investigation will be the county. Researchers have used the county as the unit of analysis in studies of rurality and violent crime. Wilkinson (1984a & b) describes the county as a useful unit of analysis due to its containment of all portions of a local ecology. In addition, he notes, that geographic areas can be matched to areas delineated in Census, crime and other data reports. Kowalski & Duffield (1990) recommend the use of the county as the unit of analysis for the following reasons: county populations are smaller than most other units for which crime data are available allowing for a more definite measurement of factors; county level analysis limits the issue of misclassifying the place of residence of homicide victims; use of counties decreases systematic misreporting in official statistics; problems related to aggregated data used to examine structural factors are reduced and the possibility

that rurality factors will be masked is decreased when county level analysis is conducted as opposed to state and MSA level analysis. It is acknowledged, however, that units of analysis smaller than the county would be preferable for use in order to assess the effects of structural characteristics on the violent juvenile crime rate in specific neighborhoods. Unfortunately, arrest data is not available for census tracts or police jurisdictions in non-MSA counties.

Five **independent variables** and one dependent variable will be included in the analysis. The five independent variables consist of the following: (1) population density, (2) socioeconomic status, (3) racial composition, (4) residential mobility, and (5) family disruption. *Population density* is defined as the number of people per square mile residing in the county at the time of the 1990 census. *Socioeconomic status* is defined as the median income of the county and percent of high school graduates residing in the county at the time of the 1990 census. *Percent black* is used as the indicator of the county's racial composition as reported in the 1990 Census. *Residential mobility* is defined as all individuals age five and older who at the time of the 1990 census were residing in the same house they lived in on April 1, 1985. Further, the Census Bureau includes persons who had moved, but by 1990 had returned to their place of residence in 1985. *Family disruption* will be defined as the

county's percent divorced or separated of those who have ever been married.

The **dependent variable** will be the violent juvenile crime rate. *Violent juvenile crime rate* refers to the rate of arrests of juveniles ages 10-17 for murder/nonnegligent manslaughter, rape, robbery, and aggravated assault as defined by the Uniform Crime Reports (UCR). Crime rates display the number of juveniles arrested per every 100,000 people age 10-17 in the population.

To determine the relative contribution, if any, of the above variables on county violent juvenile crime rates, a multiple regression analysis using the following model will be performed:

County Violent Juvenile Crime Rate = α + β(population size) + β(median income) + β(percent high school graduates) + β (percent black) + β (same residence in 1985) + β (percent divorced or separated)

Definition of Terms

The following are nominal definitions of some of the important terms used in the study.

Rural-urban: This concept will be seen as a continuum of counties from the most rural to the most urban based on population density. In his commentary on urbanism, Wirth (1964) described a city as a large, dense, heterogeneous,

permanent settlement (p. 66). Rural is often defined as isolated areas of low population density economically tied to the agricultural occupation and characterized by homogeneity, informality, and traditional ideas and value systems (Weisheit, Wells, & Falcone, 1994).

Juvenile violent crime index: This term refers to the rate of arrests of juveniles ages 10-17 for murder/nonnegligent manslaughter, rape, robbery, and aggravated assault as defined and recorded by the Uniform Crime Reports (UCR). Crime rates refer to the number of juveniles arrested per every 100,000 people age 10-17 in the population. The formula used to calculate juvenile arrest rates is:

$$\text{Arrest Rate} = \frac{number of juvenile arrests}{size of juvenile population} X\ 100{,}000$$

Social structural characteristics/conditions: Any characteristics defined by previous ecological research as being related to the commission of delinquent acts. For example, socioeconomic characteristics, family variables, residential mobility, and heterogeneity.

Population density: This concept refers to the number of people per square mile residing in a particular county at the time the census was taken.

