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Beyond crime quantites: a multilevel analysis of the relative prevalence of interracial violence

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BEYOND CRIME QUANTITIES:
A MULTILEVEL ANALYSIS OF THE RELATIVE
PREVALENCE OF INTERRACIAL VIOLENCE

A Dissertation

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

In

The Department of Sociology

by
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ABSTRACT

Prior research examining between community variations in violent crime has largely been guided by the social disorganization perspective and the systemic model of community attachment. This literature supports a strong relation between structural resource deprivation, residential instability, and rates of violent crime. In communities where poverty, unemployment, and broken families are geographically concentrated and home ownership and length of residence are relatively low, levels of violent crime are exacerbated.

This dissertation extends prior research by focusing on variation in the nature or quality of violence rather than crime rates or quantities. While many analyses explore variations in rates of crime, few have focused on understanding the contextual level predictors of variation in the relative prevalence of race specific forms of violence. The current study addresses this gap by elaborating a theoretical model that links characteristics of the contextual environment to variations in the prevalence of intra and interracial violence. It is proffered that concentrated disadvantage and residential stability decrease opportunities for fortuitous interracial associations which, in turn, reduce the likelihood that violent crime will involve actors from different race groups. Further, it is predicted that residential racial heterogeneity will increase opportunities for interracial contact and will thus be associated with an increase in the likelihood that violence will be interracial.

The model is tested by merging crime data from the National Incident Based Reporting System with data on county characteristics culled from the U.S. Census. Nonlinear multilevel regression analyses provide strong support for the predicted pattern of relations between structural features of communities and the relative prevalence of race specific forms of violence. In communities with higher levels of structural disadvantage and residential stability violent

crimes are relatively less likely to be interracial in nature. Conversely, violence that occurs in racially heterogeneous residential environments has an increased probability of being interracial. Analyses also reveal significant disparities in the contextual level correlates of black as compared to white intra-racial violence. The relevance of these findings and implications for criminological theory, future empirical research, and public policy are discussed in the concluding chapter.

CHAPTER 1: INTRODUCTION

Sociologists, criminologists, policy makers, law enforcement personnel, and the public have long been concerned with the effects that certain characteristics of contextual environments may have on disorder, crime, and violence. Beginning with the human ecology model pioneered by Thomas and Znaniecki (1920), Park (1925), Park, Burgess, and McKenzie (1925), and Thrasher (1927), social researchers have attempted to grasp a better understanding of how the structural and cultural components of communities affect patterns of violence. Unfortunately, much of this ecological or community level research has focused on a limited set of structural predictors, has failed to consider micro (individual level) and macro (community level) predictors simultaneously, and has almost exclusively focused on aggregate rates of violence. Specifically, researchers have concentrated on explaining variations in quantities or rates of crime across communities using factors such as the proportion of the population in poverty, the proportion unemployed, and residential stability. Research in this vein has highlighted a number of important community level covariates of violence, however, important questions remain open due to the focus on aggregate rates of violence. Specifically, research emphasizing disparities in the *quantity* of crime across communities neglects the notion that different neighborhood contexts also impact the nature or *quality* of violence that occurs in a community. This is an important oversight as the characteristics of the contextual environment in which violent crimes occur likely alter the various forms of violence evident in a community.

Crimes, particularly violent crimes, do not comprise a homogenous category of events. Even a single form of violence consists of incidents that are qualitatively different in their very nature. For example, a homicide committed in the context of a robbery is substantively different from a homicide that occurs during a lovers' quarrel. Such distinctions are vital as there are

theoretical and empirical rationales for speculating that the structural and cultural milieux play a significant role in determining variations in the nature of violent incidents (Anderson 1999; Baumer, Horney, Felson, and Lauritson 2003; Kubrin 2003; Warner 2003, Sampson and Bean 2006). Moreover, such contextual effects should be evident even after controlling for the situational characteristics of the incident. That is, variation in the nature of violence, particularly whether an incident was intra-racial as compared to interracial, are expected to be a function of the characteristics of the communities in which these crimes occur rather than simply the product of the situational components of the incident. The current study draws upon and extends a number of ecological models commonly cited in criminological research on quantities of crime to develop a theoretical model that explains disparities in the nature or quality of violent criminal incidents across communities. Specifically, social disorganization and the systemic model of community attachment are refined with propositions drawn from macro structural opportunity theory (Blau 1977) in order to gain a better understanding of variations in the likelihood that violence will be interracial as opposed to intra-racial across differing community contexts.

The primary substantive contribution of the current study revolves around the assessment of the influence of incident and contextual level measures on patterns of intra and interracial violence across U.S. communities. While many researchers have attempted to discern why certain communities have more or less crime, attempts to highlight factors that lead to a greater likelihood that violence will be interracial in nature are sparse. This is an important limitation within the extant literature as interracial violence is a particularly important form of violence for a number of reasons. First, it is vital to understand interracial violence because it does not follow the normal pattern of violence. The great majority of interpersonal violence occurs between victims and offenders of the same race (Williams and Flewelling 1988; Krivo and Peterson 2000,

2005; Parker and McCall 1997, 1999, Krivo and Peterson 2000). However, precisely because it is not the dominant form of interpersonal violence, we should expect to uncover a number of factors that distinguish where interracial violence is likely to occur. As such, interracial violence is a theoretically intriguing form of violence. Second, the criminal justice literature suggests that sanctions tend to be patterned by whether an offense was intra or interracial (Johnson 2003, Ulmer and Johnson 2004). Minority offenders who victimize whites are likely to receive rather disproportionate sanctions compared to those who victimize their fellow minorities. Moreover, whites are likely to receive less severe sanctions in general but particularly so when their victims are minorities. Third, interracial violence can have a particularly destructive impact on a community. Violence between whites and blacks is likely to undermine already tenuous race relations and could even lead to the increase of race based hate crimes. As such, its relative infrequency is outweighed by its social implications. Fourth, most societies are going to experience increasing levels of diversity in the coming years. As diversity increases, it becomes increasingly vital to have a complete understanding of the factors that impact the likelihood that violence will be interracial in nature. Finally, research that does address the probability that violence will be interracial has largely neglected to consider contextual and situational level predictors simultaneously. By not considering all relevant predictors simultaneously there is a risk of applying significance to spurious associations. Fortunately, the availability of unique data sources now allow for multilevel analyses of interracial violence.

An extremely popular theoretical framework for understanding how and why contextual level characteristics such as poverty, education, family structure, and unemployment impact levels of violence across communities has been the social disorganization model. The disorganization perspective proposes that certain structural factors such as population instability,

population heterogeneity, and poverty are intimately tied to negative outcomes such as crime and violence. Structurally disorganized communities suffer from anomie or normative confusion and become incapable of instilling mainstream norms, values, and attitudes into residents. Such communities become ineffective at maintaining viable formal and informal social control mechanisms thereby undermining the ability to organize residents for collective action or regulate the behavior of residents, particularly youth (Shaw and McKay 1929, 1942; Kornhauser 1978; Bursik 1988). As such, structurally disorganized communities are characterized by disinvestment, bleak employment prospects, hyper-deprivation, social isolation, and crime.

More recently, the disorganization perspective has been refined through the development of the systemic model of community attachment. Kasarda and Janowitz (1974:329) envisioned the community as a “complex system of friendship and kinship networks and formal and informal associational ties rooted in family life and the ongoing socialization processes.” The systemic model views social organization as “the regulatory capacity of a neighborhood that is embedded in the structure of that community’s affiliational, interactional, and communication ties among the residents” (Bursik 1999:86). Due largely to instability in both the population and social institutions in “disorganized” communities, residents have fewer opportunities to build friendship ties, associational networks, or participate in organizational activities (Kasarda and Janowitz 1974, Sampson 1988, Sampson and Groves 1989). Under such circumstances, formal and informal social control mechanisms are undermined and crime and violence are exacerbated.

In support of both the disorganization and systemic models, numerous classic and modern studies have highlighted a number of structural deficits associated with levels of violence. These include factors such as joblessness / labor market participation (Cantor and Land 1985; Sampson 1987, Wilson 1989), family disruption (Shihadeh and Steffensmeier 1994;

Sampson 1987;), industrial restructuring (Wilson 1987; Kasarda 1993; Shihadeh and Ousey 1996, 1998), race and class based residential segregation (Massey and Denton 1993; Peterson and Krivo 1993, 2005; Shihadeh and Flynn 1996; Shihadeh 2009), inequality (Blau and Blau 1982; Sampson 1986; Parker and McCall 1997, 2005), the proliferation of institutionally unattached youth, and, most importantly, concentrated structural resource disadvantage (Loftin and Hill 1974; Bursik 1988; Land, McCall, and Cohen 1990; Bursik and Grasmick 1993; Sampson and Wilson 1995; Pratt and Cullen 2005). While a preponderance of evidence supports the disorganization and systemic models as applied to levels of violence, there is reason to believe they may also be linked to variations in the nature of violence. Recent research suggests that the effects of structural factors on rates of violence may be attenuated in regions of the U.S. that host groups that cultivate a subculture of violence (Lee, Hayes, and Thomas 2008). If such effects can vary across regions and communities there is reason to expect that patterns of interracial violence will also vary between communities. Supporting this argument, Kubrin (2003) reports that certain structural deficits are associated with different subtypes or categories of homicide. That is, the contextual environment plays an important role in determining patterns in the type of lethal events that play out in a community. Substantive variation in the structural covariates of different forms of homicide provides grounds to expect similar variations when predicting the likelihood that violence will be interracial.

Traditionally, the social disorganization perspective and the systemic model of community attachment have been applied to understanding levels of violence. That is, these intermediate or middle range perspectives primarily focus on explaining why certain communities have more or less crime rather than explaining why specific forms of violence are more likely to occur in certain contextual environments. However, a grand sociological theory

linking these frameworks to variations in interracial violence is Blau's (1977) Macro Structural Opportunity Theory (MSOT). MSOT is a grand theory because it "is applicable to many different levels of analysis and diverse sociological phenomena" (Sampson 1984 p. 618). MSOT highlights the fact that structural conditions impact opportunities for inter group contact, which, in turn, impact the likelihood of inter group violence. Much like interracial marriage or any other form of interracial contact, interracial violence depends heavily on the availability of opportunities for contact between whites and blacks. In racially homogenous communities, interracial violence tends to be rare due to the lack of opportunities for fortuitous interracial contact. Alternatively, regardless of crime levels, communities with a relatively large minority population should experience a greater likelihood that violence will be interracial.

One of the primary measures highlighted by Blau's (1977) MSOT is population heterogeneity, which is a proxy measure of the likelihood that community residents will experience fortuitous interracial associations. In communities with a greater relative prevalence of minorities, residents will necessarily have an increased likelihood of coming into contact with racially diverse others. This increase in interracial contact is a necessary condition for an increase in interracial violence. Blau (1977) specifically addressed this seemingly paradoxical situation and noted that: "Conditions that increase the probability of social contact increase the likelihood of overt interpersonal conflict as well as that of harmonious social associations, since both depend on opportunities for social contact. Strangely, therefore, the very conditions that foster the social integration of various groups and strata into a coherent social structure simultaneously precipitate frequent interpersonal conflicts among members" (p. 113). That is, cohesive communities are likely to experience greater racial integration, which may have many beneficial effects for a community. However, greater racial integration also leads to an increase

in fortuitous interracial associations, which are likely to increase the likelihood that violence, when it does occur, will be interracial.

This paradoxical situation highlighted in MSOT and guided by the notion that interracial associations are necessarily linked to interracial violence is particularly relevant to this study. Specifically, MSOT highlights the social mechanism through which structural measures drawn from the disorganization and systemic paradigms might impact the likelihood that violence will be interracial. The disorganization and systemic perspectives highlight a number of characteristics of contextual environments that impact levels of violence. These same factors however are also likely to influence the prevalence of fortuitous interracial associations. In turn, the characteristics of communities highlighted in these perspectives are likely to influence the likelihood that violence will be interracial, regardless of their influence on levels of violence. Disorganization as measured through concentrated of structural resource disadvantage is highly co-linear with race in American society. In fact, it is rather common for researchers to include an indicator of the minority population within an index of concentrated disadvantage. Therefore, because concentrated disadvantage is severely racially patterned, communities with higher levels of structural disadvantage should experience a reduction in fortuitous contact between blacks and whites in a number of social venues. Such communities will be highly segregated residentially and culturally. Blacks and whites will not attend the same schools, will not work together, will not eat at the same establishments, and are unlikely to come into contact in various day to day activities. As such, interracial violence should be lower in places characterized by higher levels of concentrated disadvantage.

While a small literature base supports a negative association between concentrated resource disadvantage and interracial violence, there have been no inquiries into the impact of

population stability on the likelihood that violence will be interracial. This is an important oversight as a clear connection can be made between population stability, which is the primary factor highlighted by the systemic model of community attachment, and Blau's MSOT. Specifically, a stable population base that is tied to the community through home ownership is likely to have a potentially dramatic impact on interracial contact and thus interracial violence. Communities with a relatively unstable or mobile population that is not tied to the community through mechanisms such as home ownership experience constant turnover in their population base. Such unstable communities commonly attract racially diverse residents who desire low cost temporary housing options. Therefore, unstable communities are likely to offer more opportunities for fortuitous interracial associations between potential victims and offenders. Moreover, residents will have few opportunities and a reduced ability to build friendship ties and associational networks, which is likely to result in a racially diverse, unstable, and un-cohesive population base. Such communities will thus have lower levels of informal social control, particularly in relation to interracial violence, and thus an increased likelihood that violence will be interracial.

Filling the Gaps in the Communities and Crime Literature

Community level studies of crime and violence have increased exponentially during the last three decades resulting in a colossal literature on the influences of contextual features on patterns of violence (Sampson, Morenoff, and Gannon-Rowley 2002). However, there are a number of short comings in this literature that will be addressed within the current study. One such gap concerns our dearth of knowledge on the community and situational level correlates of variations in the quality or nature of violence. With the exception of homicide studies, past research has largely been limited to analyses of aggregate rates of violence using summary based

information from the Uniform Crime Reports (UCR). Recently, the Federal Bureau of Investigation (FBI) has begun to implement the National Incident Based Reporting System (NIBRS), a unique and rich database that provides situational level information on criminal incidents reported to police agencies. By merging this incident level data with measures of characteristics of the contextual environment (i.e. county) it becomes possible to explore the situational and contextual level covariates of between community variations in the nature of violence simultaneously, particularly interracial violence.

A second limitation in the extant literature is that the majority of the ecological level research has focused on homicide. While information on murders within the U.S. is very detailed and accurately reported (Gove, Huges, and Geerken 1985), it is an extremely rare form of violence with very little variation across communities. As such, homicide is not an accurate representation of crime and violence within or across communities. While approximately 16,000 homicides are perpetrated each year, there are approximately 400,000 robberies and 850,000 aggravated assaults annually in the U.S. As such, robberies and aggravated assaults touch the lives of considerably more people, are present in virtually all communities, are likely to illicit a community reaction, and thus represent a considerable social problem. Moreover, few studies have explored the nature of these crimes. While official data on such crimes may be slightly less accurate than for homicide due to underreporting, the availability of the NIBRS data, which has been painstakingly devised to provide detailed and accurate information, allows researchers to explore whether variations in patterns of race specific forms of violence can be predicted through the same conceptual models routinely applied in homicide studies. Moreover, the predictors of levels of violence can be compared to predictors of patterns in the nature of violence, particularly interracial as compared to intra-racial violence. As such, the current study explores the

situational and contextual level predictors of race specific offending patterns for homicide, robbery, and aggravated assault in 2005.

A third limitation within the extant literature is that the vast majority of studies have been dominated by the traditional application of the social disorganization model. It is well established that communities afflicted by structural disorganization experience elevated rates of violence. While informative, emphasizing the effects of social disorganization on rates of violence neglects the notion that these same characteristics of communities may not impact variations in the nature of violence in the same manner. That is, measures of structural disorganization may be related to elevated levels of violence, however, not all forms of violence are likely to be equally impacted by characteristics of disorganized contextual environments. In fact, the likelihood that violence will take on certain race specific forms may actually decrease while other race specific forms of violence are increasing. The current study adds to the extant literature by exploring the effects of a number of contextual factors highlighted by the social disorganization and systemic models on variations in the prevalence of race specific patterns of violence. Specifically, measures highlighted within these middle range perspectives are reinterpreted through Blau's grand MSOT in order to develop a number of empirically testable hypotheses concerning the relative prevalence of intra and interracial violence. These hypotheses will be described in detail in Chapter 2.

A fourth limitation in the communities and crime literature is that researchers have almost exclusively focused on U.S. cities with large populations. The focus on densely populated communities is especially apparent within the disorganization literature, which has undermined our knowledge of the applicability of ecological perspectives to various social contexts. A limited number of analyses do however support the extension of the disorganization

model to the non-metropolitan context (Osgood and Chambers 2000). The current study adds to the extant literature by exploring the impact and analytical flexibility of certain characteristics of contextual environments on the racial patterning of violence across large and small communities.

A final limitation within the literature centers on applying the lesson learned from recent methodological advancements. An inherent assumption in “kinds of place” explanations, such as the disorganization and systemic models, is that the contextual environment impacts crime independent of the “kinds of people” who reside in a community. This assumption however is rarely tested making it difficult to claim that variations in violence are truly the result of contextual characteristics rather than situational or individual level factors. Recently, multilevel studies that merge information on communities and individuals have become more accepted within the extant criminological literature. By allowing researchers to separate contextual and incident level effects multilevel studies represent a substantive improvement over conventional regression modeling techniques. The current analysis adds to this growing body of multilevel analyses by merging information on the contextual environment in which crimes occur with information on the criminal incident itself and the characteristics of victims and offenders.

In the attempt to address these shortcomings in the extant literature, this study empirically tests a number of hypotheses centered on the probability that violent criminal incidents will involve victims and offenders of different race groups. These hypotheses are generally derived from Blau’s (1977) grand sociological theory on macro structural opportunity and inter group contact. However, the specific contextual measures emphasized are drawn from the intermediate social disorganization and systemic community attachment frameworks. That is, MSOT is a grand yet distal framework while the disorganization and systemic perspectives are intermediate yet proximate frameworks from which to interpret variations in the likelihood that violence will

be interracial. In chapter 2, the theoretical framework and prior research are reviewed in depth and a number of specific hypotheses are delineated. Chapter 3 reviews the data sources, specific contextual and situational measures, and analytical methods that will be used to test the hypotheses. In chapters 4 and 5 nonlinear multilevel modeling techniques are described in depth and used to predict between county variations in the probability that violence will take on a number of race specific forms. Finally, in Chapter 6 the findings are discussed, conclusions are drawn, and concrete suggestions for future research are offered.

CHAPTER 2: LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Sociologists working at The University of Chicago during the 1920's were among the first to emphasize the independent effects of community structures on a number of individual and aggregate outcome measures including crime and violence. In an often overlooked piece, Robert Park (1925) recognized that the community serves a role similar to that of the family unit in regards to enforcing the social order. In laying the foundation of the ecological perspective, Park (1925) noted that any changes that disrupt the routines of social life, such as rapid population change, undermine the community's ability to enforce the social order and have a socially disorganizing effect. Park's primary concern was that traditional institutions of social control (i.e. family and church) were losing their capacity to be effective social control mechanisms and were being replaced by agencies of formal social control.

Shaw and McKay (1929, 1942) extended this ecological perspective in observing that certain neighborhoods are responsible for a disproportionate amount of crime in a community and that levels of violence tend to be stable despite population turnover. They surmised that certain structural deficits create a contextual environment that undermines the community's ability to maintain effective social control mechanisms. The collapse of effective social controls, in turn, leads to the greater incidence of social dislocations, particularly crime. Kasarda and Janowitz (1974) extended this framework in developing their systemic model. They proffered that community attachment is largely a product of time dependent kinship and friendship ties, associational networks, and organizational participation. Disorganized communities suffer from attenuated community networks, normative consensus, and trust between community residents. These factors, in turn, undermine local social bonds and social control mechanisms leaving communities vulnerable to social dislocations. Subsequent research guided by the

disorganization and systemic perspectives highlighted a diverse array of structural deficits, and directed attention toward the concentrations of multiple forms of overlapping disadvantage (Wilson 1987 and Land, McCall, and Cohen 1990).