Hypotheses

Based on previous ecological analyses of juvenile delinquency, I offer several hypotheses. First, it is hypothesized that as county population density increases, so too does the rate of violent juvenile crime. Second, as county socioeconomic status decreases, the violent juvenile crime rate will increase. Third, the violent juvenile crime rate will be higher in counties with a higher percentage of black residents. Fourth, counties marked by higher residential mobility will have higher violent juvenile crime rates than counties characterized by lower rates of residential mobility. Finally, it is hypothesized that the violent juvenile crime rate will be higher in counties with a greater percentage of single-headed households resulting from divorce or separation.

Chapter 4

ANALYSIS AND FINDINGS

Table 1 indicates means and standard deviations for the counties of the East North Central Region of the 1990 Census for each of the five independent variables and the dependent variable discussed. The sample size of counties included in the analysis, N=347, does not represent all of the counties in the region. The total population consisted of 437 counties; however, 90 counties (concentrated most heavily in Indiana and Ohio) lacked the amount of agency reporting necessary for inclusion in published figures. Table 1 displays the differences in means between the counties included in the analysis and those that were missing. As indicated in the table, the missing counties had significantly lower levels of population density (97.65 people per square mile as compared to 206.96), black residents (1.22 percent as compared to 3.04) and high school graduates (72.83 percent as compared to 74.75). Those indicators that were not significantly different included percent divorced or separated, median family income and percent in same house in 1985. The possible impact of excluded counties will be addressed in the Conclusion section.

TABLE 1 - Descriptive Statistics

Variable Description	COUNTIES INCLUDED IN ANALYSIS Mean	Standard Deviation	COUNTIES EXCLUDED DUE TO LACK OF REPORTING Mean	Standard Deviation
Violent Crime Index Juvenile Arrest Rate	151.37	232.94		
Population Density (people per sq. mile)	206.96	512.36	97.65**	68.19
% Divorced or Separated of those Ever Married	11.46	2.50	11.15	1.82
Median Family Income in 1989	31255.17	6070.67	31102.14	5253.77
% Black	3.04	5.62	1.22**	1.86
% High School Graduates of those 18 and over	74.75	5.82	72.83*	5.97
% in Same House in 1985	59.95	6.11	60.58	4.96
N	347		90	

* = t-test (two-tailed) showed that mean value of counties excluded from the analysis is significantly different from mean value of included counties at alpha = .01

** = t-test showed that means of included and excluded counties are significantly different at alpha = .001

Table 2 displays a correlation matrix for the five independent variables chosen for examination and the dependent variable, violent juvenile crime rate. Three of the independent variables (population density, family disruption and racial composition) displayed positive correlations with the dependent variable significant at the .001 level. Residential mobility produced a negative correlation significant at the .01 level. These results are consistent with the theoretical framework and the research hypotheses outlined in Chapter Four. Indicators of socioeconomic status (median family income and percent high school graduates) were positively correlated with violent juvenile crime rate. This result is opposite of the expected direction of the relationship; however, the correlations were not significant even at the .05 level.

Other correlations in the matrix which are important to note are those between four of the independent variables. Those correlations, all in the .6 range, were between the following: percent high school graduates and median family income, family disruption and percent black, and population density and percent black. Since correlations this high between independent variables raise a concern about multicollinearity, collinearity diagnostics were run on all variables in the model (these will be included in Table 3).

Table 2 - Pearson's Correlations for All Variables

	Population Density (people per sq. mile)	% Divorced or Separated of those Ever Married	Median Family Income in 1989	% Black	% High School Graduates of those 18 and over	% in Same House in 1985
Juvenile Violent Crime Index Rate	.391**	.515**	.077	.439**	.060	-.180**
Population Density (people per sq. mile)		.443**	.367**	.624**	.156*	-.243**
% Divorced or Separated of those Ever Married			.072	.661**	.055	-.502**
Median Family Income in 1989				.162*	.685**	-.415**
% Black					-.013	-.275**
% High School Graduates of those 18 and over						-.534**

* = signif. at .01
** = signif. at .001
(two-tailed)

Table 3 displays the ordinary least squares regression of the juvenile violent crime index rate on each of the independent variables. As indicated in the table, three variables had a significant effect on the violent juvenile crime rate. Percent divorced or separated (family disruption) shows a positive relationship with the dependent variable, significant at the .001 level. The standardized coefficient value suggests that this effect was the strongest of any of the variables examined (Beta = .464). Population density also displayed a positive relationship with the violent juvenile crime rate. This relationship was significant at the .01 level. The residential mobility variable, percent in the same house in 1985, had a positive effect on the violent juvenile crime rate. This relationship was significant at the .05 level. The standardized coefficients suggest that population density and residential mobility ranked second and third, respectively, in terms of their effect on the violent juvenile crime rate.