While a substantial literature base supports the relation between social disorganization, community attachment, and levels of violence, there is a significant gap in our knowledge concerning the quality or nature of violence. In particular, few studies have investigated the contextual level correlates of interracial violence. This limitation is largely due to the fact that the disorganization and systemic models are middle range or intermediate level theories not initially devised to explain subtle variations in patterns of violence. This limitation can however be addressed by merging the mechanisms highlighted in these perspectives with Blau's (1977) grand theory on macro structural opportunities for inter group contact. Blau argues that positive and negative intergroup relations depend primarily on opportunities for contact between members from different groups. A number of structural characteristics have a profound impact on opportunities for fortuitous inter group contact. Therefore, contextual environments are likely to have a dramatic impact on interracial violence, which is simply one form of inter group contact. The effects of disorganization or concentrated disadvantage on interracial contact have been examined in a limited number of studies but results have largely supported Blau's propositions (Sampson 1984, 1986; Messner and South 1986, 1992; South and Messner 1986; South and Felson 1990; Baumer et al. 2003; Wadsworth and Kubrin 2004; Warner 2007).

In the remainder of this chapter, I thoroughly review macro structural opportunity theory (MSOT) as well as the social disorganization perspective and the systemic model of community attachment. Specific attention is given to developing the theoretical rationale as to how and why characteristics of contextual environments are likely to impact interracial contact and thus

interracial violence. Specific attention is afforded to developing a rationale of not how structural factors impact rates of interracial violence but rather how community characteristics impact the relative prevalence of interracial as compared to intra-racial violence. I also review the applicable findings within the extant structural level research with particular emphasis on race specific forms of violence. This review leads to the development of a number of empirically testable hypotheses regarding patterns in the relative prevalence of interracial violence across communities, which are summarized in Table 1.

Macro Structural Opportunity Theory and Interracial Violence

Macro or structural level criminological research is that which highlights the role of social structure in determining patterns of violence across communities both large and small. The extant literature on patterns of violence across communities, while vast, has largely been guided by middle range theories such as the social disorganization perspective. Such perspectives, some of which are detailed below, highlight the role of concentrated structural disadvantage, residential instability, and race or class based segregation in influencing patterns of violence. Research guided by these middle range theories has largely focused on the impact of structural factors on between community variations in levels of violence rather than variations in the race specific patterning of violence. That is, most researchers are concerned with why particular places have more or less violent crime rather than why a greater proportion of crimes in certain places occur between actors from different race groups. This limitation is unnecessary and can be addressed by considering how certain middle range perspectives are bound together through Blau's (1977) grand sociological theory on macro structural opportunity.

In his book *Inequality and Heterogeneity* Blau (1977) describes his Macro Structural Opportunity Theory (MSOT), which has endured a number of empirical analyses and has been

described as a “theoretical masterpiece” (Catton 1978 p. 698) and “one of the most important theoretical works ever written in sociology” (Turner 1978 p. 704). MSOT is rooted in the Durkheimien tradition in that there is an underlying assumption that social structure constrains interactions among individuals and groups. Blau posits that certain structural features of communities largely dictate the availability of opportunities for people from different groups (i.e. race groups) to come into contact with one another. Opportunities for fortuitous associations among diverse others, in turn, are a vital predictor of intergroup social interaction. In other words, opportunities for fortuitous interracial contact are a necessary condition if interracial social interaction, one variety of which is interracial violence, is to occur. Blau argues that racial heterogeneity and inequality are integral to the likelihood that blacks and whites will have fortuitous contacts or associations. Therefore, these fundamental properties of social collectives heavily influence the likelihood of virtually all types of interracial social interaction. As such, the structural properties and arrangements of social groups that impact racial spatial propinquity become important determinants of social associations between members from different race groups, only one of which is interracial violence.

Blau’s MSOT is considered a grand sociological theory because it has implications for a broad range of social phenomena across diverse units of analysis. That is, MSOT highlights structural characteristics that impact the likelihood of virtually all interracial relations across communities of all sizes. The same structural factors that impact the likelihood of interracial marriage also impact interracial violence (Blau, Blum, and Schwartz 1982; Blum 1985; Sampson 1986). This theoretical paradox, which Blau recognized, suggests that the same structural arrangements that increase the likelihood of positive interracial relations also increase the likelihood of negative or violent interracial social interactions. This central tenet of MSOT, the

importance of intergroup contact, is applicable across cultures and draws attention to social conditions that impact opportunities for contact irrespective of values, motives, and ideals (Sampson 1984; South and Messner 1986; Wadsworth and Kubrin 2004). In fact, a number of analyses suggest that opportunities for interracial associations are a stronger predictor of interracial violence than individual motivations or values. For example, Wright and Decker (1997) in their analysis of robbery, which they report as being quite likely to be interracial, note that “To be sure, a majority of the black offenders in our sample routinely robbed whites; some even expressed a strong preference for white victims. But none of these offenders indicated that they were motivated to rob whites specifically by racial hatred” (p. 59).

Before describing the specific features of contextual environments highlighted by MSOT it is vital to note the difference between levels and proportions of interracial violence. Proportions are vital here as MSOT does not necessarily speak toward strict variations in levels of interracial associations or social interactions across communities. The theory is primarily concerned with explaining why interracial associations or interactions comprise a relatively greater or smaller proportion of all interactions in certain communities rather than why a given community has a higher or lower absolute number of interracial associations. The primary difference between levels and proportions is that a community may have very few violent incidents, however, macro social arrangements should continue to impact the proportion of those incidents that are interracial irrespective of the relative level of violence.

Blau emphasized two structural features of communities that heavily influence the probability that violence will be interracial, racial heterogeneity and inequality. Heterogeneity refers to the racial diversity of the population of a community, which directly impacts the likelihood that whites will have fortuitous associations with blacks. When minorities comprise a

greater proportion of the population whites and blacks will have an increased likelihood of coming into contact with each other. Therefore, we would expect a greater proportion of violent incidents to be interracial in those communities with higher levels of racial heterogeneity.

However, whites, because they are the majority group, are much more likely to be the victims of interracial violence than are blacks or other minority group members. That is, group size should be inversely related to out-group victimization. Minorities will necessarily have more opportunities to commit violence against whites than whites have opportunities to commit against blacks. Moreover, whites, if they so choose, have greater opportunities to structure their social life in such a way as to largely avoid contact with individuals from different racial groups.

While heterogeneity should be related to an increase in the relative prevalence of interracial as opposed to intra-racial violence, racial inequality should be associated with a decrease in the relative likelihood that violence will be interracial. Specifically, racial inequality should decrease the likelihood that minority and majority group members will have fortuitous social contacts, which, in turn, will result in a reduced probability that violent criminal incidents will be interracial in nature. In contextual environments rife with inequality, whites and blacks will tend to not eat and shop in the same establishments, live in the same neighborhoods, or be employed in equal positions within specific companies. When residents are socially isolated from one another in this fashion, violence may remain a significant social problem yet a relatively small proportion of violent incidents will occur between actors from different race groups. Empirical analyses of racial inequality, however, have highlighted a number of inconsistencies in terms of the effects of different forms of inequality. Messner and Golden (1987) examined eight forms of inequality and found that general socioeconomic inequality performs much stronger than strict income inequality (see also Messner and Golden 1992).

Moreover, inequality in American society is very unique social structural property. Because race and class have become extremely consolidated in American society, measures of absolute deprivation can serve as proxy measures of structural racial inequality. That is, communities with higher levels of resource deprivation, particularly overlapping forms of disadvantage, will tend to have a greater proportion of disadvantaged minorities. In such structurally disadvantaged communities individuals from different class and thus race groups will experience a relative reduction in the probability of fortuitous social interaction. Therefore, resource disadvantage serves as a measure of racial inequality and thus should be associated with a reduced likelihood that violent incidents will occur between actors from different race groups. The negative relation between structural resource disadvantage and the likelihood that violence will be interracial will be further elaborated upon below within the discussion of the social disorganization perspective.

For a short time, Blau's MSOT was a dominant sociological theory and a number of empirical analyses supported the generality of the model. Structural arrangements that influence opportunities for interracial contact, mainly racial heterogeneity and inequality, were found to be strong predictors of interracial social contacts, marriage and, most importantly, violence (Hansmann and Quigley 1982; Sampson 1984, 1986; Blum 1985; South and Messner 1986; Messner and South 1986; South and Felson 1990; Messner and South 1992; Wadsworth and Kubrin 2004). While MSOT, especially in regard to interracial violence, received substantial support from a small number of empirical analyses during the 1980's and early 1990's, such analyses suffered from a number of limitations. These limitations were recognized and discussed but most were never addressed and eventually research on interracial violence waned. Specifically, there was a general failure within the extent literature to reconceptualize how popularized covariates of rates of violence were likely to impact interracial associations and

hence interracial violence. Other limitations that plagued earlier analyses of interracial interactions and the probability of interracial violence include: an almost exclusive focus on victimization surveys such as the National Crime Survey, artificial community aggregations, a small number of observations, limited units of analysis (large cities), limited dependent variables, and an over emphasis on interracial homicide.

Because the vast majority of violence is intra-racial, there have been few attempts to conceptualize how various structural features impact interracial associations and how these interactions, in turn, impact interracial violence. Researchers have instead concentrated their efforts on testing middle range criminological theories and understanding between community variations in levels of violence or aggregate crime rates. These analyses have indicated that race specific patterns of violence differ substantially across communities and that race specific forms of violence have substantially different social predictors (Parker and McCall 1999; Krivo and Peterson 2005). Moreover, theoretical and empirical advancements in the macro structural criminological literature have begun to highlight a diverse set of structural arrangements that impact levels of violence. Such theoretical advancements coupled with developments in the availability of detailed data on criminal incidents and methodological advancements have opened the door for new analyses of interracial violence that will substantively advance our knowledge on its racial patterning. The current study examines the role of those predictors highlighted by the middle range disorganization and systemic community attachment perspective in determining the likelihood that violent crime will be interracial in nature. Below, I provide a detailed description of these perspectives, prior empirical analyses, a rationale for why such predictors should impact interracial violence, and a number of specific hypotheses that will be tested. However, analyses of measures highlighted by these middle range perspectives would be

incomplete if the primary factor highlighted by Blau, racial heterogeneity, was not included in the analyses. As such, a unique measure of racial integration, a proxy for racial heterogeneity, is included in all analyses. The specific hypotheses for the effects of racial heterogeneity on forms of interracial violence are drawn directly from the above review of MSOT and are as follows.

H1: Population heterogeneity will be positively related to interracial violence.

H2: Population heterogeneity will have a stronger positive relation to black offender white victim violence than white offender black victim violence.

Hypotheses 1 speaks toward how community levels of racial heterogeneity or racial integration are likely to impact the probability that violence will be interracial and hypothesis 2 delineates that racial integration will have a stronger impact on black offender interracial violence. There are at least two rationales underlying the expectation that racial heterogeneity will have a stronger impact on black offender as compared to white offender interracial violence. First, blacks tend to be segregated from whites across their social experience such that an increase in residential racial heterogeneity should have a more dramatic impact on the opportunities for black offenders to victimize white residents. Second, an increase in exposure to whites within the residential environment may serve to exacerbate ideas and feelings surrounding racial inequality among some black residents. That is, increased interracial associations may serve to highlight the race based patterns of deprivation and the highly unequal positions of blacks and whites in U.S. society. In such an environment, blacks may feel more strained due to their heightened awareness of race based relative deprivation patterns. As such, black offender interracial violence is likely to be more heavily impacted by residential racial heterogeneity.

Beyond its impacts on interracial violence, there is also the possibility that residential racial heterogeneity or integration may differentially affect black as compared to white intra-racial violence. As mentioned above and described in detail in the section that follows, the social

isolation of blacks from mainstream society and whites in general is quite common in many communities across the U.S. Based on a strict interpretation of hypothesis 1, we may expect that racial integration would have a negative association with the likelihood that violence will be intra-racial, regardless of whether the actors are black or white. This may in fact be a reality when a community is truly and completely racially integrated, however, the current study uses an interesting yet slightly limited measure of racial integration. Specifically, this study uses a P* measure of residential racial integration or heterogeneity (Massey and Denton 1988). This measure is discussed in depth in Chapter 3 but for now it is suffice to note that the measure gauges the likelihood that whites and blacks will come into contact but only in terms of the residential environment. This measure does not however gauge whether whites and blacks will come into contact in various social situations throughout their routine daily lives.

As mentioned above, whites and blacks often do not eat and shop in the same establishments, go the same school, or hold equal employment positions within specific companies. When race groups are socially isolated from one another in this fashion, white and black intra-racial violence may be differentially impacted by residential racial integration / heterogeneity. This form of integration is likely to have the expected strong negative effect on the likelihood that violence will be white intra-racial because it will directly reduce the ability of white residents to limit their social interactions with non-whites. Conversely, this measure of integration should have a null, or potentially a positive association with the likelihood that violence will be black intra-racial. Increased residential racial heterogeneity directly exposes blacks to the unequal ascribed positions of whites and blacks in American society. However, while blacks may experience an increase in contact with whites within the residential environment, their day to day social experiences will continue to be one in which most of their

social interaction are with non-whites. This heightened awareness of their own relative deprivation based on an ascribed status is proffered to increase strain among blacks. This strain coupled with a general limitation in their access to whites may lead to an increase in diffuse forms of aggression evidenced as a relative increase in black intra-racial violence. This argument leads to the following hypothesis.

H3: Population heterogeneity will have differential effects on the likelihood that violence will be black intra-racial as compared to white intra-racial.

The Roots of the Social Disorganization Perspective

While Shaw and McKay (1929, 1942) extended the work of earlier researchers, they are largely credited with the development of the ecological perspective that emphasizes the contextual effects of community structures on crime and violence. Specifically, they are credited with developing the social disorganization perspective by highlighting the disorganizing effects of low economic status, population instability, and cultural / ethnic heterogeneity. While each is important, they placed particular emphasis on the effects of low economic status arguing that the effect of poverty on crime is largely indirect through population turnover and heterogeneity (Bursik 1988). That is, communities experiencing economic deprivation are largely unable to retain their population base and experience significant in-migration of diverse groups. In such structurally disorganized communities, residents have access to few economic resources and are subject to competing cultural and moral value systems. In such contextual environments it becomes difficult for the community to instill mainstream norms, values, and beliefs into residents. As such, community residents, particularly youth, are increasingly likely to come into direct contact with delinquent others and hence delinquent values and behaviors. As mainstream and delinquent value systems compete it becomes increasingly difficult for communities to build

and maintain effective formal (i.e. police and courts) and informal (i.e. Church and school) social control mechanisms. This results in increased social dislocations one of which is violent crime.

Shaw and McKay were influential to the popularity of “kinds of places” versus “kinds of people” approaches to explaining variations in levels of crime across communities (Stark 1987). They observed that certain neighborhoods maintained persistently high rates of crime and other social dislocations despite being almost completely repopulated by successive waves of racially and ethnically diverse immigrants. As new immigrants arrived in urban communities they settled in economically disadvantaged neighborhoods. However, ready access to low skill but decent wage employment prospects afforded numerous opportunities for socioeconomic advancement and geographic relocation. Through such social processes disorganized neighborhoods maintain consistently high crime rates. In certain communities crime becomes endemic largely due to characteristics of the contextual environment in which people find themselves and the social life within the community. The take home message is that structural disorganization results in persistently high rates of crime by undermining the capacity of local institutions to exert effective social controls, particularly informal social controls (Reiss 1986).

While Shaw and McKay (1929, 1942) highlighted multiple factors, subsequent researchers focused almost exclusively on the role of economic disadvantage. While some empirical findings were supportive of the positive relation between economic disadvantage and levels of crime across communities (Schuessler 1962; Quinney 1966; Curtis 1974; Loftin and Hill 1974; Humphries and Wallace 1980; Smith and Parker 1980; Warner and Pierce 1993) others reported effects that were either null, indirect, race specific, or dependent on certain predictor variables or the unit of analysis (Lander 1954; Bordua 1958; Messner 1982; Decker, Shichor, and O’Brien 1982; Messner and Golden 1985; Sampson 1985; Smith and Jarjoura

1988). As a result, the role of poverty as a structural determinate of crime and violence was repeatedly tested and debated for quite some time (Byrne and Sampson 1986).

While much research has focused on the effects of structural disorganization on levels or quantities of violence, few studies have examined the role of disorganized contextual environments on the patterning of fine tuned variations in violence. However, a number of studies do suggest that structural disorganization may impact the nature of violent crime. Parker and Smith's (1979) examination of disaggregated homicide rates across U.S. cities revealed that poverty is positively associated with homicides between actors with a primary relationship but had no effect on murders between those with non-primary relationship. Parker (1989) extended these findings by disaggregating homicides into four subtypes (robbery, other felony, primary non-intimate, and family intimate). He reports that poverty is a consistent predictor of certain subtypes of homicide but had no effect on robbery related murders. In a similar analysis, Williams and Flewelling (1988) report that resource deprivation was related to all subtypes of homicide, however, the magnitude of the effects varied significantly between the various categories of murder. More recently, Kovandzic, Vieratis, and Yeisley (1998) explored the role of poverty in explaining rates of homicide disaggregated by victim and offender relationship across U.S. cities. They report that poverty has a significant impact on homicides between acquaintances but not those between strangers or family members. These results and others provide a preponderance of evidence indicating that structural factors do indeed impact variations in the nature of violence between communities. As such, we should expect that characteristics of the contextual environment are likely to influence other patterns in the nature of violence, specifically community variations in the racial patterning of violence. That is, they provide the foundation of the rationale by which to expect that structural disorganization,

particularly concentrated resource disadvantage, may be an important predictor of the relative prevalence of interracial as compared to intra-racial violence.

Social Disorganization, Concentrated Disadvantage, and Racial Differences in Violence

During the last two decades, research on the ecological covariates of violent crime has turned its attention to a more refined set of contextual factors with concentrated structural disadvantage and residential racial segregation emerging as robust predictors of violence. There were at least two factors that led to the dominance of measures of deprivation and segregation within the structural disorganization literature. First, the publication of Land, McCall, and Cohen's (1990) landmark study resolved many questions surrounding differential empirical findings on contextual effects. Prior studies explored the independent effects of specific structural characteristics in predicting criminological outcomes across diverse units of analysis. Early results, which examined diverse measure of absolute and relative deprivation, were inconsistent and often failed to conform to theoretically driven predictions. Land et al. (1990) noted that many of these paradoxical findings were the result of methodological flaws. Specifically, many of the contextual factors drawn from the disorganization framework were extremely collinear resulting in unstable standard errors and thus unreliable results. Land et al. (1990) demonstrated that data reduction techniques such as principle component analyses could compensate for many of these issues. Upon instituting the techniques recommended by Land and his colleagues a number of consistent and theoretically predicted findings began to emerge within the structural level criminological literature.

The second and arguably more important rationale underlying the emergence of a more refined set of contextual measures concerns the shift in focus toward understanding how and why characteristics of contextual environments impact race specific rates of violent crime. It is well

documented within the extant literature that rates of black victimization and offending greatly surpass comparable rates for the white population. Krivo and Peterson (2000) report that the 1997 black homicide rate was 8.1 times higher than the comparable white rate and Shihadeh and Ousey (1998) report that black homicide rates in central cities are approximately 5.5 times those for whites. In attempting to understand racial disparities in violence, researchers have turned their attention to segregation, the concentration of multiple forms of structural disadvantage, and social isolation. In short, race and class based segregation patterns beget the concentration of multiple forms of resource deprivation and isolate neighborhoods, groups, and individuals from mainstream society and social institutions. These processes, in turn, play a dramatic role in racial patterns of violent crime across communities.

William J. Wilson's (1980, 1987) work has been extremely influential in bringing concentrated resource disadvantage to the forefront of macro criminological research. Traditionally, urban neighborhoods served as transition zones (Park and Burgess 1925) in which successive generations of immigrants settled, secured low skill but decent wage employment, and assimilated into mainstream American culture. Such transitional neighborhoods provided an opportunity structure whereby residents with little formal education could increase their socioeconomic position, assimilate into mainstream institutions and culture, and become spatially and socially mobile. As a result of industrial restructuring in the 1970's, this process largely collapsed as cities transformed from centers of goods processing to centers of information processing (Kasarda 1993). For example, between 1970 and 1980 Boston experienced a loss of 80,000 jobs that required no high school degree. At the same time, the number of jobs held by college graduates increased by 58,000 (Kasarda 1993). This substantial restructuring of the job market created a vast mismatch between available employment

opportunities and the educational background of urban residents. Unfortunately, this created a situation in which many undereducated minorities, blacks in particular, became trapped in communities that offered few opportunities for economic or social advancement.

Wilson (1980, 1987) argues that industrial restructuring coupled with racial residential segregation conspired to concentrate multiple forms of disadvantage among minority populations. Specifically, he argues that the mass exodus of manufacturing firms from central city communities caused many, if not most, of the educated and middle class minority population to relocate. Such communities thus lost integral social buffers that previously invested in the community, provided role models with positive labor market experiences, and disseminated mainstream norms, values, attitudes, and beliefs. That is, the mass out-migration of jobs and mainstream role models resulted in a socially isolated population with a pronounced “lack of contact or of sustained interaction with individuals and institutions that represent mainstream society” (Wilson 1987:60). Such communities were left with an uneducated, persistently poor, truly disadvantaged underclass population besieged by the concentration of multiple forms of structural deprivation. Left with few means by which to instill mainstream norms and culture or maintain effective social control mechanisms, structurally deficient and socially isolated communities fell into a spiral of decay and cultural disorganization. By removing those residents that would have reinforced mainstream culture, residents of the central city became less willing to accept the moral validity of mainstream culture and its inherent value system. These processes led to a dramatic increase in urban black violence and a substantial mismatch between the contextual level correlates of black intra-racial as compared to white intra-racial violence (Harer and Steffensmeier 1992; Krivo and Peterson 2000; Ousey 1999; Parker and McCall 1999;

Krivo and Peterson 1993; Shihadeh and Ousey 1996, 1998; Shihadeh and Steffensmeier 1994; Sampson 1985, 1987).

While accentuating different social processes, Massey and Denton (1988, 1993) agree with Wilson that racial segregation, the concentration of disadvantage, and social isolation played an integral role in exacerbating violence among blacks. That is, blacks were and continue to be exposed to drastically different contextual environments than their white counterparts. As such, the contextual level correlates of black violence slowly diverged from those of white violence until many of the associations became drastically different. However, rather than emphasizing the role of class based segregation in this process (Wilson 1980, 1987), Massey and Denton (1988, 1993) argue that race based residential segregation created through purposeful institutional arrangements and individual actions has socially and geographically isolated disadvantaged blacks. Geographically isolating blacks from whites as well as mainstream institutions and culture led to the creation of a culture of segregation in structurally disadvantaged communities. Such factors conspired to create a contextual environment ripe for the development of an oppositional culture that devalues school, work, and marriage while instilling attitudes and behaviors that create hostility, frustration, and anger, which are antithetical to success in mainstream society.

While the heuristic frameworks advanced by Wilson (1980, 1987) and Massey and Denton (1993) emphasize different social processes, their arguments coalesce in terms of the community level outcomes of structural inequality. In particular they provide frameworks by which to expect and explain why the correlates of white and black violence may differ, sometime drastically. Both arguments proffer that spatially isolating blacks substantially diminishes their chances of social mobility and exposes them to contextual environments mired down by the

concentration of multiple forms of structural disadvantage. In an environment isolated from mainstream society in which a substantial proportion of residents are persistently poor, uneducated, jobless, and are products of broken homes a new set of cultural values may emerge. That is, people are forced to culturally adapt to the contextual environment in which they exist.

In adapting to overlapping structural disadvantages, mainstream culture becomes attenuated or disorganized and an oppositional culture may emerge. This oppositional culture may create a cognitive landscape supporting cultural values, norms, and beliefs antithetical to mainstream society (Sampson and Bean 2006). Within such environments, mainstream methods of attaining status and respect are absent or viewed as unlikely scenarios by which to achieve universal success goals. On the other hand, traditionally deviant practices and actions such as the devaluation of education, promiscuous sex, crime, and violence become accepted means by which to earn status, respect, and honor. In such environments, it becomes increasingly difficult for community institutions to instill mainstream norms, values, and attitudes, which further undermines local social bonds and discourages social participation. As such, the community becomes incapable of maintaining effective formal and informal social control mechanisms (Kornhauser 1978; Warner 1999).

Anderson's (1994; 1999) ethnographic research elucidates the notion of attenuated or disorganized culture. In his terms, an oppositional culture develops a "code of the streets". He argues that the culture or code of the street that develops in structurally disorganized environments has the potential to evolve into an independent causal force. While most residents remain "decent", many perceive few legitimate opportunities for success and thus develop an alternative culture and value system that provides different means by which to attain universal success goals. Rather than valuing education, hard work, and perseverance, many "street

oriented” residents develop a commitment to “street” values or codes that encourage the use of toughness, courage, and violence as means to gain status and respect. As structural dislocations become entrenched, opportunities to view and participate in behaviors that bolster conventional middle class values are attenuated. The community experiences a further attenuation of mainstream culture and a deterioration of formal and informal social control mechanisms and becomes increasingly incapable of regulating the behaviors of residents.

In sum, residential racial segregation has played a major role in the concentration of overlapping forms of structural disadvantage thereby socially isolating minorities, particularly blacks, from mainstream institutions, culture, and behavior. Socially isolated communities experience an attenuation of mainstream values, norms, and effective social control mechanisms thus creating a contextual environment ripe for the development of oppositional cultures. In such environments violence and aggression become legitimate means by which to attain status, respect, and honor. Therefore, concentrated structural disadvantage indirectly increases certain forms of violent crime through cultural disorganization. However, different race groups have not been equally impacted by overlapping structural dislocations, which has played a key role in the differential effects that certain characteristics of contextual environments have on race specific patterns of criminal violence.

Although empirical research of the entire conceptual framework by which segregation and concentrated disadvantage increase violence, especially black violence, is rare, the extant literature is supportive of the general model. Shihadeh and Ousey (1996) report that increases in suburbanization around 1980 increased concentrated disadvantage in cities, which, in turn, increased black crime rates. In their analysis of 100 cities in 1970 and 1990 Shihadeh and Ousey (1998) report that the decline in low skill jobs in urban areas significantly increased both black

and white homicide rates. As expected, the loss of low skill jobs increased homicide indirectly by increasing concentrated disadvantage, which, in turn, exacerbated violence. Shihadeh and Ousey (1998) also report that blacks experienced approximately 2.5 times more unemployment than whites and 80% of cities experienced black poverty rates higher than the highest white poverty rate. This is especially important when considered alongside Peterson and Krivo's (1993) findings that access to professional, managerial, and supervisory occupations is quite effective at curbing black violence.

As for segregation, a number of studies provide evidence of a link between patterns of racial residential segregation and violent crime. Sampson (1985) reports that segregation increases white but not black homicide arrest rates, however, these results have been disputed. In examining race specific rates of violence across large central cities around 1980 Peterson and Krivo (1993) report that residential segregation has a strong effect on black homicide victimization. However, this effect is limited to killings between acquaintances and strangers, which may explain why Sampson's (1985) earlier analysis did not find significant results for black homicide. That is, Sampson earlier analysis failed to consider the impact of segregation on patterns in the nature of violence across communities. Later studies, following the lead of Massey and Denton (1988), examined the distinct components of segregation. Initial analyses focusing on the index of dissimilarity (D), which gauges the distribution of race groups across city units, support the positive effect of segregation on violence. Shihadeh and Flynn (1996) in an analysis of black homicide and robbery rates around 1990 shifted the focus to interracial exposure (P^*) or the likelihood of potential contact between minority and majority group members within census tracts. They report that the effect of the evenness (D) dimension of segregation on violence is mediated by exposure (P^*). Substantively, this suggests that when

blacks are heavily concentrated in certain neighborhoods black homicide and robbery rates are exaggerated. They also report that the effect of interracial exposure is partially mediated by economic, cultural, and political disadvantage. In other words, racial segregation leads to concentrated disadvantage, which, in turn, increases violence. Other interesting findings reported by Shihadeh and Flynn (1996) are that no city has a white poverty rate higher than the mean black poverty rate and that about one-third of black households are headed by single females with children. These findings underscore the endemic concentrated disadvantage in predominately black as compared to predominately white neighborhoods. In a similar analysis, Shihadeh and Maume (1997) report that the centralization dimension of segregation is related to increased urban black homicide rates but that the effect is largely indirect through job access, unemployment, poverty, education, and home ownership.

In a recent study of 270 neighborhoods in a single city, Shihadeh (2009) attempts to discern the separate effects of class and race based segregation on violence. While prior research obscured the differentiation between Wilson's (1980, 1987) emphasis on class based segregation and Massey and Denton's (1993) emphasis on race based segregation, Shihadeh (2009) pits the two against one another. In support of Massey and Denton (1993), he reports that the social isolation of blacks from whites has a strong positive effect on rates of violent (murder, attempted murder, robbery, and rape) but not property crime. Conversely, the social isolation of the poor from the non-poor (class based segregation) was reported to have no direct effect on violent or property crimes.

Overall, the empirical evidence clearly supports the link between racial segregation, concentrated disadvantage, social isolation, and aggregate rates of violence. Moreover, the extent literature indicates that minorities bear a disproportionate brunt of structural disadvantages

and its inherent effects on violence. While some argue that the crime producing effects of structural disadvantage are similar for both whites and blacks (Sampson and Wilson 1995; Peterson and Krivo 2005), it is widely acknowledged that these racial groups largely live in distinct contextual environments. Because neighborhoods dominated by whites tend not to suffer from the same levels of concentrated disadvantage and social isolation as minority communities they are much less likely to develop cultural adaptations, such as street codes, that exacerbate violence (Matsueda, Drakulich, and Kubrin 2004; Peterson and Krivo 2005). While the conceptual model and empirical studies represent substantial additions to our knowledge on the causes of crime, Peterson and Krivo (2005) highlight a number of areas in which the race / crime link as well as the effects of concentrated disadvantage must be broadened. These include: looking beyond homicide to other forms of violence, moving beyond analyses of urban areas, and utilizing multilevel modeling techniques to ensure that structural effects are not confounded by unmeasured individual level effects (contextual fallacies).

Beyond race specific contextual level analyses, few studies examine the role of concentrated disadvantage and patterns of racial segregation on between community variations in the nature of violent incidents. However, a recent study by Baumer, Horney, Felson, and Lauritsen (2003) explores “whether any observed differences in the nature of violence experienced by residents of disadvantaged neighborhoods are a function of neighborhood conditions as Anderson argues, or whether they are merely a product of the characteristics of victims and offenders or situational factors that are more prevalent in violence that occurs in disadvantaged neighborhoods” (p. 40). Anderson argues that street codes serve as an informal set of rules or codes that govern behavior by defining appropriate actions and reactions for a variety of situations. Within contextual environments that offer few legitimate means to attain

largely universal success goals, such codes become vital to gaining and maintaining status and respect. As such, victims of aggravated assault in socially and culturally disorganized communities are more likely to resist their attackers and sustain injury as failing to do so may cost the victim status and respect within the community. Conversely, victims of robbery in these same communities, especially those perpetrated with guns, are aware of their immediate danger and certain situational expectations. In such communities victims of robbery are thus more likely to refrain from resisting and hence provoking their attacker (Wright and Decker 1997). By not resisting, victims exhibit a certain level of respect toward offenders and are thus less likely to be severely injured.

In their analysis of 3,327 assaults and 468 robberies in the 1990 area-identified NCVS, Baumer et al. (2003) test Anderson's theoretical propositions. Bi-variate correlations suggest that concentrated disadvantage is related to the proliferation of assaults involving guns as well as increased victim resistance and injury. For robbery, bivariate correlations suggest that concentrated disadvantage is positively related to gun crimes but negatively related to victim resistance and injury. These preliminary results support Anderson's ethnographic description of the nature of violence in disorganized communities. However, the authors extend their analyses by controlling for a number of victim, offender, and incident level characteristics. After controlling for such multilevel processes, the role of neighborhood disadvantage in predicting patterns in the nature of violence disappears or is severely attenuated. Overall, the results substantiate Anderson's propositions on variations in the nature of violence, however, they also "indicate that the neighborhood variation in violence that Anderson observed reflects the effects of individuals' race and social class as well as neighborhood socioeconomic conditions" (Baumer et al. 2003 p. 63). In a later analysis examining gun violence across 29 neighborhoods

in a single city, Warner (2007) reports that neighborhood disadvantage has no effect on the use of a weapon in robberies. However, she reports that community levels of faith in the police are negatively associated with robberies with guns.

Overall, the extant literature offers a great deal of support for the disorganization model with a plethora of studies reporting a significant and robust relation between structural resource deprivation, racial segregation, social isolation and levels of violence. In fact, measures of concentrated disadvantage are among the most dominant predictors of rates of crime and their inclusion in structural level criminological analyses have become a virtual necessity. While we know a great deal about the relation between disorganization and levels of violence, very few researchers have explored the role of structural disorganization in the patterning of subtypes of violence or variation in the nature of violence. While Baumer et al. (2003), Warner (2007), and a few others have begun to explore such links, much more research specifically exploring the link between disorganization and interracial violence is warranted. This is an especially unfortunate gap in the extant literature and one the current study attempts to address.

Within the limited research on variations in interracial violence across communities, there is little consensus on explanations. Some have chosen to focus on structural characteristics that promote interracial contact and others on economic deprivation and minority threat. From an economic perspective, deprivation among blacks and competition for jobs and political power may fuel racial antagonism, which, in turn, engenders interracial violence. This model has garnered some empirical support but aggregate data fail to address the proposed underlying cause as being racial antagonism or hostility (Balkwell, 1990; Jacobs and Wood, 1999; Parker and McCall, 1999). Another approach to interracial violence, which is advocated here, has been to apply Blau's (1977) macro structural opportunity theory (MSOT), which focuses on

opportunities for intergroup contact as a central factor. As mentioned above, according to Blau, interracial violence, like all forms of interracial association, is a byproduct of intergroup contact. MSOT therefore proposes that racial inequality, such as the concentration of disadvantage among blacks, will reduce opportunities for interracial contact, which, in turn, should minimize the probability of interracial associations. As a result, concentrated disadvantage should be inversely related to interracial violence.

Structural disorganization, particularly concentrated disadvantage has enormous repercussion on interracial associations and is thus intimately tied to MSOT. Because class and race have become extremely consolidated in the U.S., measures of concentrated resource deprivation also measure important components of racial inequality. Specifically, the concentration of overlapping forms of disadvantage leads to the social isolation of certain neighborhoods and racial groups within a community. Such neighborhoods and race groups experience a reduction in mainstream culture as well as the social ties and bonds with the larger community. In other words, they become socially isolated. Because race and class are so intertwined, social isolation based on class distinctions has become empirically indistinguishable from racial social isolation. As such, structural disadvantage creates a contextual environment in which class and race based distinctions are prominent and opportunities for fortuitous associations among individuals from different race groups are limited. Because it reduces opportunities for interracial contact, structural disadvantage should be inversely related to the probability that violence will be interracial. Moreover, structural disadvantage should have effects on interracial violence above and beyond the effects of population heterogeneity or racial integration, which was highly touted by Blau (1977) and confirmed in later empirical analyses of MSOT. In general, communities with a larger minority population and thus increased population

heterogeneity or racial integration would be expected to have an increased probability that violence will be interracial. However, because concentrated structural disadvantage results in class and race based social segregation beyond the residential environment, communities with high levels of disadvantage should have a reduced probability that violence will be interracial. That is, structural disadvantage plays a major role in the separation of race groups in a variety of social spheres and thus should have a negative association with the likelihood that violence will be interracial.

A small number of studies offer strong support for an inverse relation between racial inequality / resource deprivation and the likelihood that violence will be interracial as well as interracial rates of crime. In an analysis of victimization surveys across 25 metropolitan areas South and Messner (1986) report that group size is positively related while residential segregation is negatively related to interracial crime. In a similar work, Messner and South (1986) again report an inverse relation between racial segregation and interracial robbery. Moreover the proportion of the population that is black has a positive effect on black offender / white victim violence but a negative effect on white offender / black victim violence. They also report that a simple measure of the proportion of the population in poverty has no association with interracial violence. In a more recent analysis, Wadsworth and Kubrin (2004) report substantively similar findings with concentrated economic disadvantage but not racial inequality emerging as a robust predictor of interracial homicide across large cities.

While informative, research that ties social disorganization to variations in the nature of violence, particularly interracial violence, suffers from a number of limitations. Prior analyses have been limited to a small number of large communities, artificial community aggregations, victimization data, a small number of observations, and an over emphasis on interracial homicide

(Sampson 1984, 1986; Messner and South 1986, 1992; South and Messner 1986; South and Felson 1990; Parker and McCall 1997, 2005; Baumer et al. 2003; Wadsworth and Kubrin 2004; Warner 2007). The current study advances the literature on interracial violence in a number of areas. Analyses are not limited to a single city or urban areas, official crime data that provide information on a large number of violent incidents are analyzed, a measure of racial segregation or rather residential racial integration that is empirically distinct from a measure of concentrated structural disadvantage is considered, a number of victim, offender, and situational specific factors are controlled for, and advanced nonlinear multilevel modeling techniques are utilized. This research design coupled with the above review of the literature, especially that which ties the social disorganization perspective to MSOT, leads to the following hypotheses as to the relation of structural disadvantage and interracial violence.

H4: Concentrated structural disadvantage will be negatively associated with the probability that violence will be interracial.

H5: Concentrated structural disadvantage will have similar effects on interracial violence perpetrated by whites and blacks.

Hypotheses 4 and 5 predict that concentrated structural disadvantage will have a negative association with between community variations in the likelihood that violence will be interracial regardless of the race of the victim and offender. Once again however the current study goes beyond predictions tied to interracial violence in taking a closer examination of the relation between contextual factors and between community variations in the likelihood that violence will be white or black intra-racial. Specifically, there is reason to expect that the strength of the effect of concentrated structural disadvantage will be exacerbated in analyses of black on black violence. As noted above, the extant literature, especially research by Shihadeh and his colleagues, documents that whites and blacks are differentially exposed to overlapping structural

deprivations. Specifically, levels of black deprivation are significantly greater than levels of white deprivation. As such, there is reason to expect that black intra-racial violence would be disproportionately impacted by levels of black concentrated resource deprivation. White intra-racial violence should exhibit a positive association with levels of white structural disadvantage, however, levels of white disadvantage are well below those for blacks and thus the association should be attenuated in comparison to that for blacks. This leads to the following prediction concerning concentrated resource deprivation or social disorganization and variation between communities in the likelihood that violence will be black as compared to white intra-racial.

H6: Concentrated structural disadvantage will have a stronger positive association to the probability that violence will be black intra-racial than white intra racial.

Systemic Disorganization and Violence

While there have been many empirical explorations of the direct link between structural resource disadvantage and variation between communities in violent crime, Shaw and McKay (1929, 1942) originally explicated a model that highlighted an indirect effect of disadvantage on crime. They proffered that economic disadvantage increases population turnover and heterogeneity, which, in turn, exacerbate crime (Bursik 1988). As neighborhoods become increasingly socially disorganized (unstable, heterogeneous, and economically disadvantaged), it becomes increasingly difficult for residents to build and maintain stable social networks and to agree on common values, norms, and beliefs. Moreover, residents are unable to come together to solve collective problems, such as the closing of a local fire station (Kornhauser 1978; Thomas and Znaniecki 1920). Berry and Kasarda (1977), Kornhauser (1978), and Bursik (1988) argue that such factors are the result of residents not being attached to or involved in their community, the failure to develop community social ties and networks that foster informal social control, and the inability of heterogeneous groups to agree on important community goals and issues.

In emphasizing intervening mechanisms by which concentrated structural disadvantage indirectly exacerbates crime, the disorganization model coalesces with the systemic model of community attachment developed by Kasarda and Janowitz (1974). Kasarda and Janowitz's (1974) systemic model extends the social disorganization perspective in emphasizing the role of network and associational ties in binding people to place. The theoretical model they developed envisions the community as "a complex system of kinship and friendship networks and formal and informal associational ties rooted in family life and the on-going socialization process" (Kasarda and Janowitz 1974:329). When residents forge strong friendship ties, build extensive social networks, and participate in formal and informal neighborhood associations, individuals as well as the neighborhood as a whole should reap certain social benefits (i.e. community satisfaction, socioeconomic prosperity, and reduced crime).