Racial composition and percent high school graduates had an insignificant, positive relationship to the dependent variable. Median family income had an insignificant, negative relationship.

As discussed previously, due to the high correlations between some of the independent variables collinearity

TABLE 3 - Predictors of Juvenile Violent Crime Arrest Rate

Variable	Unstandardized Coefficient	Standardized Coefficient	Std. Error	Tolerance
Population Density (people per sq. mile)	.080**	.177	.028	.530
% Divorced or Separated of those Ever Married	43.206***	.464	6.489	.413
Median Family Income in 1989	-.002	-.060	.003	.444
% Black	3.271	.079	2.898	.411
% High School Graduates of those 18 and over	5.465	.136	2.785	.416
% in Same House in 1985	6.305*	.165	2.459	.483
Constant	-1085.479***		315.573	
R^2	.317			

* = sig. at .05
** = sig. at .01
*** = sig. at .001
(all two-tailed)

diagnostics were performed. As shown in Table 3, the results of the diagnostics suggest that there is no collinearity problem with the variables. All variables' tolerance values were above .1. In addition, regression models were run including only one indicator of SES to determine whether one would display a significant relationship without the presence of the other. The results indicate that neither median family income nor percent high school graduates have a significant relationship with violent juvenile crime when each is the single measure of SES. The explanatory power of the model also does not increase when only one measure is included. As just pointed out above, the violent juvenile crime rate was affected positively by a county's percent of residents in the same house in 1985. Due to the fact that this relationship was statistically significant, opposite the direction hypothesized, *and* opposite the direction of the bivariate Pearson correlation value, some additional analyses were deemed necessary. Specifically, additional regressions were performed using the residential mobility variable and each of the other independent variables. This was done to determine which variable, when controlled, was responsible for the change in the direction of the "percent in same house in 1985" variable. After examining each set of regression results, it was found that percent divorced/separated was the only variable causing the

TABLE 4 - Previous Model without Family Disruption

Variable	Unstandardized Coefficient	Standardized Coefficient	Std. Error
Population Density (people per sq. mile)	.101***	.221	.030
Median Family Income in 1989	-.006*	-.147	.003
% Black	13.018***	.314	2.656
% High School Graduates of those 18 and over	4.246	.106	1.439
% in Same House in 1985	-1.701	-.045	2.277
Constant	51.611		281.724
R^2	.228		

* = signif. at .05
*** = signif. at .001
(all two-tailed)

residential mobility variable to change directions when entered (see Table 4 for regression model excluding percent excluding family disruption). Also of note, is that dropping family disruption from the model results in percent black becoming significant.

As indicated by Table 3, the model's R^2 is .317. Thus, all independent variables together explain slightly less than one-third of the variation in county level violent juvenile crime rates. Table 4 shows that a regression model excluding family disruption as an independent variable decreases the R^2 by nearly .10.

As indicated previously, the sample size of the study was 347. The total population consisted of 437 counties;

however, some counties (particularly in Indiana and Ohio) did not submit UCR data on juvenile arrests for violent index crimes in 1990. Had these counties been included, the sample size would have increased by 90 counties and, therefore, interpretation of regression results might have been different even if the same coefficient was obtained. Their inclusion might not effect the coefficients, but could effect the significance of the results. This assumes that the missing counties do not have characteristics which would change the value of the regression coefficients.

Chapter 5

CONCLUSIONS

It was hypothesized that increases in population density would have a similar effect on the rate of violent juvenile crime at the county level. It was further predicted that increases in residential mobility and family disruption would also be related to corresponding increases in the dependent variable. Finally, it was hypothesized that increases in a county's socio-economic status would be negatively related to the violent juvenile crime rate.