Because the assimilation of new residents tends to be a temporal process, Kasarda and Janowitz (1974) accentuated the role of individual length of residence in building extensive neighborhood ties and bonds. It takes time for newcomers to build community networks and friendship ties, therefore, length of residence should be a dominant predictor of an individual's neighborhood attachment. In their analysis of 2,199 adults in Great Britain, Kasarda and Janowitz (1974) report that length of residence is a strong predictor of the number of neighborhood friends, the strength of local social bonds, a sense of belonging to the community, interest in the community, and feelings of regret if they had to leave. In other words, the longer an individual lives in a given community the more enmeshed they become in the community. As they build and maintain friendships and social networks within the community they grow ever more attached to the community, which may bring with it an inherent feeling of belonging to the community as well as the desire to see the community prosper.

An important theoretical connection between the social disorganization and systemic models concerns the link between economic hardship and residential instability, particularly structural level residential stability. These structural factors work synergistically to undermine the creation and maintenance of neighborhood friendship ties and networks, as well as associational and organizational participation. When community attachment is undermined it becomes increasingly difficult to instill mainstream norms, values, and beliefs into residents. In such an anomic state it becomes increasingly difficult for a community to maintain effective formal and informal social control mechanisms. As such, social dislocations such as crime and violence are likely to increase.

While few empirical analyses have thoroughly explored the underlying theoretical connections between the systemic and disorganization models, there is some support for such a connection. In a multilevel analysis of 10,900 individuals across 238 neighborhoods in Great Britain, Sampson (1988) found individual length of residence to be a strong predictor of local friendship ties, collective attachment, and social participation. More important to the current study, population stability, the contextual level analogue of length of residence, was found to be a strong predictor of variation in social ties, attachment, and participation between communities as well as individual level local social bonds. While this finding is important in that it highlights the contextual level role of population stability it also supports the argument that structural properties of neighborhoods have effects above and beyond the compositional effects of community residents.

In a later work, Sampson and Groves (1989) provide resounding support for the link between the systemic model of community attachment and the social disorganization perspective as applied to crime. Their analyses suggest that community residential stability increases local

friendship networks while economic disadvantage increases the prevalence of unsupervised peer groups and decreases organizational participation. In their analyses predicting property and violent crime victimization and offending rates the addition of measures of local friendship ties, unsupervised peer groups, and organizational participation eliminate the direct effects of structural measures of socioeconomic status, residential stability, and ethnic heterogeneity while the effect of family disruption is significantly reduced. These results provide substantial evidence that structural dislocations, particularly residential instability, indirectly increase crime and violence through intervening mechanisms such as local social bonds and informal social controls. The take home message is that structural disorganization, particularly population instability, creates a contextual environment that attenuates local friendship ties, social bonds, and social participation, which, in turn, lead to exacerbated levels of violence.

Due in large part to the pioneering work of Kasarda and Janowitz (1974) and Sampson and his colleagues, population instability is now regarded as one of the cardinal predictors of variation in levels of violence across communities. Unfortunately, a limited number of structural level criminological analyses have considered population turnover, which is one easily obtainable measure of residential (in)stability. These works do however suggest that population stability impacts the subtle variations in the nature or patterns of violence across communities. Miles-Doan's (1998) analysis of violence disaggregated by victim – offender relationship status suggests that residential mobility is a stronger predictor of violence between family, friends, and acquaintances than violence between intimate partners. Kubrin (2003) reports that residential mobility has a significant and positive effect on the total homicide rate, however, after identifying four unique subtypes of murder she reports that residential mobility only exhibits a significant and positive effect on felony homicides not general altercation murder or various

forms of domestic homicide. Such findings suggest that population instability increases the availability of economically advantageous targets and thus felony homicides, which conflicts with Sampson's earlier findings. Specifically, if residential mobility undermines community networks and social ties we would expect an increase in general altercation and argument based homicides. Kubrin's study, however, is limited in that she failed to consider non-lethal violence, relied on a small sample of crimes that was limited to homicide (2,161), examined only a single city (St. Louis), and failed to control for situational level factors. The current study addresses these shortcomings in a number of ways, such as examining crimes other than homicide (aggravated assault and robbery), considering tens of thousands of criminal incidents across numerous counties and states, incorporating contextual and situational level predictors using advanced nonlinear multilevel modeling techniques, and by focusing on the race specific patterning of violence across communities.

Another vital contribution of this study lies in the application of the insights drawn from the systemic model of community attachment to variations in the likelihood that violence will be interracial. This is a substantive addition to the literature as it tests the analytical flexibility of population stability, which is a strong and robust predictor of low levels of violence. Prior research provides little guidance in terms of connecting residential stability and race specific patterns of violence. However, the insights into the role of residential stability developed within the systemic model can be merged with expectations drawn from macro structural opportunity theory (MSOT) in order to develop empirically testable hypotheses concerning interracial violence. Again, Blau's (1977) MSOT posits that structural features impact the likelihood of interracial violence by impacting opportunities for fortuitous contact between racially diverse actors. In this case we are referring to the interracial mixture of victims and offenders of violent

crimes. Communities with relatively unstable or mobile populations will experience constant turnover in their population base. As such, residents are likely to come into contact with others with a diverse array of racial and ethnic backgrounds. Residentially unstable communities commonly attract racially diverse residents who desire low cost temporary housing options. Therefore, unstable communities are likely to offer more opportunities for fortuitous interracial associations between potential victims and offenders. Moreover, residents will have few opportunities and a reduced ability to build friendship ties and associational networks, which is likely to result in a racially diverse, unstable, and un-cohesive population base. Such communities will thus have lower levels of informal social control, particularly in relation to interracial violence, and thus an increased likelihood that violence will be interracial. This argument leads to the following testable hypotheses.

H7: Residential stability will have a negative effect on the probability that violence will be interracial.

H8: Residential stability will have similar effects on interracial violence perpetrated by whites and blacks.

Beyond interracial violence, this study also seeks to explore the impact of residential stability on between community variations in the likelihood that violence will be black and white intra-racial. Hypotheses 7 and 8 predict that community levels of residential stability will reduce the likelihood that violence will be interracial regardless of the race of the victim and offender. These hypotheses would seem to suggest that residential stability would thus have a positive effect on the likelihood that violence will be black or white intra-racial. However, as has been argued throughout this review of the literature, whites and blacks are not equally exposed to structural deficiencies and, more importantly, have vastly unequal rates of violence across communities. Specifically, blacks tend to live in substantially more structurally disorganized

contextual environments and black rates of violence, almost without exception, are substantially higher than white rates of violence. Such realities suggest that variation in levels of residential stability, particularly as measured through population turnover and home ownership, may have differential effects on white as compared to black intra-racial violence.

Residential stability is likely to increase the likelihood that violence will be white intra-racial because it increases the likelihood that whites will come into contact primarily with other whites as they go about their routine activities within their community. Within American society both purposeful and unintentional social processes have led to high levels of racial segregation. In communities in which residents do not move very often and in which home ownership rates are high, whites become increasingly unlikely to interact with non-whites. As such, the likelihood that violence will occur between whites should be exacerbated primarily because opportunities for whites to come into contact with non-whites are further reduced. Conversely, residential stability may have no or even a negative effect on the likelihood that reported criminal violence will involve both a black victim and offender. As noted above, particularly in the research by Shihadeh and his colleagues, blacks and black neighborhoods bear a disproportionate brunt of the structural disadvantage evident in a community. On the one hand, black on black violence has reached and maintained almost epidemic levels across the U.S. As a result of the previously discussed transformation of the employment opportunities in cities from goods processing to information processing many undereducated minorities, blacks in particular, have become trapped in communities that offer few opportunities for economic or social advancement (Wilson 1980, 1987; Kasarda 1993). Further, the mass exodus of manufacturing firms from central city communities caused many, if not most, of the educated middle class minority population to relocate. Such communities thus lost integral social buffers

that previously invested in the community, provided role models with positive labor market experiences, and disseminated mainstream norms, values, attitudes, and beliefs (Wilson 1980, 1987). As a result, many communities with substantial black populations suffer from high levels of residential instability, which has undermined social interactions, the creation and maintenance of social networks, and social control mechanisms. Such social processes led to dramatic increases in reported and unreported black on black violence throughout the U.S. Because black intra-racial violence has become so prominent, high levels of homeownership and population stability may actually have a negative impact on the likelihood that violence will involve a black victim and offender. Residential stability should increase social networks, informal social controls, and the ability to transfer mainstream values, norms, and behaviors. This increase in community social control and networking should then decrease the relative prevalence of black on black violence. In the least, residential stability may have no effect on black intra-racial violence, however, the effect should not be positive as is the expectation for white intra-racial violence. Overall, this discussion of the differential impact of residential stability on the relative prevalence of black and white intra-racial violence leads to the following testable hypothesis.

H9: Residential stability will have differential effects on the likelihood that violence will be black intra-racial as opposed to white intra-racial.

Summary

While a considerable literature base supports the link between certain characteristics of contextual environments and between community variations in levels of violence, there is a significant gap in the extant literature concerning structural factors and variations in the nature or quality of violent crime. This is largely due to the fact that the bulk of macro structural criminological analyses emphasize levels of violence rather than the subtle variations in patterns of violence, particularly race specific offending patterns. Further, the bulk of structural level

criminological analyses fail to simultaneously consider the effects of factors at varying levels of analysis. The impact of this is that the findings of many macro level studies may potentially suffer from contextual fallacies. That is, it is unknown if what have been deemed robust predictors of violence maintain their effects upon controlling for characteristics of incidents, offenders, and victims that are specific to certain places. The current study addresses these gaps in the literature by using nonlinear multilevel modeling techniques to explore the contextual and situational level correlates of race specific patterns of violence.

The current study draws on measures highlighted by macro structural opportunity theory, social disorganization, and the systemic model of community attachment to predict variations in the likelihood that violence will be interracial as well as the likelihood that violence will take a number of race specific forms. While research has established links between these structural perspectives and levels of violence, considerably less attention has been dedicated toward understanding how indicators drawn from these perspectives influence the nature of violence. This is unfortunate as these intermediate or middle range disorganization and systemic perspectives can be merged with the theoretical propositions of Blau's grand MSOT in order to develop empirically testable hypotheses concerning the probability that violence will be intra or interracial. Specifically, the measures highlighted by the disorganization and systemic perspectives are likely to impact the likelihood of fortuitous interracial contact, which, in turn, effect the likelihood that violence will be interracial as well the relative prevalence of specific racial patterns of violence. The above review delineates exactly how structural disorganization, population stability, and residential racial heterogeneity, are likely to impact the racial patterning of violence and Table 1 summarizes the primary hypotheses to be tested in Chapters 4 and 5.

Table 1: Summary of Hypotheses

H1: Population heterogeneity will have a positive effect on the probability that violence will be interracial.

H2: Population heterogeneity will have a stronger positive relation to black offender white victim violence than white offender black victim violence.

H3: Population heterogeneity will have differential effects on the likelihood that violence will be black intra-racial as compared to white intra-racial

H4: Concentrated Structural disadvantage will have a negative effect on the probability that violence will be interracial.

H5: Concentrated structural disadvantage will have similar effects on interracial violence perpetrated by whites and blacks.

H6: Concentrated structural disadvantage will have a stronger positive association to the probability that violence will be black intra-racial than white intra racial.

H7: Residential stability will have a negative effect on the probability that violence will be interracial.

H8: Residential stability will have similar effects on interracial violence perpetrated by whites and blacks.

H9: Residential stability will have differential effects on the likelihood that violence will be black intra-racial as opposed to white intra-racial.

CHAPTER 3: DATA, MEASURES, DESCRIPTIVE ANALYSIS, AND METHODS

Units of Analysis and Data Sources

The current study is multilevel in nature because the analyses include predictor measures situated at two distinct levels of analysis. The first level units of analysis are violent criminal incidents reported in the National Incident Based Reporting System (NIBRS) in 2005.

Approximately 136,000 violent crimes, which include homicides, aggravated assaults, and robberies, are documented in the 2005 NIBRS data. However, on par with all officially reported crime data, not all criminal incidents have complete information available for all measures. This missing information led to a reduction in the sample size for various analyses. NIBRS, which is discussed below, is an emerging resource that provides extensive data on crimes that come to the attention of the police. While intensive efforts are underway in order to bring all police agencies into the NIBRS program, a substantial number of law enforcement agencies did not report their crimes to the NIBRS system in 2005. The current analysis is thus limited to those criminal incidents that occurred within the 21 U.S. states that have fairly complete reporting coverage. The 21 states included in the analyses were chosen because at least 67% of their population was covered by the police agencies that reported crimes to the NIBRS system in 2005. Each of the states included in the analysis are listed in Table 2 along with the percentage of their respective population covered by agencies that reported to the NIBRS in 2005. Of the 21 states included in this analysis, 20 had greater than or equal to 70% population coverage, 19 had greater than 75%, 16 had greater than 85%, and 12 had greater than 98% population coverage¹.

The second or contextual level units of analysis in this study are the U.S. counties and county equivalents in which the violent criminal incidents are nested. There are 955 counties

¹ A number of population coverage parameters were experimented with and all results are robust to various population cutoff percentages. Further, supplementary analyses were performed after removing agencies that supplied an excessively low or high number of incidents. All results were robust to this imposed limitation.

within the 21 states in the full sample, however, a number of counties are lost in various analyses due to missing data on one or more contextual measures. Contextual level data were drawn from a variety of sources. Social and economic information for the contextual units of analysis (counties) were drawn from Summary Tape File 3 of the 2000 U.S. Census, the 2005 population estimates constructed by the U.S. Census Bureau, the Uniform Crime Reports (UCR), and the USA Counties data file published by the U.S. Census Bureau.

Table 2: Population Coverage for 21 States included in Analysis

Delaware	100%	North Dakota	98%	Utah	79%
Idaho	100%	Vermont	98%	Arkansas	78%
Iowa	100%	South Dakota	92%	Massachusetts	76%
Michigan	100%	Kansas	90%	Ohio	70%
Montana	100%	Colorado	85%	Connecticut	67%
Rhode Island	100%	New Hampshire	85%		
South Carolina	100%				
Tennessee	100%				
Virginia	100%				
West Virginia	100%				

Data describing characteristics of the offense, victim, and offender of a violent criminal incident were drawn from the NIBRS. The NIBRS data is part of the UCR program administered by the FBI but represents a significant advancement over the summary level information available from the traditional UCR program. The UCR data traditionally provides

researchers only the number of crimes reported to a given police agency, which can be aggregated and divided by a population estimate to create a crime rate. For a limited number of crimes, primarily homicide, it has been possible to obtain crime counts aggregated by age and race. In the late 1970's the law enforcement community called for a thorough evaluation of the UCR program with the objective of recommending an expanded and enhanced program to meet law enforcement needs into the 21st century. This evaluation led to the recommendation that the federal government should invest in a crime reporting system that provides a great deal more information on numerous types of criminal incidents that occurred in each community. Moreover, it was recommended that strict guidelines be put into place so as to be sure that each police agency reported their crimes in a uniform fashion thus allowing for comparisons between communities. For example, regardless of the actual charge, each agency should delineate an assault as simple or aggravated based on the same nationally recognized standards. The NIBRS was implemented to meet these and other guidelines and this new system provides comprehensive incident level crime data that can be used for training, strategic crime analysis, tactical decision making, and multilevel analyses. The incident based data available in NIBRS is a substantive upgrade to the current summary based UCR system and is intended to eventually replace both the UCR and the Supplementary Homicide Reporting (SHR) programs.

Information on 46 criminal offenses across 22 crime categories is collected and included in the publicly available NIBRS files. NIBRS is a multilevel relational data file that provides incident level information broken down into six segments or units of analysis (administrative, offense, property, victim, offender, and arrestee). Dispersed among these six segments are a total of 53 data elements or measures that can be examined. While technically complicated, it is possible to merge information from each level of analysis embedded within each criminal

incident in order to form a data file that has the criminal incident as the unit of analysis. As such, the NIBRS data is the most extensive, up to date, technically sophisticated resource on reported crime in the U.S and represents a largely untapped resource. Specifically, the NIBRS data allow researchers to merge contextual (i.e. community) and incident level factors so as to perform detailed analyses of the nature or quality of a wide range of criminal offenses. While such data have been available for lethal events through the SHR program, NIBRS allows researchers to investigate the nature of numerous violent and non-violent crimes that have important direct impacts on the well being and safety of individuals and communities.

Dependent Variables: Intra vs. Inter Race Violence

The following analyses focus on the relative prevalence of race specific patterns of violence. These outcome measures are not crime rates but rather were created from the incident level NIBRS data. The outcome measures are essentially a series of binary measures and thus nonlinear multilevel models are used to explore the correlates of violent criminal offenses that occur between actors from the same and those from different race groups. Because dependent variables were created from incident level crime data, each dependent variable refers to variation in characteristics of criminal incidents rather than the more common analyses of aggregate rates. The goal is not to predict which contextual units (counties) have more or less crime per capita but rather to grasp an understanding of contextual and situational level predictors of between county variations in the quality of violence. Such analyses move beyond the focus on crime quantities and instead direct attention to variations in the likelihood of different types and forms of violence that occur in a community. The first dependent variable measures whether a criminal incident involved a victim and offender of the same or different race. The vast majority of incidents reported in the 2005 NIBRS involved only white and black actors therefore the

measures of intra and interracial violent crime include only these race groups. All homicides, robberies, and aggravated assaults that involved a white offender and black victim or a black offender and white victim were coded one (1) in this measure. All criminal events in which both the offender and victim were from the same race group were coded zero (0). The analysis of intra as compared to interracial violence appears in Chapter 4 and provides a direct empirical examination of the predictions laid out in hypotheses 1, 4, and 7.

Beyond the intra and interracial aggregate measures for all violent crimes, there is ample reason to expect that different configurations of the racial makeup of victims and offenders may exhibit variations in both individual and contextual level correlates. As such, the analyses in Chapter 5 explore variation in the correlates of the probability that a violent criminal event will involve a black offender and black victim (black intra-racial), a white offender and white victim (white intra-racial), a black offender and white victim (interracial), and a white offender and black victim (interracial). To create each of these outcome measures the specific form of violence of interest is coded one while all other events are coded zero. Such analyses highlight a number of differences between these four categories of violence and serve to supplement the analyses that aggregate the intra and interracial events into only two categories. These analyses allow for direct empirical tests of hypotheses 2, 3, 5, 6, 8, and 9.

Independent Variables

Primary Explanatory Variables – Contextual Factors

Guided by prior research, eight contextual level variables are used to measure key components of MSOT, the social disorganization perspective, and the systemic model of community attachment. These measures capture community levels of population heterogeneity or racial integration, the concentration of structural disadvantage, residential stability, and local

investment. According to MSOT, interracial contact is the primary social mechanism explaining variations in the relative prevalence of interracial violence. In order for interracial violence to occur a community's social structure must offer opportunities for different race groups to come into contact with one another. While all of the primary explanatory measures are argued to impact the likelihood of fortuitous interracial association, residential racial heterogeneity is used as the primary measure of MSOT. To measure heterogeneity the current study relies on a unique indicator of interracial exposure. This measure is a P* interaction measure that varies between 0 and 1 and can be interpreted as the probability that a randomly drawn white resident shares a census tract within a county with a randomly drawn African American (Massey and Denton 1988). This is a superior measure of population heterogeneity because it gauges the likelihood of interracial contact within the residential environment². Because it gauges the likelihood of interracial associations across census tracts within a county the P* index is a spatially based measure of racial heterogeneity. Moreover, the P* measure of interracial exposure has traditionally not been excessively correlated with indicators of resource deprivation and thus can be examined in conjunction with such measures. Residential segregation has traditionally been conceived as once facet of social disorganization. Therefore, using a measure that taps integration / segregation without being excessively correlated with other measures of social disorganization is vital. In the nonlinear multilevel analyses that follow the P* measure can be understood as measuring the impact of interracial associations within the residential environment on the relative prevalence of race specific patterns of violence³.

² In supplementary analyses a traditional population heterogeneity index was explored. This measure took the form of $[1 - (\text{proportion white}^2 * \text{proportion black}^2)]$. The effects of this measure were substantively similar to those of the P* index, however, the effects were somewhat attenuated.

³ The P* index was converted to a percentage in order to make the results more substantively interpretable as well as comparable.

Social disorganization is measured with five factors that gauge the concentration of structural resource disadvantage. These measures include: the proportion of persons in each county whose income in 2004 was below the federally defined poverty line (USA Counties), the civilian labor force unemployment rate in 2005 (Bureau of Labor Statistics estimate), the proportion of households headed by a female with her own children in 2000 (2000 Census), the proportion of those over the age of 25 who did not graduate high school as of 2000 (2000 Census), and the proportion of the population that did not have health insurance in 2000 (USA Counties)⁴. While the P* index of racial heterogeneity gauges interracial contact primarily within the residential environment, structural resource deprivation gauges a different component of interracial contact. Structurally disadvantaged communities are likely to have high levels of class and thus race based segregation across a number of social spheres. That is, structurally and socially disorganized contextual environments will lead to a reduction in opportunities for contacts between whites and blacks across a diverse array of social situations and routine activities. Blacks and whites will tend to work in a different capacity for a given company, attend different school, shop in different stores, eat at different restaurants, and generally be embedded in different social networks. Therefore, above and beyond residential racial integration, structural disadvantage should impact opportunities for interracial contact throughout an individual's social experience, which, in turn, affects interracial violence.

Population stability and local investment, key factors within the systemic model, are also expected to be associated with interracial violence. Once again, residential stability and local investment should impact opportunities for interracial contact, which, in turn, affect the likelihood that violence will be interracial. Systemic community attachment is measured with

⁴ The most recent available data was used whenever possible. For those measures tapping 2005 level of disadvantage, the results are robust to the choice of year (i.e. 2000 and 2005).

two indicators: the proportion of households in each county that were owner occupied in 2000 and the proportion of county residents who lived in the same house in 1995 and 2000. Both measures were extracted from the 2000 Census of Population and Housing. Together, they tap the degree of population turnover and local investment or stakes in the local community.

Data Reduction

The contextual level indicators of social disorganization and systemic community attachment were chosen to gain insight on those characteristics of contextual environments that impact the likelihood of fortuitous interracial associations. Prior research suggests that many of these factors are likely to be highly correlated as they measure a smaller set of latent constructs (Land, McCall, and Cohen 1990). Consistent with the extant literature, an analysis of the correlations between the seven factors described above highlighted potentially problematic levels of multicollinearity⁵. A Promax rotated principle components factor analysis was performed to discern those variables that capture the same underlying unmeasured latent construct⁶. The results suggest that the seven variables can be grouped into two summary indices.

The results from the Promax rotated principle components analysis are provided in Table 3. The five measures of social disorganization (poverty, female headed households, unemployment, low educational attainment, and the lack of health insurance) each have their

⁵ Only those measures used to tap levels of structural disorganization and residential stability are included in the data reduction analysis. In supplemental analyses racial heterogeneity or integration, was included in a data reduction analysis along with the seven other measures. In this analysis, racial integration had a negative loading on the structural disorganization component. This was expected as racial segregation is a common covariate of structural disorganization. Because racial integration is a key measure of MSOT and its factor loading score was not excessive, this measure was not included in the disorganization index. Supplemental analyses indicate that the models presented in Chapters 4 and 5 do not suffer from excessive levels of multicollinearity.

⁶ Promax rotation is a particular method of oblique as opposed to orthogonal factor rotation. Orthogonal or Varimax rotation techniques assume that summary factors are not correlated to one another. Oblique rotation relaxes this assumption in allowing for correlations between the factors. Oblique or Promax rotation thereby simplifies the factor solution and is in more in line with reality as many of the phenomena examined here do indeed co-occur. The results for a factor analysis using Varimax rotation techniques were substantively the same as those presented.

highest factor loading scores on component one. These measures were combined to form a standardized concentrated disadvantage index by first standardizing each measure and then averaging the standardized values⁷. This comprehensive measure of concentrated resource disadvantage is included in all analyses of interracial violence. However, race specific measures are used in models predicting the relative prevalence of white and black intra-racial violence. The measures of black and white concentrated disadvantage include each of the same measures as the total disadvantage index with the exception of the proportion of residents without health insurance. Principle component analyses of these race specific disadvantage measures were obtained and the results are substantively similar as those for the total disadvantage measure. The race specific measures are thus standardized race specific concentrated disadvantage measures.

Table 3: Promax Rotated Principle Component Matrix

	Component 1	Component 2
Poverty	.930	
Low Education	.731	
FHH	.714	
No Insurance	.702	
Unemployment	.687	
Home own		.885
Same house		.832
Eigen value	2.926	1.842
% Variance Explained	41.80	26.31

In the second factor, two variables that generally tap stationary or stable populations and local investment are combined to create an index of population stability and local investment. This factor includes the proportion that lived in the same house in 1995 and 2000 and the proportion of households that were owner occupied in 2000. By including both a measure of

⁷ The results of the data reduction analysis as well as the effects of the disadvantage measure are robust to the removal of the measure of health insurance.

population turnover and homeownership this factor is consistent with prior empirical analyses of the systemic model of community attachment. Similar to the disadvantage index, a standardized residential stability / local investment index was created using the average of the standardized values for these two measures.

Contextual Level Control Measures

Beyond the measures included in the principle components analysis a number of contextual level control measures were drawn from the 2000 Census, the 2004 UCR, and the 2005 USA Counties data published by the Census Bureau. These include: the total population size (transformed to its natural logarithm), the 2004 index crime rate for each county (converted to its natural logarithm), and binary indicators of whether a county was located in the Census South and whether a county is defined as metropolitan or non-metropolitan according to the Rural Urban Continuum codes.

Incident Level Control Measures

A great number of studies have seemingly confirmed that a diverse array of structural factors are vital predictors of aggregate rates of crime as well as variations in the nature of violence, especially those highlighted in the social disorganization and systemic perspectives (Baumer et al. 2003). However, as noted by Peterson and Krivo (2005), it is difficult to accurately gauge the strength of contextual effects in existing empirical analyses of violence because the majority of macro level criminological studies suffer from potential contextual fallacies. That is, there is the possibility that structural effects are confounded by unmeasured individual level effects. In fact, recent studies by Baumer et al. (2003) and Warner (2007) suggest that the effects of structural disorganization are significantly reduced, often to insignificance, when individual level measures are simultaneously explored.

The primary goal of the current study is to explore the analytical and theoretical flexibility of structural level measures on between county variations in intra and interracial violence. However, a number of incident level measures are drawn from the offense, victim, and offender level segments of the 2005 NIBRS data and used primarily as control measures in the analyses that follow. Beyond highlighting the effects of such factors, their inclusion increases the reliability that any contextual level effects are not subject to contextual fallacies. The specific measures culled from the NIBRS data relate to the offense, victim, and offender of a violent criminal incident. Measures drawn from the offense file of the NIBRS data include: the extent of victim injury and whether a gun was used in the perpetration of the violent crime. The indicator of victim injury ranges from 0-2 representing no injury (0), minor injury (1), and severe injury (2). The characteristics of victims that are controlled for include: age, gender, race, and whether the victim was a residence of the community in which the crime occurred. Finally, the characteristics of offenders that are controlled in the analyses include: gender and whether the offender was suspected of being under the influence of alcohol during the offense⁸.

Descriptive Analysis

Dependent Variables

Table 4 displays the descriptive statistics for each of the race specific dependent variables that will be explored in the following chapters. As discussed above, each of the outcome measures were created by combining information from the victim and offender segments of the NIBRS data. The first two measures are indicators of whether a homicide, robbery, or aggravated assault involved a victim and offender from the same or different race group. While

⁸ A number of other offender characteristics (i.e. age) were analyzed in supplemental analyses and their inclusion had no substantive effect on the results reported in Chapters 4 and 5. These measures were not included in the final analyses as they introduced unnecessary sample limitations due to missing information. In some cases offender information is drawn from an actual arrest record, however, the majority of the information on offenders is that which was reported by the victim.

more than 136,000 incidents were reported to the NIBRS in 2005, only 105,585 of these incidents across 942 counties have valid data on the race of both the victim and offender. Due to missing information on one or more of the independent measures, only 80,422 incidents across 881 counties are included in the multivariate analyses of intra and interracial violence. For intra-racial crimes, the mean of .841 indicates that approximately 84% of the valid cases or 88,756 incidents involved victims and offenders of the same race. While 84% of the 105,585 violent incidents were intra-racial, across the 942 counties the average percentage of violent events that were intra-racial was 91.8%. That is, when each county is given equal weight, the mean of means across counties for intra-racial events is about .92 or 92%. Alternatively, approximately 16% of the valid cases or 16,829 incidents involved victims and offenders from different race groups. However, on average, only about 8.2% of violent crimes across counties were interracial.

In the middle portion of Table 4, those incidents with valid data on the race of the victim and offender are broken down into the four race specific categories of violence. Approximately 45% of the incidents involved a white victim and white offender while about 39% were black intra-racial events. However, when the unit of analysis is the county the results suggest that, on average, approximately 80% of incidents in a county are white intra-racial while only 11.5% are black intra-racial. Substantively, this indicates that there is considerable variation across counties in both white and black intra-racial violence and that criminal incidents in certain counties are primarily intra-racial events. Of the 105,585 homicides, robberies, and aggravated assaults in this analysis, approximately 13% involved a white victim and black offender while only about 3% involved a black victim and white offender. Supporting prior literature, the between county averages for the two forms of interracial violence suggest that across counties

interracial events are quite rare. Across counties, approximately 6.5% of incidents are interracial with a white victim and only about 2% are interracial with a black victim. While interracial events are rare as expected, these descriptive statistics indicate that in this sample of counties there are a significant number of interracial violent crimes and, more importantly, there is considerable between county variations in the relative prevalence of interracial violence.

Table 4: Descriptive Statistics for Dependent Variables

	N	Mean	Standard Deviation	
Dependent Variables				
Intra-race crime	942	.918	.106	
	105,585	.841	.366	
Inter-race crime	942	.082	.106	
	105,585	.160	.366	
W(vic)W(off)	105,585	.453	.499	N = 47,877
	942	.804	.259	
W(vic)B(off)	105,585	.131	.338	N = 13,856
	942	.064	.090	
B(vic)B(off)	105,585	.387	.487	N = 40,879
	942	.114	.205	
B(vic)W(off)	105,585	.028	.165	N = 2,973
	942	.018	.045	
Total Aggravated Assault ^{9 10}	101,869 (85,892)			
Intra-race AA	76,022			
Inter-race AA	9,870			
Total Robbery	32,862 (18,478)			
Intra-race Robbery	11,642			
Inter-race Robbery	6,836			
Total Homicide	1,832 (1,215)			
Intra-race Homicide	1,092			
Inter-race Homicide	123			

⁹ Value in parentheses is the number of cases that have complete data on the race of both the victim and offender

¹⁰ While data on the victim's race is nearly completely reported, information on the offender's race is reported by the victim or, if the offender is apprehended, by the arresting officer. If there is no arrest and the victim is unsure of the offender's race then the incident will be missing information of the offender's race, which seems to be a somewhat common occurrence in this sample of police agencies.

In the bottom portion of Table 4 the three forms of violence are broken down to highlight the number of intra and interracial events that comprise each category. Of the 101,869 aggravated assaults in the 2005 NIBRS only 85,892 offered complete information on the race of both the victim and offender. Of these, 76,022 were between actors of the same race group and 9,870 were interracial. For robbery, there are 18,478 cases that have complete race data with 11,642 being intra-racial and 6,836 being interracial. Finally, of the 1,215 homicide events with complete race information 1,092 were intra-racial while only 123 were interracial events.

While incredible efforts have been made to bring as many agencies as possible into the NIBRS there are still some biases in terms of the agencies that submit their crime reports. Specifically, many of the largest agencies, which tend to record a large proportion of violence crimes, are not yet submitting their reports to the NIBRS. According to the Uniform Crime reports in 2005 there were 15,992 murders, 405,184 robberies, and 822,232 aggravated assaults. Based on these values the current sample of NIBRS data includes 11.5% of murders, 8.1% of robberies, and 12.4% of aggravated assaults¹¹. Further, the murder rate in 2005 was approximately 5.4 per 100,000 residents while the robbery rate was 136.6 and the aggravated assault rate was 277.3. The corresponding rates for the current sample are 2.84 for murder, 50.91 for robbery, and 157.83 for aggravated assault. Overall, the proportion and rates of violent crimes included in this sample are considerably lower than for the general population. However, because many violent crimes occur in a relatively small number of densely populated urban areas the current sample is likely representative of most U.S. communities. That is, most communities do not have considerable high counts or rates of violence and thus are more comparable to those communities included in this sample. In fact, the average murder rate across all U.S. counties is

¹¹ These percentages are slightly lower when only those crimes with valid data on victim and offender race are considered. However, these values are unlikely to change as many crimes in the UCR are missing valid race data.

3.0, the average robbery rate is 35.7, and the average aggravated assault rate is 177.9. When compared to these average county level violent crime rates the current sample is actually quite representative of violent crime rates across counties. Based on this comparison the current sample is representative of violent crimes in the U.S. and therefore the results are generalizable to the majority of communities.

Independent Variables

Contextual Measures

Table 5 presents the descriptive statistics for the contextual level indices as well as the county level control measures included in the analyses that follow. The descriptive statistics for the primary explanatory measures (the standardized indices and residential racial heterogeneity) indicate that there are more than 900 counties with complete information on each of the measures included in the indices. Because the indices were constructed as the average of multiple standardized variables, each measure has a mean of approximately zero and standard deviation of about one. It is however important to note that significantly fewer counties offered complete data on black disadvantage. The mean of the racial heterogeneity measure indicates that, across counties, the probability that a white will next encounter a black is 5.905 or about 6%. The standard deviation for this measure is quite high at 11.421 indicating that there is significant variation in racial heterogeneity of racial integration between the sample counties.

Moving on to the contextual level control measures, there are a number of noteworthy descriptive statistics. For all of the control measures, both the means and standard deviations at both levels of analysis (county and incident) are included. There are 96,250 incidents across 919 counties with complete data on each of the contextual control measures and the race of both the victim and offender. The means of the region measure (South) indicates that 38% of the counties

in the analysis are located in the Southern region but that 42% of incidents occurred in Southern counties. On the other hand, the measures for “Metro” indicate that 34% of the counties in the analysis are classified as metropolitan according to the Rural Urban Continuum codes but that 83% of the criminal incidents occurred in metropolitan counties. Therefore, while the sample of counties is skewed toward smaller places the sample of incidents is skewed toward larger communities. The population size measure confirms this with an average population size of approximately 71,000 across counties and 602,000 across incidents. Finally, across 919 counties there were approximately 2,556 index crimes in each county per 100,000 residents, however, the standard deviation of 1,518 indicates there was considerable variation throughout the sample.

Table 5: Descriptive Statistics for Contextual Level Measures¹²

Primary Explanatory Measures		Mean	Standard Deviation
Total Disadvantage	919	-.007	.742
White Disadvantage	933	.001	.695
Black Disadvantage	797	-.003	.507
Res. Stability / Local Investment	919	-.007	.879
Residential Racial Heterogeneity	919	5.905	11.421
Contextual Control Measures			
South	919	.382	.486
South	96,250	.420	.494
Metro	919	.343	.475
Metro	96,250	.832	.374
Pop Size	919	70,979	156,655
Pop Size	96,250	602,137	638,299
Pop Size (LN)	919	10.231	1.261
Pop Size (LN)	96,250	12.557	1.418
Crime Rate	919	2555.812	1518.387
Crime Rate	96,250	4736.956	1747.035
Crime Rate (LN)	919	7.670	.632
Crime Rate (LN)	96,250	8.380	.437

¹² All descriptive statistics were obtained after first limiting the data file to only those cases with complete information on victim and offender race. For contextual measures, cases with missing race missing race data were deleted prior to data aggregation.

Approximately sixty four million people reside in the counties included in this analysis. While it covers only 22% of the population, the current sample of counties is quite representative of all U.S. counties. The average proportion of residents across all U.S. counties that were below the federally defined poverty line in 2004 was .137 whereas the value for the current sample of counties is .129. Across all counties approximately 22.9% of those over 25 failed to graduate high school, 6.1% of households are headed by females with children, 2.6% of eligible residents are unemployed, and 14.4% of residents have no health insurance. The sample values match these numbers closely with the specific values of 21.2% failing to graduate high school, 5.7% of homes are headed by females with children, 2.6% of residents are unemployed, and 13% of residents have no health insurance. The sample of counties is also representative of all U.S. counties on measures of residential stability, racial heterogeneity, and the racial makeup of residents. Across all counties as well as the sample counties approximately 74% of homes are owner occupied and 59% of residents have lived in their household for at least the last five years. Across the sample the mean of the residential racial heterogeneity measure indicates that the probability that a white will next encounter a black is about 6% whereas the corresponding value for all U.S. counties is 7.4%. Across all counties approximately 86% of residents are white and 9% are black whereas across this sample of counties approximately 88% of residents are white and 7% are black. Overall, the counties in this analysis are quite representative of all counties across a wide array of structural characteristics. As such, the results derived from this representative sample can arguably be generalized to the U.S as a whole.

Incident Level Measures

Table 6 presents the descriptive statistics for the independent variables drawn from the 2005 NIBRS data. The first two measures in this table are indicators of whether a gun was used

in the incident and extent of victim injury. Both measures were drawn from the incident level segment of the NIBRS data. The means for these measures indicate that 20% of those violent criminal incidents with complete information on victim and offender race in the 2005 NIBRS data involved a gun, and that, on average, the victims of these events received some or only minor injuries. The standard deviations of these measures suggest that there is considerable variation in these measures across the sample of more than 100,000 incidents.

Table 6: Descriptive Statistics for Incident Level Measures (2005 NIBRS)¹³

Incident level Measures		Mean	Standard Deviation
Gun Used	103,564	.202	.401
Extent of Injury	104,403	.772	.772
Victim Characteristics			
Age	104,135	32.186	14.186
Male	105,540	.56	.497
Race - White	105,585	.585	.493
Race – Black	105,585	.415	.493
Resident of Community	92,678	.880	.324
Offender Characteristics			
Age	97,267	30.610	12.383
Male	105,461	.800	.397
Race -White	105,585	.482	.500
Race - Black	105,585	.518	.500
Offender Suspected of Using Alcohol	105,585	.115	.319

Table 6 also provides information on victim characteristics. There is valid data on victim age, gender, and race for approximately 105,000 incidents. Within this sample of incidents with complete race information the average age of victims is 32, 56% are male, 58.5% were white, 41.5% were black, and the vast majority (88%) were residents of the community in which the crime occurred. The final section of Table 6 presents describes offenders. Because the police often fail to arrest an offender and because it can be difficult for victims to correctly gauge the

¹³ All values are based on only those cases with complete data on victim and offender race.

age of their attacker the age of the offender is missing for a substantial portion of incidents. As such, this measure is not included in the analyses that follow. The majority of offenders (80%) are male but there is a fairly even racial distribution with 48% being white and 52% being black. The final variable in the table is based on the victim's perceptions of whether or not they believed their attacker was under the influence of alcohol. According to victim's accounts, 11.5% of offenders were under the influence of alcohol during the violent criminal incident.

Bivariate Analysis

In Table 7 the bivariate correlations between each of the race specific outcome measures and the predictor measures are presented. The correlations between the race specific forms of violence and racial heterogeneity as well as the social disorganization and residential stability indices are particularly important. That is, the patterns of correlations between the dependent variables and the primary contextual factors provide an initial, albeit incomplete, examination of the predictions laid out in hypotheses 1 through 9. The relation between the outcome measures and the contextual and incident level control measure are also explored in Table 7.