In support of the hypothesis and consistent with the theoretical basis, family disruption was significantly related to the rate of violent juvenile crime. This relationship was the strongest of any of the variables examined. As stressed by early ecological theorists such as Park, the primary group (family) is extremely important in instilling the restraint and inhibition characteristic of youth in areas of low crime and vice. Even over-looking previous research, it does not seem to be a stretch to relate the county rate of divorce/separation with increases in juvenile violence, considering the important role the family plays in the socialization of community members. A more complete understanding of the impact of family disruption on violent juvenile crime may be gained in the

future by examining more specific family types separately (i.e., divorced families, separated families, never married single parent families).

The results of this study also support the hypothesis regarding population density. Population density was significantly and positively related to the violent juvenile crime rate. This is consistent with ecological theory which relates increases in population with decreases in neighborliness and community bonds. This in turn leads to isolation and disorganization and eventually delinquent activity. Future research might go a step further by looking at lower levels of aggregation (i.e., police jurisdictions, census tracts). Admittedly, the unit of analysis used in this thesis, the county, covers a large area and much could be gained by observing the variance of violent juvenile arrest rates within rural counties. Thus far, the majority of research examining smaller units of analysis has been conducted solely within MSA counties. In addition, another option would be to study the impact of structural density within these census tracts. Previous research has shown the positive relationship between structural density and criminal victimization to be stronger in rural areas (Sampson, 1983).

Three variables, socioeconomic status, residential mobility and racial composition were inconsistent with the

related hypotheses. Median family income, an indicator of SES, displayed an insignificant relationship with the violent juvenile crime rate. The second indicator of SES, percent of high school graduates of those over 18 in the county, also posted an insignificant relationship with the dependent variable. An option for future research would be to examine the relationship between percent college graduates in the county or census tract and violent juvenile crime rates. Percent college graduates in a county may provide a more updated, useful measure of educational attainment as opposed to that used in earlier ecological research.

Racial composition, defined as percent black in the county, also displayed an insignificant relationship with the violent juvenile crime rate after controlling for the other independent variables. An examination of a correlation matrix of all variables shows that this result is likely due to the strong relationship of percent black to two other independent variables, family disruption and population density (see Table 2), whose relationship to the dependent variable remained significant after controlling for the other variables. As a result, percent black does not appear to have a direct effect on the violent juvenile crime rate. Rather it seems that the apparent effect of percent black on the dependent variable as revealed in the

bivariate analysis is a result of blacks residing in areas of high population density and family disruption.

Future research may expand on the explanatory power of SES and racial composition by examining a region's level of relative deprivation. Income inequality may be operationalized by using the Gini coefficient (Blau & Blau, 1982). Measuring the economic inequality between racial groups in a county or MSA may explain more variation in the violent juvenile crime rate than the percent of a particular group within an area's population.

Residential mobility, as indicated previously, had a significant effect on the county juvenile violent crime rate after controlling for the other variables. Its bivariate correlation with the dependent variable displayed a negative relationship; however, in the multiple regression it had a significant positive effect on the rate of violent juvenile crime. Further analysis found that family disruption was the variable responsible for the change in the direction of the relationship between residential mobility and violent juvenile crime rate. The reason for this result may be that when family disruption is controlled for, mobility within the counties may be closely related to affluence as opposed to the economic factors that have been associated with delinquency. Therefore, it would stand to reason that

as mobility increased within the county, the rate of violent juvenile crime would decrease.

Additionally, as indicated previously, the deletion of family disruption from the model resulted in percent black becoming significant. A possible explanation for the unexpected effect of family disruption on percent black might be the existence of a chain relationship between the two variables. It may be that blacks have higher rates of family disruption which in turn leads to higher levels of violent juvenile crime. A higher rate of family disruption among blacks would not be inconceivable when other situational variables such as poverty and unemployment are considered.