Interracial Incidents

In the first column of Table 7 the correlations between interracial violence and the predictor measures are presented. As predicted by hypothesis 1, residential racial heterogeneity or integration is significantly positively correlated with between community variations in the probability that violence will be interracial. This positive correlation supports MSOT as violence involving whites and blacks is relatively more prevalent in places where whites and blacks are more likely to come into contact. Hypothesis 4 predicts that concentrated disadvantage will have a negative effect on the likelihood that violence will be interracial. In support of this expectation the disadvantage index is significantly negatively correlated with between county variations in

the probability that violence will be interracial. Per the explication of the theoretical linkages between social disorganization and MSOT, this negative correlation is interpreted as structural disadvantage results in the concentration of race groups in a community, particularly blacks. As such, there are fewer opportunities for fortuitous interracial association and thus a decrease in the likelihood that violence will be interracial. Finally, as predicted in hypothesis 7, the residential stability / local investment index has a significant negative correlation with between county variations in the likelihood of interracial violence. This suggests that fortuitous interracial contact is less likely and thus interracial violence is relatively less prevalent in those counties with stable populations that are tied to the community through home ownership.

In regards to the contextual and incident level control measures, a number of interesting correlations are apparent. Each of the contextual level controls is significantly correlated to the likelihood that violence will be interracial. The pattern of correlations indicate that interracial violence is relatively less prevalent in Southern counties, however, there is an increased likelihood that violence will be interracial in metropolitan counties with larger populations and higher index crime rates. Concerning characteristics of the offense, interracial incidents are more likely to involve a gun but less likely to result in significant injury to the victim. As for victim characteristics, interracial violence tends to involve older, white, male victims who do not live in the community in which the crime occurred. Finally, offenders in interracial events tend to be male and are less likely to be suspected of using alcohol during their crime.

Race Specific Forms of Violence

White Victim / White Offender Incidents

The correlations between the predictor measures and white intra-racial violence are presented in the second column of Table 7. The pattern of correlations between white on white

Table 7: Correlations: Race Specific Forms of Violence¹⁴

	Interracial Incident	W(vic)W(off)	B(vic)B(off)	W(vic)B(off)	B(vic)W(off)
Contextual Measures					
Racial Heterogeneity	.013**	-.344**	.344**	.016**	.003
Concentrated Disadvantage	-.050**			-.041**	-.027**
White Disadvantage		.227**			
Black Disadvantage			.245**		
Res. Stability / Local Investment	-.094**	.117**	-.050**	-.090**	-.026**
South	-.016**	-.023**	.036**	-.014**	-.006
Metro	.071**	-.188**	.140**	.070**	.015**
Population Size (NL)	.069**	-.351**	.309**	.072**	.007*
Index Crime Rate (NL)	.051**	-.352**	.324**	.054**	.003
Incident level Measures					
Gun Used	.041**	-.182**	.155**	.046**	-.002
Extent of Injury	-.067**	.064**	-.015**	-.066**	-.015**
Victim Characteristics					
Age	.033**	.000	-.024**	.044**	-.018**
White	.211**				
Male	.068**	-.008**	-.042**	.049**	.049**
Community Resident	-.071**	-.057**	.110**	-.073**	-.007*
Offender Characteristics					
Male	.084**	.024**	-.088**	.097**	-.011**
Suspected of Using Alcohol	-.062**	.157**	-.114**	-.065**	.005

**p ≤ .01 *p ≤ .05

¹⁴ All correlations are based on only those cases with complete data on victim and offender race.

violence and the primary contextual measures support the theoretical model explicated in Chapter 2. White on white violence is relatively less prevalent in racially heterogeneous counties. Conversely, white intra-racial violence is relatively more prevalent in residentially stable places where concentrated disadvantage among whites is higher. These patterns of correlations suggest that fortuitous interracial associations are positively related to the likelihood that violence will be interracial.

As for the contextual level controls, the likelihood that violence will involve a white victim and a white offender is lower in Southern counties as well as populous metropolitan areas with higher index crime rates. As for the incident level control measures, white intra-racial events are less likely to involve a gun, result in greater victim injury, are less likely to involve male victims and non-residents, but more likely to involve male offenders who may be under the influence of alcohol.

Black Victim / Black Offender Incidents

The correlations between each of the predictor measures and violence between actors who were both black are presented in the third column of Table 7. The most interesting aspect of the correlations between Black intra-racial violence and the series of predictor measures is that they are substantially and substantively different from the pattern of correlations for White intra-racial violence. In fact, all but two of the correlations are in the opposite direction as those for White intra-racial violence. This underscores the importance of distinguishing intra and interracial events but also white and black intra-racial violent events. This differential pattern of correlations was expected and provides an initial layer of support for hypotheses 3, 6, and 9. In support of hypothesis 3, racial heterogeneity exhibits a statistically significant positive correlation to black intra-racial violence whereas the correlation was negative for white intra-

racial violence. As predicted in hypothesis 6, black disadvantage has a significant positive correlation with black intra-racial violence and this correlation is larger than that for white intra-racial events. Finally, the negative correlation between residential stability and black on black violence, when compared to the positive correlation in the white intra-racial model, provides an initial layer of support for hypothesis 9. Overall, this pattern of correlations suggests that the contextual level correlates of white and black intra-racial violence are substantially different.

As for the contextual level control measures, black intra-racial violence is relatively more prevalent in the South as well as large populous counties with high index crime rates. The incident level control measures indicate that black on black violence is more likely to involve a gun but less likely to involve significant victim injury. The victims of black intra-racial events are apparently less likely to be male but tend to be younger residents of the community. Black intra-racial events are also more likely to involve male offenders who are not suspected of being under the influence of alcohol. It was somewhat unexpected that black intra-racial events would be more likely to involve female victims, however, this finding may be tied to the fact that these data are based on only those crimes reported to the police. Prior research suggests that many black intra-racial violent criminal incidents, especially those involving young black male victims, are not reported to the police (Hindelang 1978; Braithwaite 1981; Wright and Decker 1997). Unfortunately, in many black communities the police are not seen as legitimate agents of formal social control, which leads many minorities to not report their victimization experiences to police. Moreover, many young black males fail to report their victimizations because they are involved in criminal activities themselves, they subscribe to street codes and groups that stigmatize those who call the police rather than handle such issues themselves, and many often

do not define their victimization experiences as worthy or severe enough to deserve reporting to the police (Elliot and Ageton 1980; Wright and Decker 1997; Anderson 1999).

White Victim / Black Offender Incidents

The correlation matrix for interracial violence involving a white victim and black offender is presented in column 5 of Table 7. The likelihood that violence will be interracial of this specific nature follows the exact same pattern of bivariate correlations as for the total interracial violence measure described above. The likelihood of this form of interracial violence is positively correlated to residential racial heterogeneity and inversely correlated to the total concentrated disadvantage and residential stability indices. This suggests that white victim / black offender violence is relatively more prevalent in counties with more racially heterogeneous populations but relatively less prevalent in socially disorganized and residentially stable counties. As for the contextual level control measures, interracial violent crimes with white victims are relatively less prevalent in the South but relatively more prevalent in populous metropolitan communities with higher index crime rates. White victim / black offender events are also more likely to involve a gun, result in less severe victim injury, involve older male victims who are not community residents, and they tend to involve male offenders who are not suspected of being under the influence of alcohol.

Black Victim / White Offender Incidents

In the final column of Table 7 the correlations between interracial events involving black victims and White offenders and the predictor measures are presented. For many of the predictor measures the pattern of correlations for this form of interracial violence mirror those for the total interracial and white victim / black offender forms of violence. These similar patterns of correlation, especially between the primary contextual level measures, provide an initial layer of

support for hypotheses 2, 5, and 8. In support of hypothesis 2, racial heterogeneity is not significantly correlated with black victim interracial violence whereas this measure was significantly positively correlated with white victim interracial violence. Concentrated disadvantage is negatively correlated with black victim interracial violence just as it was with total and white victim interracial events. While the effect of concentrated disadvantage is somewhat smaller for black victim interracial violence, the similarity in the direction of the effects supports hypothesis 5. Similarly, the residential stability index exhibits a negative correlation with black victim interracial violence that is somewhat larger than the negative effect of this index on white victim interracial violence. This pattern of correlations none the less provides an initial layer of support for hypothesis 8. Overall, the pattern of correlations between total, white victim, and black victim interracial violence and the primary contextual level measures support the theoretical melding of MSOT and the social disorganization and systemic perspectives. That is, structural features of counties impact the likelihood of fortuitous interracial associations, which, in turn, impact the likelihood that violence will be interracial.

As for the contextual and incident level control measures, the pattern of correlations is not identical to those for the other patterns of interracial violence. Black victim interracial violence is relatively more prevalent in populous metropolitan counties, however, the Southern region measure and the index crime rate are not significantly correlated with this form of interracial violence. This form of interracial violence is also tends to result in less injury to the victim, tends to involve younger male victims who are not residents of the community, and offenders are more likely to be female. This form of violence however is not related to the use of a gun or suspected alcohol use.

Multivariate Analyses

In Chapters 4 and 5 multivariate analyses examining the relative prevalence of race specific forms of violence across counties are presented. The results presented in Chapter 4 center on the incident and contextual level predictors of between county variations in the likelihood that violence will be interracial. Again, only crimes between whites and blacks are considered in this study. Therefore the analyses compare white victim / black offender and black victim / white offender violence to white and black intra-racial violence. This analysis allows for in-depth empirical tests of hypotheses 1, 4, and 7. In chapter 5, the incident and contextual level predictors of each of the four patterns of intra and interracial violence are examined. As such, the analyses provide tests of hypotheses 2, 3, 5, 6, 8, and 9. In each of the multivariate analyses the contextual level measures drawn from MSOT, the social disorganization perspective, and the systemic model of community attachment are considered simultaneously with the incident level predictors drawn from the 2005 NIBRS.

Because the dependent measures are binary and the predictor measures are situated at two distinct levels of analysis the analytical strategy underlying the multivariate analyses involves nonlinear multilevel modeling techniques. Beyond theoretical contributions, such analyses will substantively advance the literature on interracial violence by utilizing the most up to date and technically sophisticated modeling techniques to simultaneously consider contextual and incident level predictors of the relative prevalence of race specific patterns violence. The theoretical rationale for employing multilevel regression techniques is that the contextual environment in which crimes occur has important implications toward the nature of violence. In other words, context matters, and theoretical extension of popular ecological level social theories provide a number of empirically testable hypotheses concerning the impact of contextual environments on

the relative prevalence of race specific patterns of violence. Statistically, because multiple criminal incidents are nested within single contextual units the data violate an important assumption of Ordinary Least Squares regression techniques. Specifically, the data are clustered within counties and thus violate the assumption of independent error terms. The empirical rationale for using multilevel techniques is that an initial analysis of the data highlighted tremendous variation across places in the probability of interracial violence.

While multilevel analyses, particularly nonlinear multilevel regression techniques, are quickly becoming popular within the micro and macro sociological literature, the benefits are still widely unrecognized or misunderstood. In fact, an extensive review of recent research in an array of social sciences journals uncovered only a handful of studies that use nonlinear multilevel modeling techniques (Rotolo 2000; Lo 2003; Lam 2006; Ryan 2006; Rebellion, Straus, and Medeiros 2008). Further, virtually no criminological analyses have utilized such methods. There are at least two reasons for the under utilization of these techniques in the extant literature. First, many research questions are concerned with understanding the impact of community structures on rates of violence. While it is important to understand between community variations in rates of violence, such analyses do not highlight the role played by characteristics of the types of crimes, victims, and offenders in different contextual environments. More importantly, it is vital that criminological analyses explore variations in the nature of violence above and beyond variation in crime quantities. That is, structural factors do not equally impact all forms of violence therefore it is vital that we understand the potentially differential role of certain characteristics of contextual environments. A second reason that multilevel regression techniques have yet to become extensively used in the criminological literature stems from the use of logistic modeling techniques. Logistic regression techniques allow researchers to examine

the relative prevalence of different forms of violence and to incorporate multilevel predictors. However, such models are not truly multilevel in nature as they fail to compensate for both within and between unit variations in both outcome and predictor measures. Moreover, the inclusion of predictors from multiple units of analysis can potentially lead to biased standard errors, which can lead to potentially erroneous findings.

Because nonlinear multilevel modeling techniques can be misunderstood and misinterpreted, supplemental analyses were conducted in order to provide another layer of support for the findings reported in Chapters 4 and 5. For each county, the proportion of violent criminal incidents in each category of race specific violence was obtained (i.e. proportion of crimes that were interracial). Ordinary Least Squares regression techniques were then used to assess the impact of the contextual level predictors on the proportion of violence in each race specific category. All results reported in Chapters 4 and 5 are substantively the same as those derived from the analyses of crime proportions. Further, all models were run using logistic regression techniques. The logistic regression results were substantively similar to those reported in Chapters 4 and 5. Finally, the Hierarchical Linear Modeling (HLM) software used in this study (HLM 6.06) provides a number of diagnostic tests that can be used to verify the stability and robustness of the results. All results are robust to the removal of counties with excessively high or low residual values. Moreover, all results are robust to the removal of those counties with high residual values as well as the removal of those counties that reported an excessively large or small number of crimes to the NIBRS in 2005. The specifics of the nonlinear multilevel modeling techniques used in this analyses are provided at the beginning of Chapter 4.

Summary

The descriptive and bivariate analyses discussed above provide a number of important initial findings regarding the relationship between the contextual and incident level measures and the likelihood of various race specific forms of violence. These analyses provide exploratory results regarding the multilevel relationships at the heart of this study and are an important first step in testing the hypotheses described in Chapter 2. It is however important to note that bivariate correlations, while interesting and important, may be tenuous and that the multivariate analyses will provide a much more thorough test of the hypotheses. I summarize the findings of the descriptive and bivariate analysis below.

1. In this sample of more than 105,585 incidents across 942 counties, county level measures culled from the social disorganization and systemic community attachment perspectives are empirically distinct. Further, supplemental analyses suggest that these structural measures are sufficiently empirically distinct from the primary measure of MSOT, residential racial heterogeneity, which will allow for measures of these perspectives to be simultaneously entered into the regression models that follow.
2. The 2005 NIBRS data provides a well rounded sample of violence. However, aggravated assaults and robberies are much more prevalent than homicide in this sample and thus the crimes in this sample are more representative of these forms of violence. A further insight into the NIBRS data is that while past samples of NIBRS data were severely limited to small police agencies, it seems that many large agencies and complete states are now fully onboard with the NIBRS. As such, results based on analyses of the 2005 NIBRS data are far more generalizable than previous years of data from the NIBRS.

3. The dependent variables exhibit a great deal of variation across both counties and incidents suggesting a significant amount of variation in race specific violence within the 2005 NIBRS data. That is, beyond variation in aggregate rates of violence, communities also exhibit considerable variation in the quality or nature of violence. This variation is vital to the current analysis as hypotheses 1 through 9 predict that certain structural features will impact variations between counties in the relative prevalence of race specific forms of violence.
4. The contextual and incident level measures also exhibit a great deal of variation across counties and incidents. This is important considering the limited geographic coverage and small agency bias in the 2005 NIBRS data. Some important aspects of the NIBRS data include: a good balance between white and black violence, victim and offender gender, region, and gun violence.
5. The comparison of intra versus interracial violence appears to be a meaningful point of disaggregation and the effects of a number of predictors are significantly different across these distinct forms of violence. Some of the most important differences concern the differential effects of the primary contextual level explanatory measures: residential racial heterogeneity, concentrated disadvantage, and residential stability.
6. Beyond distinguishing between intra and interracial events, it also seems prudent to examine the four individual forms of violence between Blacks and Whites. As noted above, different forms of intra-racial violence exhibit significantly different patterns of correlations with the predictor measures at both the contextual and incident levels. Moreover, the correlations between the two forms of interracial violence also exhibit some differences on their patterns of correlations with the predictor measures.
7. The most important finding stemming from the bivariate analysis presented above is that the predictions described in hypotheses 1 through 9 receive an initial layer of support. Specifically,

the bivariate correlations between the primary explanatory measures and the race specific forms of violence confirm the theoretical ties between MSOT and the social disorganization and systemic perspectives. The pattern of bivariate correlations supports the argument that structural features of communities heavily impact opportunities for interracial associations and thus the likelihood that violence will be interracial.

CHAPTER 4: ANALYSIS OF INTERRACIAL VIOLENCE

In this chapter I test hypotheses centered on interracial as opposed to intra-racial violence derived from the review of the relevant literature and the theoretical models explicated in Chapter 2. Specifically, hypotheses 1, 4, and 7, which pertain to between county variations in the likelihood that a homicide, robbery, or aggravated assault will be interracial in nature, are tested utilizing the hierarchical nonlinear analytical strategy mentioned in Chapter 3 and detailed below. These hypotheses include:

H1: Population heterogeneity will have a positive effect on the probability that violence will be interracial.

H4: Concentrated Structural disadvantage will have a negative effect on the probability that violence will be interracial.

H7: Residential stability will have a negative effect on the probability that violence will be interracial.

Prior research on the effects of variation in community levels of racial heterogeneity, residential stability, and concentrated disadvantage have largely been limited to contextual level analyses. While such studies underscore the importance of contextual environments in understanding patterns of violence or crime rates across communities, a number of questions remain unanswered. In focusing on contextual level predictors and rates of violence prior research has failed to adequately address the fact that patterns of violence differ both within as well as across communities. Moreover, ecological analyses fail to address questions concerning whether variation in the patterning of violence across communities is primarily the result of differing contextual environments or variation in the characteristics of victims, offenders, and the incidents in which they are involved within specific environments. That is, do patterns of violence vary across communities due to differing contextual environments or is it simply

variation in the types of victims and offenders that become involved in criminal incidents within specific environments?

Addressing the extant literatures failure to adequately address the hierarchical nature of violent criminal incidents requires obtaining data on victims, offenders, and criminal incidents as well as the contextual environments in which they occurred. To develop and test such a nested model the results presented below are based on incident level data collected through the 2005 National Incident Based Reporting System (NIBRS) while contextual or community level data are drawn from a number of data sources and describe the counties in which the incidents occurred. Unfortunately, the use of traditional Ordinary Least Squares (OLS) regression techniques is problematic due to the violation of the assumption of independent observations. That is, OLS regression assumes that observations, in this case criminal incidents, are independent from one another. While distinct incidents may seem to be independent from one another, a crux of the current analysis is that criminal incidents are grouped within contextual environments that possess unique characteristics that impact the likelihood that violence will take on a certain form. Violation of the independence assumption can lead to attenuated standard errors, resulting in misleading statistical tests and conclusions (Bryk and Raudenbush 1992; Raudenbush and Bryk 2002). Hierarchical linear modeling (HLM) techniques address this issue of non-independence and are becoming quite common in the criminological literature. However, the current dependent variable is binary (intra versus interracial criminal incidents) and is thus not suitable for traditional HLM techniques.

To overcome these issues, hierarchical *nonlinear* modeling techniques are used to partition effects at the incident and county levels on the incident level outcome – whether an incident was interracial. Specifically, we observe y_{ij} , a binary outcome for incident i in county j

and define the probability of the response equal to one (interracial violence) as $p_{ij} = Pr(y_{ij}=1)$ and let p_{ij} be modeled using a logit link function. A standard assumption is that y_{ij} has a Bernoulli distribution. The complete two-level model can be written as follows.

$$\text{Log} [p_{ij} / (1 - p_{ij})] = \beta_0 + \beta_1 x_{ij} + u_j \quad (\text{Combined Model}) \quad (1)$$

In this combined model u_j is the random effect at level two (county level). Without u_j , equation (1) would be a standard logistic regression model. This model assumes that u_j is normally distributed and, conditional on u_j , y_{ij} s are assumed to be independent.

Level-1 Model

While the combined hierarchical nonlinear model is presented in equation (1), it is helpful to divide this equation into level 1 (incident) and level 2 (county) equations. The level 1 model specifies the effects of incident level characteristics on the probability that a violent criminal incident will be interracial as opposed to intra-racial. When using hierarchical modeling the slopes (β) can be allowed to vary across groups (a random component), however, preliminary analyses suggested that such variation was not evident for the incident level measures in this sample of criminal incidents. That is, the effects of the incident level measures drawn from the NIBRS may be important predictors of variations between counties in the likelihood that violence will be interracial but these effects do not vary across the counties in this sample. The following is the level 1 model presented in mathematical form:

$$\text{Log} [p_{ij} / (1 - p_{ij})] = \beta_0 + \beta_1 x_{ij} + r \quad (\text{level 1 model}) \quad (2)$$

Again, the model is predicting the logit function of the probability that a given violent incident will be interracial as opposed to intra-racial. In the level 1 equation β_1 represents a matrix of incident level variables while x_{ij} is a vector of coefficients representing the effects of the incident

level variables on the probability that an incident will be interracial in county j . Finally, r is the level one error term.

The specific incident level variables entered into the level 1 model include: the victim's age, gender, race, and resident status; the offender's gender and suspected use of alcohol during the incident; whether a gun was used in the incident and the extent of victim injury. All incident level measures are centered on their respective county means allowing the intercept term β_{0j} to be interpreted as the average probability that a violent criminal incident will be interracial in county j . By taking the exponentiation of the log-odds coefficients in the models presented below, $\{\exp[\text{Log} [p_{ij} / (1 - p_{ij})]]\}$, it is possible to obtain the odds ratio for an incident to be interracial in nature. After entering the specific incident level measures used in this analysis the complete level 1 model that will be presented below is as follows.

$$\text{Log} [P/(1-P)] = \beta_{0j} + \beta_1^*(\text{Victim Age}) + \beta_2^*(\text{Victim Gender}) + \beta_3^*(\text{Victim Resident}) + \beta_4^*(\text{Offender Gender}) + \beta_5^*(\text{Offender Alcohol Use}) + \beta_6^*(\text{Gun Crime}) + \beta_7^*(\text{Victim Injury}) + \beta_8^*(\text{Victim Race}) + r$$

Level-2 Model

In the level 2 model, the county level measures are used to explain variation in the intercept parameter (β_{0j}) in equation (2) or the level 1 model. That is, the contextual measures are used to explain variation in the average probability that a violent criminal incident will be interracial in county j . The following is the level 2 model presented in mathematical form.

$$\beta_{0j} = \beta_0 + \beta_{00}x_j + u_j \quad (\text{Level 2 Model}) \quad (3)$$

The level 1 intercept term β_{0j} represents the average probability that a violent criminal incident will be interracial in county j while x_j is the level 2 coefficient vector representing the effect of a matrix of county level variables (β_{00}). Further, β_0 is the nonrandom component of β_{0j} and u_j is

the random effect at level two. After entering the specific contextual level measures used in this analysis the complete second level model that will be presented below is as follows.

$$\beta_{0j} = \beta_0 + \beta_{11}*(\text{South}) + \beta_{12}*(\text{Metro}) + \beta_{13}*(\text{Crime rate}) + \beta_{14}*(\text{Population size}) + \beta_{15}*(\text{Disadvantage}) + \beta_{16}*(\text{Residential stability}) + \beta_{17}*(\text{Residential heterogeneity}) + u_j$$

Analysis

The results of the nonlinear hierarchical models predicting the likelihood or probability that a homicide, robbery, or aggravate assault will be interracial are presented in two models in Table 8. Model 1 includes only the incident level measures drawn from the 2005 NIBRS and Model 2 is the full nonlinear multilevel model containing the incident and contextual level measures. Both models were created using version 6.06 of the HLM software developed by Raudenbush, Bryk, and Congdon (2008). Further, all models were created using full maximum likelihood estimation techniques with the over dispersion parameter turned on. The results presented are derived from the unit specific models with robust standard errors provided within the HLM output. The coefficients are log-odds estimates, however, performing an exponential transformation allows for the predicted log odds to be converted to a change in the odds. Using the below equation (4) the predicted log-odds of any case (j) can be converted into a predicted probability (K_{ij}).

$$K_{ij} = 1/(1 + \exp(-\mu_{ij})) \quad (4)$$

Before discussing the models presented in Table 8 the unconditional model or an intercept only model deserves mentioning. While no predictors are included in the unconditional model it is an important first step in a multilevel analysis of interracial violence. Specifically, the intercept only model highlights the amount of observed variation across counties in the probability that a violent criminal incident will be interracial. The intercept term in this model is -2.329 and represents the predicted log-odds of an incident being interracial when no

independent measures are included in the prediction equation. Entering this intercept value into equation (4) suggests that the probability that violence will be interracial across all counties is approximately 8.9%. This suggests that there is significant between county variation in the probability of violence being interracial but that the average probability across counties is .089 or 8.9%. This percentage is consistent with the results from the full sample presented in Table 4 in Chapter 3 that indicate that, on average, 8.4% of violent incidents are interracial across counties.

The unconditional model also provides two random effect variance components. Normally, the HLM software does not report the level one random effect variance component with nonlinear hierarchical models because this variance is a function of the mean of the binary dependent variable (Luke 2004). However, an estimate of this value can be obtained by turning on the over dispersion parameter (Raudenbush, Bryk, and Congdon 2008). This option was chosen because a comparison of the intercept (level two) and level one variance components provides information that is useful in terms of decomposing the within and between county variance in the probability that violence will be interracial. The random effect variance components are .589 for the intercept (between county variance) and .962 for level 1 (within county variance). By dividing the between county variation (.589) by the sum of the two variance components (1.551) it is possible to obtain the intra class correlation coefficient. This coefficient is a gauge of the percentage of variation in the probability that violence will be interracial that can be attributed to contextual level factors. In this case, the results suggest that approximately 38% of the variation in the likelihood that violence will be interracial between counties can be attributed to county level characteristics. Overall, the unconditional model suggests that the contextual environment in which violence occurs plays a vital role in determining its racial patterning.

Model 1 in Table 8 includes all of the incident level measures describing the event, victim, and offenders of criminal violence. No contextual (i.e. county) level measures are included in this model. As mentioned above, preliminary analyses indicated that each of the incident level measures performed consistently across counties. Therefore, the results presented in model 1 do not have a true random component in the sense that the effects of the incident level measures were not allowed to vary across the second level units or counties. Substantively, this indicates that the slopes described by the incident level coefficients are consistent across the sample of counties but that the intercepts were allowed to vary. As such, the coefficients presented in model 1 are global effects in that the same effects should be evident in each individual county. The results are thus substantively similar to those that would be derived from a traditional logistic regression analysis.

The results presented in model 1 are based on 80,422 homicides, robberies, and aggravated assaults that occurred and were reported to the police in 2005 across 881 U.S. counties. These numbers are slightly lower than those presented in the descriptive analysis due to missing incident level data for one or more of the predictor measures. The reliability estimate for model 1 is .335, which exceeds the traditional .20 cutoff and is an indicator of considerable variation between counties in the probability that violence will be interracial. When entered into equation 4, the intercept (-2.402) indicates that, when all of the incident level measures are constrained to a value of zero, the average probability across counties that violence will be interracial is approximately .083.

The level one model includes the following variables: the victim's age, race, gender, and resident status; the offender's gender and suspected use of alcohol during the incident; whether a gun was used in the incident, and the extent of victim injury. The results suggest that each of the

incident level measures is significantly associated with the likelihood that violence will be interracial. The direction of the log-odds coefficients for the victim characteristics indicate that interracial violence, as compared to intra-racial violence, is more likely to involve victims that are older, white, male, but not residents of the community in which the crime occurred. While victim age has only a modest effect, the other victim characteristics have quite strong effects and victim race has the most substantial effect in the model. The exponentiation of the log-odds coefficient for the victim characteristics in model 1 suggests that the odds of being involved in an interracial criminal incident are 1.23 times greater for males, however, the odds of a community resident being victimized by an offender of a different race are only .65 of those for non-residents. Moreover, the odds that a white victim, as compared to a black victim, will be involved in an interracial event are an incredible 7.23 times greater. The fact that the victim's race would have such a dramatic effect on the likelihood that violence will be interracial is somewhat unexpected but does provide a semblance of support for the racial animosity hypothesis, which argues that disadvantaged minorities may seek out majority group members to victimize due to disparities in their ascribed social positions.

The direction of the log-odds coefficients for the offender characteristics indicate that interracial violence is more likely to involve male offenders who were not suspected of being under the influence of alcohol by their victim. The exponentiation of these log-odds coefficients indicates that the odds are 1.61 times greater that male offenders will be involved in interracial incidents whereas the odds that the offender of an interracial event will be under the influence of alcohol are only about half of those for offenders not under the influence. As for characteristics of the incident, interracial violence is more likely to involve a gun but less likely to involve significant victim injury. In fact, the odds that a criminal incident will be interracial are 1.23

times greater when a gun is involved. These results suggest that guns are vital tools in gaining victim compliance in interracial events, however, the use of such potentially deadly weapons equate to less severe injuries to the victims of interracial violence.

A traditional R-Square or variance explained measure is not available with hierarchical nonlinear modeling techniques. However, it is possible to estimate the percentage of between county variation in the probability that violence will be interracial explained by the incident level measures by comparing the intercept random effect variance components in the unconditional and level 1 only models (Luke 2004; Raudenbush, Bryk, and Congdon 2008). The ratio of the difference in the between county variance in these models $(.589 - .388) / .589$ indicates that approximately 34% of the variation in the likelihood that violence will be interracial between counties is explained by the incident level measures included in model 1. This does not represent a true contextual effect but rather an indication of unequal composition of groups across counties. This unequal group composition or variation in the incident level measures does however explain a considerable amount of the between county variation in the probability that violence will be interracial. While 34% is substantial, there is also a considerable amount of variation between counties in the likelihood of interracial violence that is not attributable to the incident level measures. This provides another layer of support for the notion that contextual environments play a significant role in determining the probability that violence will be interracial in nature.

The random effect variance components for model 1 are .388 for the intercept (between county variance) and 1.278 for level one (within county variance). The ratio of the total variance to the between county variance, the intra class correlation coefficient, indicates that after controlling for the incident level measures, 23% of the variation in the probability that violence

will be interracial between counties is due to level 2 or contextual level factors, which are not measured in this model. The decrease in the intra class correlation coefficient from 38% in the unconditional model to 23% in the level 1 model suggests that the characteristics of events, victims, and offenders of criminal incidents do play a vital role in predicting between county variations in the likelihood that violence will be interracial. That is, while the effects of incident level measures may be consistent across contextual environments (counties) in terms of predicting the likelihood of interracial violence, the types of incidents and actors that increase the likelihood of interracial violence are more prevalent in certain contextual environments.

Model 2 in Table 8 presents the results for the complete hierarchical nonlinear model. In this model, each of the contextual (i.e. county) and incident level measures were entered simultaneously. The effects of the primary explanatory measures in model 2 represent comprehensive tests of hypotheses 1, 4, and 7 because both incident and contextual measures are included in the model. That is, the inclusion of incident level characteristics provides a certain level of assurance that the effects of the contextual level measures are not simply the result of contextual fallacies (Peterson and Krivo 2005). The contextual level measures are strong and robust predictors of variation between counties in the likelihood that violence will be interracial after controlling for variations across communities in incident characteristics. As in model 1, the results for model 2 are based on 80,422 incidents across 881 counties. The reliability estimate for model 2 drops to .265, however, this decrease was expected and indicates that the measures included in the model explain a significant proportion of the between county variation in the probability that violence will be interracial. Further, the intercept value of -6.199, when entered into equation 4, suggests that when all of the predictor measures are constrained to a value of zero the average probability across counties that violence will be interracial is .002.

Substantively, this indicates that the contextual level measures play a vital role in predicting between county variations in the relative prevalence of interracial violence.

Table 8: Results of Non-Linear Multilevel Models of Inter-Racial Violent Incidents

		Model 1	Model 2
	Reliability	.335	.265
	Intercept	-2.402** (.070)	-6.199** (.824)
Primary Measures			
	Residential Racial Heterogeneity		.025** (.004)
	Concentrated Disadvantage		-.444** (.087)
	Residential Stability		-.151** (.042)
Contextual Controls			
	County in South		.262** (.079)
	Metropolitan County		-.062 (.089)
	Population Size (LN)		.219** (.040)
	Crime Rate (LN)		.129 (.112)
Victim Characteristics			
	Age of Victim	.004* (.002)	.004* (.002)
	White Victim	1.978** (.398)	1.960** (.399)
	Male Victim	.274** (.039)	.275** (.040)
	Community Resident	-.438** (.090)	-.438** (.091)
Offender Characteristics			
	Male Offender	.477** (.039)	.476** (.039)
	Suspected of Using Alcohol	-.704** (.051)	-.710** (.052)
Event Characteristics			
	Gun was used	.204** (.043)	.203** (.043)
	Victim Injury	-.184** (.026)	-.185** (.026)
N – Incidents		80,422	80,422
N- Counties		881	881
Random Effect Variance Component (Intercept)		.388 (.623)	.259 (.509)
R.E.V.C (Lev 1)		1.278 (1.130)	1.282 (1.132)

Robust Standard Errors in Parentheses **p ≤ .01 *p ≤ .05

As explicated in Chapter 2, hypothesis 1 asserts that population heterogeneity or residential racial integration should have a significant positive effect on the probability that violence will be interracial. This prediction is assessed by the inclusion of the measure labeled residential racial heterogeneity. As explained in Chapter 3, this measure is a gauge of residential racial heterogeneity or integration and specifically measures the probability that a random white resident will next come into contact with a black resident within the residential environment or census tract. Higher values on this measure indicate a greater level of residential racial integration. The primary explanatory measures, including the residential heterogeneity measure, appear near the top of model 2. As predicted, the residential racial heterogeneity measure has a positive and statistically significant effect on the probability that violence will be interracial. This indicates that a significant amount of the variation between counties in the likelihood that violence will be interracial is due to county level variation in residential racial integration. In those counties where whites and blacks are more likely to come into contact with one another within the residential environment violence has an increased probability of being interracial in nature. What is very important is that the effect of racial heterogeneity is significant above and beyond the effects of the incident level measure. As such, the positive effect of racial heterogeneity on the probability of interracial violence is not a contextual fallacy but rather a true indication that as communities become more racially integrated within the residential environment violence becomes increasingly likely to take an interracial form.

The log-odds estimate for the racial heterogeneity measure is .025 and the exponentiation of this effect suggest that a unit or 11% increase in residential integration yields a 1.03 increase in the odds that a violent criminal incident will be interracial. The positive effect of residential racial heterogeneity, while somewhat small, supports macro structural opportunity theory

(MSOT). MSOT posits that intergroup relations, both positive and negative, depend primarily on opportunities for contact between members from different groups. That is, communities in which whites and blacks are more likely to come into contact with each another within the residential environment also experience an increase in the likelihood that homicides, robberies, and aggravated assaults will be interracial.

Hypothesis 4 predicts that concentrated structural level disadvantage will have a significant negative effect on the probability that violence will be interracial. The concentrated disadvantage measure is also included in the panel labeled primary explanatory measures in Model 2. As explained in Chapter 3, this measure is a standardized index created based on the results of principle components analysis. The index includes five highly correlated county level measures that tap community levels of concentrated resource deprivation including: the percent of the population in poverty, the percent unemployed, the percent of households headed by single females with their own children, the percent of the population over the age of 25 that failed to graduate from high school, and the proportion of residents who do not have health insurance. Higher values on this measure are indicative of communities that are mired down by multiple overlapping forms of structural deprivation. As predicted by hypothesis 4, the concentrated disadvantage index has a statistically significant negative effect on between county variations in the probability that violence will take an interracial form. Moreover, the disadvantage index is a significant predictor of between county variations in the likelihood the violence will be interracial above and beyond the effects of the incident level measures controlled for in the model. That is, after controlling for characteristics of the incidents themselves, communities with higher levels of poverty, unemployment, female headed households, low education, and the lack of health insurance have a decreased probability that violence will be interracial.

The log-odds coefficient for the disadvantage index is $-.444$, which, when exponentiated, indicates that a unit increase in the concentrated disadvantage index reduces the odds that violence will be interracial by a factor of $.64$. This negative effect provides comprehensive evidence in support of hypothesis 4. Moreover, it provides another layer of support for MSOT as well as the theoretical ties between MSOT and the social disorganization perspective as discussed in Chapter 2. Even after controlling for the likelihood of fortuitous interracial associations within the residential environment, communities in which whites and blacks are mired down by persistent and concentrated levels of structural resource deprivation are also likely to offer fewer opportunities for fortuitous interracial associations. When levels of disadvantage are concentrated within specific locales within the larger community, white and black residents are less likely to come into contact with one another throughout their social experience. That is, beyond the strict confines of their residential environment, blacks and whites are less likely to come into contact with one another as they perform their daily routines such as grocery shopping, going to school or work, or even when and where they venture for evening and weekend entertainment. Because it inhibits fortuitous interracial contact throughout the social landscape, the concentration of people who are in poverty, unemployed, lacking education and health insurance, and those who live in untraditional families, also decrease the likelihood that homicides, robberies, and aggravated assaults will be interracial in nature.

Hypothesis 7 predicts that residential stability will have a significant negative effect on between county variations in the probability that violence will be interracial. The residential stability measure is also included in the panel labeled primary explanatory measures and is another standardized index based on a principle components analysis. The measure includes two highly correlated measures that tap community levels of residential stability: the percentage of

the population that lived in the same house in 1995 and 2000 and the percentage of households that were owner occupied in 2000. As predicted, the standardized residential stability index has a negative and statistically significant effect on between county variations in the probability that violence will be interracial as opposed to intra-racial. The log-odds that violence will be interracial are decreased by approximately .151 for every unit increase in the residential stability index. The exponentiation of this coefficient indicates that a unit increase in the residential stability index reduces the odds that violence will be interracial by a factor of .86.

The negative effect of residential stability on between county variations in the likelihood that violence will be interracial provides comprehensive support for hypothesis 7. That is, the effect of residential stability is robust to the inclusion of the incident level control measures as well as the effects of population heterogeneity and concentrated disadvantage. The negative effect of residential stability also provides another layer of support for Blau's (1977) MSOT as well as the theoretical ties between MSOT and the systemic model of community attachment as outlined in Chapter 2. Communities in which residents tend to own their own homes and maintain the same household for multiple years are likely to experience lower levels of fortuitous interracial contact and thus experience a reduction in the likelihood that violence will be interracial. Residentially stable communities tend to be racially homogenous in terms of both the housing market and how and where residents spend their leisure time. In other words, residentially stable communities tend to become ethnic or racial enclaves and thus inhibit the likelihood that minority and majority group members will interact. As interracial interaction wanes, interracial associations of all sorts are reduced. Therefore, because it inhibits opportunities for fortuitous interracial contact, residential stability also decreases the likelihood that criminal violence will be interracial in nature.

Overall, each of the primary explanatory measures exhibits a significant association with the interracial violence in the hypothesized direction. Because residential racial heterogeneity, concentrated disadvantage, and residential stability are each significant predictors of interracial violence, MSOT and well as the theoretical interconnections between MSOT, social disorganization, and the systemic model are supported. It is also important that these effects retain their direction and significance levels controlling for the characteristics of victims, offenders, and events. Therefore, the full multilevel model provides resounding support for hypotheses 1, 4, and 7 and suggests that characteristics of the contextual environment impact the likelihood of interracial contact and, in turn, are significantly associated with variations between counties in the likelihood that violence will be interracial. Moreover, unlike some prior studies, the effects of characteristics of the contextual environment are not simply the result of community variations in the characteristics of the incidents that play out in a given community (Baumer et al 2003; Warner 2007).

Beyond the primary explanatory measures a host of contextual level control variables were entered into Model 2. These include: region, metropolitan status, the natural log of the population size, and the natural log of the index crime rate. These measures have been identified in previous ecological studies as strong correlates of violence and thus were included to be sure that the model was not under specified and that the results were robust to the inclusion of diverse characteristics of the contextual environment. The region variable is a binary indicator of whether a county is located in the Census defined Southern region. This measure exhibits a significant positive effect on between county variations in the probability that violence will be interracial. This indicates that violent incidents in Southern counties are more likely to be interracial than their counterparts in the northern, eastern, and western regions. In fact, the

exponentiation of the log-odds coefficient (.262) indicates that the odds of an incident being interracial are 1.30 times greater in Southern counties.

The metropolitan status measure is another binary indicator with those counties defined as metropolitan according to the rural - urban continuum codes coded one. This measure is not significant suggesting that, after controlling for the other contextual and incident level predictors, there is not a significant difference in the probability that violence will be interracial between metropolitan and non-metropolitan counties. The final two county level control measures included in Model 2 are the 2005 population size and the index crime rate, which were both converted to their natural logarithms. Population size has a significant and positive effect indicating that the probability that violence will be interracial becomes greater as a community's population size grows. In fact, a unit increase in the natural log of the population size is associated with an increase by a factor 1.24 in the odds that violence will be interracial. The natural log of the index crime rate is not significantly related to between county variations in the relative prevalence of interracial violence.