As discussed in the results section, the independent variables included in this model were found to explain just under one-third of the variation in the dependent variable, county rates of violent juvenile crime. It is believed that using some or all of the above suggestions for future research would enhance the explanatory power of the regression model. Another possibility for future research would be to apply the model to each of the violent index crimes separately and compare the results. It is possible that the variables may have a lesser/greater effect depending on the nature of the violent crime being considered as a dependent variable.

The importance of the missing 90 counties in the analysis is unknown. It is clear that the means of three independent variables (population density, percent black and percent high school graduates) were significantly different in the missing counties and those included in the analysis. In comparison to the included counties, the excluded counties had two characteristics, lower percent black and lower population density, that would support a claim that the overall juvenile violent crime rate of the East North Central Region would decrease (i.e., less than 151.37 as indicated in Table 1) if they were included. However, how the individual effects of each of the independent variables would change cannot be determined.

The results of this study suggest that family disruption is a significant factor in a county's rate of violent juvenile crime. Therefore, the findings would support policy directed at strengthening the family or eradicating the various regional factors which may be having a negative impact on the family. Also, considering the significant impact of population density on the violent juvenile crime rate, additional community level efforts to combat crime and delinquency (i.e., neighborhood watch programs) in urban areas may be well founded.

This study was an attempt to contribute to the understanding of the importance of certain structural

characteristics on the violent juvenile crime rate across areas of varying population density. The findings that population density and family disruption are significantly related to the violent juvenile crime rate give credence to the assertion that the social conditions that increase the likelihood that a juvenile will participate in violent criminal activity are worthy of study. It is also important to note that the effect of family disruption remained when population density was controlled; therefore, it maintained its relationship with the violent juvenile crime rate across the urban-rural dimension. The results suggest that further study of ecological variables is warranted, and that the areas studied should encompass communities of all types.

BIBLIOGRAPHY

BIBLIOGRAPHY

Bachman, R. (1992). Crime in nonmetropolitan America: A national accounting of trends, incidence rates, and idiosyncratic vulnerabilities. *Rural Sociology, 57,* 546-560.

Beasley, R. W. & Antunes, G. (1974). The etiology of urban crime: An ecological analysis. *Criminology, 11,* 439-461.

Blau, J. R., & Blau, P. M. (1982). The cost of inequality: Metropolitan structure and violent crime. *American Sociological Review, 47,* 114-129.

Burgess, E. W. (1925). The growth of the city: An introduction to a research project. In Park, R. E., Burgess, E. W. & McKenzie, R. D., *The city* (pp. 47-62). Chicago: The University of Chicago Press.

Chilton, R. J. (1964). Continuity in delinquency area research: A comparison of studies for Baltimore, Detroit, and Indianapolis. *American Sociological Review, 29,* 71-83.

Cohen, L. E., Kluegel, J. R. & Land, K. C. (1981). Social inequality and predatory criminal victimization: An exposition and test of a formal theory. *American Sociological Review, 46,* 505-524.

Dunn, C. (1980). Crime area research. In D. Georges-Abeyie & K. Harries (Eds.), *Crime a spatial perspective.* New York: Columbia University Press.

Feld, B. C. (1991). Justice by geography: Urban, suburban, and rural variations in juvenile justice administration. *The Journal of Criminal Law & Criminology, 82,* 156-210.

Hagan, F. E. (1994). *Introduction to criminology: theories, methods, and criminal behavior.* Chicago, IL: Nelson-Hall Company.

Harries, K. D. (1976). Cities and crime: A geographic model. *Criminology, 14,* 369-386.

Harries, K. D. (1980). *Crime and the environment.* Springfield, IL: Charles C. Thomas.

Hindelang, M. J. (1978). Race and involvement in common-law crimes. *American Sociological Review, 43*, 93-109.

Kornhauser, R. R. (1978). *Social sources of delinquency.* Chicago: The University of Chicago Press.

Kowalski, G. S., & Duffield, D. (1990). The impact of the rural population component on homicide rates in the United States: A county-level analysis. *Rural Sociology, 55*, 76-90.

Lander, B. (1954). *Towards an understanding of juvenile delinquency.* New York: Columbia University Press.

Laub, J. H. (1983). Patterns of offending in urban and rural areas. *Journal of Criminal Justice, 11*, 129-142.

Lyerly, R. R., & Skipper, J. K., Jr. (1981). Differential rates of rural-urban delinquency. *Criminology, 19*, 385-399.

Messner, S. F. (1982). Poverty, inequality, and the urban homicide rate. *Criminology, 20*, 103-114.

Messner, S. F., & Sampson, R. J. (1991). The sex ratio, family disruption, and rates of violent crime: The paradox of demographic structure. *Social Forces, 69*, 693-713.

Mladenka, K. & Hill, K. (1976). A reexamination of the etiology of urban crime. *Criminology, 13*, 491-506.

Park, R. E. (1925). The city: Suggestions for the investigation of human behavior in the urban environment. In Park, R. E., Burgess, E. W. & McKenzie, R. D., *The city* (pp. 1-46). Chicago: The University of Chicago Press.

Quinney, R. (1964). Crime, delinquency, and social areas. *Journal of Research in Crime and Delinquency, 1*, 149-154.

Quinney, R. (1966). Structural characteristics, population areas, and crime rates in the United States. *The Journal of Criminal Law, Criminology and Police Science, 57*, 45-52.

Reiss, A. J., Jr. (1951). Delinquency as the failure of personal and social controls. *American Sociological Review, 16,* 196-207.

Sampson, R. J. (1983). Structural density and criminal victimization. *Criminology, 21,* 276-293.

Sampson, R. J. (1986a). Crime in cities: The effects of formal and informal social control. *Crime and Justice: A Review of Research, 8,* 271-311. A. Reiss, Jr. and M. Tonry eds.

Sampson, R. J. (1986b). The effects of urbanization and neighborhood characteristics on criminal victimization. In R. M. Figlio, S. Hakim, & G. F. Rengert (Eds.), *Metropolitan crime patterns.* Monsey, NY: Willow Tree Press, Inc.

Sampson, R. J. & Lauritsen, J. L. (1994). Violent victimization and offending: Individual-, situational-, and community-level risk factors. In A. J. Reiss, Jr. & J. A. Roth (Eds.), *Understanding and preventing violence* (Vol. 3, pp. 1-114). Washington, D.C.: National Academy Press.

Sampson, R. J. & Wilson, W. J. (1995). Toward a theory of race, crime and urban inequality. In J. Hagan & R. D. Peterson (Eds.), *Crime and inequality* (pp. 37-54). Stanford, CA: Stanford University Press.

Shaw, C. & McKay, H. (1969). *Juvenile delinquency and urban areas.* Chicago: The University of Chicago Press.

Smith, D. R. & Jarjoura, G. R. (1988). Social structure and criminal victimization. *Journal of Research in Crime and Delinquency, 25,* 27-52.

Sullenger, T. E. (1950). The social significance of mobility: An Omaha study. *American Journal of Sociology, 55,* 559-564.

Vito, G. F., & Holmes, R. M. (1994). *Criminology: Theory, Research, and Policy.* Belmont, CA: Wadsworth Publishing.

Vold, G. B. & Bernard, T. J. (1986). *Theoretical Criminology* (3rd ed.). New York: Oxford University Press.

Weisheit, R. A., Wells, L. E. & Falcone, D. N. (1994). *Crime and policing in rural and small town America: An overview of the issues.* Unpublished manuscript, Illinois State University, Department of Criminal Justice, Normal.

Wilkinson, K. P. (1984a). A research note on homicide and rurality. *Social Forces, 63,* 445-452.

Wilkinson, K. P. (1984b). Rurality and patterns of social disruption. *Rural Sociology, 49,* 23-36.

Wirth, L. (1964). Urbanism as a way of life. In A. J. Reiss, Jr. (Ed.), *Louis Wirth on cities and social life* (pp. 60-83). Chicago: The University of Chicago Press.