As for the effects of the incident level measures in the full multilevel model, each of the effects associated with the characteristics of victims, offenders, and events are consistent between models 1 and 2 and are thus robust to the inclusion of the contextual level measures. Therefore, model 2 indicates that incident and contextual level measures are only minimally impacted by the inclusion of predictors at various levels. The effects of victim's age, race, and gender are once again positive and significant while the victim's resident status is significantly negatively associated with the likelihood that violence will be interracial. The effect of the victim's race is reduced more than any other incident level measure, which may be an indication that the effect of this measure is somewhat dependent on one or more contextual level measures.

In other words, a cross level interaction between victim's race and a measure such as community levels of disadvantage may be evident in future research. While the effect is reduced, the exponentiation the log-odds coefficient of 1.960 indicates that the odds that a white victim, as compared to a black victim, will be involved in an interracial event are an incredible 7.10 times greater. The offender characteristics are also remarkably consistent across models. Male offenders are more likely to be involved in interracial violence while those suspected of using alcohol are less likely. Finally, the characteristics of the incidents themselves also retain their signs and significance with interracial violence being more likely to involve a gun but less likely to result in extensive victim injury.

Once again, a traditional R-Square or variance explained measure is not available with hierarchical nonlinear modeling techniques. However, it is possible to estimate the percentage of between county variation in interracial violence explained by the inclusion of the county level measures by comparing the intercept random effect variance components in model 1 (the level 1 model) and model 2 (the full model). To accomplish this it is necessary to calculate the ratio of the difference in the between county variance in models 1 and 2 to that in model 1. This calculation $([.388 - .259] / .388)$ indicates that approximately 33% of the between county variation in the likelihood that violence will be interracial is explained by the inclusion of the contextual level measures. Therefore, the inclusion of the primary and control predictors situated at the county level in the full multilevel model explains a substantial proportion of the between county variation in the relative prevalence of interracial as opposed to intra-racial violence. While 33% represents a substantial proportion of the between county variation there is still a significant amount of variation that is likely attributable to contextual level variables not

included in the analysis. Future research on interracial violence should thus explore a more diverse array of potential contextual level predictors.

While the full model indicates that 33% of the between county variation in the likelihood that violence will be interracial is explained by all of the predictor measures there is still the question as to what proportion of the explained variance is attributable to the characteristics of contextual environments included in the full model. Fortunately, the intra class correlation coefficient discussed above provides a means by which to decompose the variance components so as to answer this question. The random effect variance components are .259 for the intercept (between county variance) and 1.282 for level one (within county variance). By dividing the between county variation (.259) by the sum of the two variance components (1.541) it is possible to obtain the intra class correlation coefficient for Model 2. For the full nonlinear model, the intra class correlation coefficient is .17 indicating that about 17% of the between county variation in the probability that violence will be interracial is due to the characteristics of the contextual environment included in the model.

Summary

The models presented in Table 8 indicate that there is considerable variation between counties in the relative prevalence of interracial as compared to intra-racial homicide, robbery, and aggravated assault. Moreover, the results suggest that incident measures drawn from the NIBRS as well as the measures describing the contextual environment in which the crimes occurred explain a significant proportion of the between county variation in the relative prevalence of interracial violence. In fact, more than 33% of this variation is attributable to variation in the incident and contextual measures included in this analysis. The full model also provides a significant level of support for hypotheses 1, 4, and 7. Both concentrated

disadvantage and residential stability have strong negative effects while residential racial heterogeneity has a strong positive effect on the likelihood that violence will be interracial in nature. As such, there is substantial support for Blau's (1977) macro structural opportunity theory as well as the theoretical linkages between MSOT and the disorganization and systemic perspectives. Contextual environments that exacerbate the likelihood of fortuitous interracial associations, whether they occur within the residential environment or elsewhere in society, also increase the likelihood that violence, when it does occur, will be interracial.

CHAPTER 5: ANALYSES OF RACE SPECIFIC PATTERNS OF VIOLENCE

While the analyses presented in Chapter 4 explored the incident and contextual level predictors of interracial as opposed to intra-racial violence, the current Chapter presents a detailed exploration of the constituent components of the intra and interracial violence measures. Specifically, hierarchical nonlinear analyses of (1) black offender / black victim, (2) white offender / white victim, (3) black offender / white victim, and (4) white offender / black victim homicide, robbery, and aggravated assault will be presented.

As with the models in Chapter 4, the analyses focus on the impact of contextual environments on the relative prevalence of race specific forms of violence. However, the analyses are expanded in order to understand how contextual environments impact the likelihood of specific offender and victim race disaggregated forms of violence. The current multilevel analyses thus add to the literature on the ecological covariates of criminal violence by discerning the forms of violence that are relatively more prevalent in certain contextual environments. Moreover, the impact of contextual environments is highlighted after controlling for a number of victim, offender, and incident specific characteristics that are likely to vary in their prevalence across communities. These analyses of the between county variation in the probability of various race specific patterns of offending should provide another layer of support for hypotheses 1, 4, and 7. Further, the predictions laid out in hypotheses 2, 3, 5, 6, 8, and 9 in Chapter 2 will be comprehensively examined. The hypotheses tested in this Chapter include:

H2: Population heterogeneity will have a stronger positive relation to black offender white victim violence than white offender black victim violence.

H3: Population heterogeneity will have differential effects on the likelihood that violence will be black intra-racial as compared to white intra-racial

H5: Concentrated structural disadvantage will have similar effects on interracial violence perpetrated by whites and blacks.

H6: Concentrated structural disadvantage will have a stronger positive association to the probability that violence will be black intra-racial than white intra racial.

H8: Residential stability will have similar effects on interracial violence perpetrated by whites and blacks.

H9: Residential stability will have differential effects of the likelihood that violence will be black intra-racial as opposed to white intra-racial.

The analyses presented below were created using the same hierarchical nonlinear modeling techniques discussed in depth in Chapters 3 and 4. The race specific models also include the same structural and incident level measures as those analyzed in Chapter 4¹⁵. While all four models are presented in Table 9, the presentation of the results will proceed from a description of each individual model to a number of comparisons between models. First, the results for each of the four models will be discussed. Second, the two forms of interracial violence, white victim / black offender and black victim / white offender, will be compared. This comparison will allow for a detailed discussion of the findings on the effects of residential racial heterogeneity, concentrated disadvantage, and residential stability, which are pertinent to hypotheses 2, 5, and 8. Finally, the two forms of intra-racial violence, white victim / white offender and black victim / black offender, will be compared. Within this comparison, the predictions of hypotheses 3, 6, and 9 will be comprehensively examined.

Analysis

Intra-Racial Violence

White Victim / White Offender Violence

The results of the nonlinear hierarchical models predicting the likelihood that a homicide, robbery, or aggravated assault will involve both a white victim and offender are presented in

¹⁵ While the analyses of interracial forms of violence include an aggregate concentrated disadvantage measure, the disaggregated forms of intra-racial violence include race specific concentrated disadvantage measures that tap the extent of either white or black structural resource disadvantage.

model 1 of Table 9¹⁶. Only the full model is presented in Table 9, however, the model containing only the incident level measures is provided in the appendix. The coefficients are again log-odds coefficients, however, an exponential transformation can be performed thus allowing for an interpretation in terms of a change in the odds that a violent event will have both a white victim and offender. While only the results of the full multilevel analysis are presented in Table 9, a few observations from the unconditional model for white intra-racial violence, which is not presented, deserve mentioning. Specifically, the unconditional model provides information regarding the amount of observed variation between counties in the probability that a violent criminal incident will be a white intra-racial event. The intercept term in the unconditional model is 1.767 and, when transformed using equation (4) from Chapter 4, indicates that the average probability that violence will be white intra-racial across counties is .85. This is consistent with the results for the full sample presented in Table 4 in Chapter 3 and suggests that about 85% of homicides, robberies, and aggravated assaults reported to participating NIBRS police agencies in 2005 involved white victims and white offenders.

The intercept (between county) and level 1 (within county) random effect variance components in the unconditional model also provide useful information. The random effect components are 2.720 for the intercept (between county variation) and .960 for level 1 (within county variation). By dividing the between county variation (2.720) by the sum of the two variance components (3.680) it is possible to obtain the intra class correlation coefficient. This coefficient provides a gauge of the percentage of variation in the probability that violence will be white intra-racial that can be attributed to characteristics of the contextual environment. The results suggest that approximately 74% of the variation in the relative prevalence of white intra-

¹⁶ All models were created with version 6.06 of the HLM software utilizing full maximum likelihood estimation techniques and the over dispersion parameter. All results are based on the unit specific model with robust standard errors.

racial violence between counties is due to contextual level factors. The unconditional model thus provides evidence that the contextual environment in which violence occurs plays a vital role in determining its racial patterning.

Now that it has been established that there is considerable variation between counties in the likelihood that violence will be white intra-racial and that such variation is largely due to variation in the characteristics of contextual environments, the focus of attention turns to the full model in column 1 in Table 9. The results are based on 80,422 criminal incidents that were reported to the NIBRS in 2005 across 881 U.S. counties. The model reliability estimate is .468, which highlights considerable variability between counties in the relative prevalence of white intra-racial violence. The value of the intercept term is 9.356, which is substantially higher than that for the unconditional model and is an indication that the measures included in the model explain a considerable proportion of the between county variation in white intra-racial violence.

Next, I address the results for the primary contextual level explanatory measures: residential racial heterogeneity, concentrated disadvantage, and residential stability. Hypothesis 1 predicts that racial heterogeneity increases the opportunity for fortuitous interracial associations and thus should be positively associated with interracial violence. Conversely, racial heterogeneity should be negatively associated with the likelihood that violence will be white intra-racial. The significant and negative log-odds coefficient for the P* index of residential racial heterogeneity or racial integration supports this prediction. In those communities with residential environments in which whites and blacks are more likely to come into contact violence is less likely to involve a victim and offender who are both white. The exponentiation of the log-odds coefficient (-.094) suggests that a unit increase (11%) in the P* index of residential racial integration is associated with a decrease by a factor of .91 in the odds

that a violent criminal event will be white intra-racial. This finding provides indirect support for hypothesis 1 as well as macro structural opportunity theory (MSOT).

Hypothesis 4, which was supported by the results presented in Chapter 4, stipulates that concentrated disadvantage should undermine opportunities for fortuitous interracial associations and thus reduce the likelihood that violence will be interracial. Conversely, we would expect levels of concentrated disadvantage among whites to be positively associated with white intra-racial violence. The positive and significant log-odds coefficient of .304 supports this expectation and indicates that structural resource deprivation as experienced by whites increases the probability that violence will involve victims and offenders who are both white. The exponentiation of this log-odds coefficient indicates that a unit increase in the structural disadvantage index increases the odds that a violent event will be white intra-racial by a factor of 1.36. This provides an additional layer of support for hypothesis 4 as well as the theoretical ties between the social disorganization perspective and MSOT as explicated in Chapter 2. In undermining opportunities for interracial associations, concentrated disadvantage among whites increases the odds that violence will involve white victims and white offenders.

The final primary contextual level explanatory measure is the residential stability index. Hypothesis 7 indirectly stipulates that, much like concentrated disadvantage, residential stability inhibits interracial associations and thus should be positively associated with between county variations in white intra-racial violence. Again, the positive and significant log-odds coefficient supports this hypothesis indicating that where residents tend to own their own homes and maintain their residence over time white intra-racial violence is relatively more prevalent. The exponentiation of the log-odds coefficient (.137) suggests that a unit increase in the residential stability index is associated with an increase by a factor of 1.15 in the odds that violence will be

white intra-racial. This indirectly supports hypothesis 7 and the theoretical ties between the systemic model of community attachment and MSOT as explicated in Chapter 2. Residentially stable communities tend to offer fewer opportunities for fortuitous interracial associations and thus increase the likelihood that violence, when it does occur, will involve only white actors.

The contextual level control measures also exhibit a number of significant associations with variation between counties in the likelihood that violence will be white intra-racial. The effect of the region measure is negative and quite strong indicating that white intra-racial violence is less prevalent as compared to other forms of violence in Southern counties. The log-odds coefficient of $-.413$, when exponentiated, indicates that the odds that a violent crime will be white intra-racial decrease by a factor of $.66$ in Southern counties as compared to their counterparts in the northern, eastern, and western regions. A county's metropolitan status has no effect on this pattern of violence, however, the size of a county's population has a strong negative effect. A unit increase in the natural log of a county's population size is associated with a decrease by a factor of $.63$ in the likelihood that an incident will involve a white victim and white offender. The natural log of the index crime rate also exhibits a significant negative effect on the likelihood of white intra-racial violence. This suggests that as a county's index crime rate increases white intra-racial violence becomes relatively less prevalent.

A number of incident level control measures are also significant predictors of the likelihood that violence will be white intra-racial. The victim characteristics indicate that the victims of white on white violence tend to be older but are less likely to be residents of the community in which the crime occurred. However, there are no significant differences in victim gender. Indicators of characteristics of offenders in white intra-racial events suggest that offenders are more likely to be male and under the influence of alcohol. In fact, the log-odds of

being involved in white on white violence are increased by .615 for offenders under the influence of alcohol. The exponentiation of this coefficient indicates that the odds that violence will involve two white actors are 1.85 times greater when the offender is suspected of being under the influence of alcohol. Finally, guns are much less likely to be used in white intra-racial crimes reported to the police but there are no significant differences in the extent of victim injury.

Again, a traditional R-Square or variance explained measure is not available with hierarchical nonlinear modeling techniques (Luke 2004). However, it is possible to estimate the percentage of between county variation in the likelihood that an incident will involve a white victim and white offender explained by all of the predictor measures. This is calculated as the ratio of the difference in the between county variance in the level 1 only and the full models. The level 1 model is provided in the appendix. This calculation $([2.752 - .767] / 2.752)$ indicates that approximately 72% of the variation across counties in the likelihood that violence will be white intra-racial is explained by the introduction of the contextual level measures in the full model. In comparison to the variance explained in the full interracial model presented in Chapter 4 (33%), the predictors explain a considerably greater proportion of the between county variation in white on white violence.

While the full model indicates that 72% of the variation between counties in the likelihood that violence will be white intra-racial is explained by the full model, we must also address the question of what proportion of this explained variance is attributable to the characteristics of contextual environments. Fortunately, the intra class correlation coefficient allows for the decomposition of the variance components to answer this question. The random effect variance components are .767 for the intercept (between county variance) and .960 for level one (within county variance). The intra class correlation coefficient is obtained by dividing

the between county variation (.767) by the sum of the two variance components (1.727). The intra class correlation coefficient is .44 indicating that approximately 44% of the variation between counties in the probability that violence will involve both a white victim and offender is due to the specific characteristics of the contextual environment controlled for in this study.

Black Victim / Black Offender Violence

The results of the nonlinear hierarchical models predicting the likelihood that violence will be black intra-racial are presented in model 2 of Table 9. Only the full model is presented in Table 9, however, the incident level model is provided in Table A1 in the appendix. The intercept term in the unconditional model, which is not presented, is -2.777 and, when transformed using equation (4) from Chapter 4, indicates that the average probability that violence will be black intra-racial across counties is only .06 or 6%. This is less than the county level mean of .114 for the full sample presented in Table 4 in Chapter 3 but none the less suggests that only a minority of homicides, robberies, and aggravated assaults reported to participating NIBRS police agencies in 2005 involved black victims and black offenders. The random effect components for the unconditional model are 3.238 for the intercept (between county variation) and .926 for level 1 (within county variation). The intra class correlation coefficient for this model thus indicates that approximately 78% of the variation in the likelihood that violence will be black intra-racial across counties can be attributed to contextual level factors. Once again, there seems to be strong evidence that the contextual environment in which violence occurs plays a vital role in determining its racial patterning. While black on black violence does not comprise a large proportion of those criminal events reported to the NIBRS in 2005, the majority of the between county variation in this form of violence is attributable to characteristics of the contextual environment in which the crime occurred.

The full nonlinear multilevel model is presented in model 2 of Table 9. The results are based on 79,547 homicides, robberies, and aggravated assaults reported to police agencies participating in the NIBRS program in 2005 across 760 U.S. counties¹⁷. The reliability estimate for this model is .420 highlighting considerable variability between counties in the likelihood of black on black violence. The value of the intercept term is -10.387, which is substantially larger in absolute terms than the intercept term in the unconditional model. This change is indicative of the contextual and incident level measures explaining a considerable proportion of the between county variation in black intra-racial violence.

The effects of the primary contextual level explanatory measures appear near the top of Model 2. While hypothesis 1 focuses on interracial violence, an extension of the hypothesis is that racial heterogeneity or integration should decrease the likelihood that violence will be black intra-racial due to an increase in opportunities for whites and blacks to interact with one another. Therefore, the P* residential racial integration measure should be negatively associated with the likelihood that violence will be black on black. The effect of this measure however is significant and positive in the full black intra-race violence model. The log-odds coefficient is .103, which, when exponentiated, suggests that a unit increase in racial heterogeneity increases the odds that a violent criminal event will be black intra-racial by a factor of 1.11. Apparently, violent crimes than occur in residential environments that encourage fortuitous interracial associations are more rather than less likely to involve a victim and offender who are both black. This finding provides a nominal level of evidence in contention to hypothesis 1 and MSOT. However, this finding also provides an initial level of evidence that black and white intra-racial violence are differentially

¹⁷ The measures needed to create an index of concentrated black disadvantage were not available for all counties and thus fewer counties and incidents are included in the analysis of black on black violence.

impacted by characteristics of the contextual environment. Such differentiation was hypothesized and will be discussed below.

Hypothesis 4 predicts that concentrated disadvantage undermines opportunities for fortuitous interracial associations thereby reducing the likelihood of interracial violence. By extension, level of concentrated disadvantage among blacks should have a positive effect on the likelihood that violence will be black intra-racial. Supporting this extension, the standardized concentrated disadvantage index that taps black resource deprivation does indeed have a positive, strong, and statistically significant association with between county variations in the likelihood that violence will be black intra-racial. The log-odds coefficient is .777, which is one of the strongest effects in the model. The exponentiation of this coefficient indicates that a unit increase in the structural resource disadvantage experienced by blacks increases the odds that a crime will involve a black victim and offender by a factor of 2.17. While black intra-racial violence is relatively rare in the NIBRS data, violent crime in structurally disadvantaged communities is much more likely to take this specific racial pattern. This finding indirectly supports hypothesis 4 and provides another layer of support for the theoretical ties between social disorganization and MSOT as explicated in Chapter 2. More importantly, the effect of black disadvantage on black intra-racial violence (.777) is considerably stronger than the effect of white disadvantage on white intra-racial violence (.304). This provides an initial level of support for hypothesis 6, however, a statistical test is required in order to assess the significance of this difference. Such a statistical test is provided below.

The final primary contextual level explanatory measure is again the residential stability index. By extension, hypothesis 7 predicts that residential stability inhibits interracial associations and thereby should have a positive association with between county variations in

violence involving both a black victim and offender. While the standardized residential stability index performed as expected in the white intra-racial model (positive and significant), it is not significantly associated with variations in the relative prevalence of black intra-racial violence. Apparently, increased levels of home ownership and decreased levels of residential turnover fail to impact the likelihood that violence will involve black victims and offenders. While not a complete test, this finding provides an initial layer of support for differentiation in the contextual level predictors of white and black intra-racial violence, especially as outlined in hypothesis 9.

Beyond the primary explanatory measures, the contextual level controls are also entered into the model predicting variation between counties in the likelihood of black intra-racial violence. The region measure has a strong, significant, and positive effect with a log-odds coefficient of .581. The exponential of this coefficient suggest that the odds of that violence will be black intra-racial are 1.79 times greater in Southern counties as compared to their counterparts in other regions. Population size has a similar effect with a positive and significant log-odds coefficient of .518 suggesting that increases in the population size have a dramatic positive impact on the probability that violence will involve black victims and offenders. Conversely, a county's metropolitan status and index crime rate do not significantly impact between county variations in the likelihood that violence will involve only black actors.

Moving on to the incident level control measures, each of the characteristics of victims, offenders, and incidents exhibit a statistically significant association with the likelihood that violence will be black intra-racial. The victim characteristics indicate that the victims of black on black violence tend to be younger, are less likely to be male, and are more likely to be residents of the community in which the crime occurred. In fact, the resident status measure has a log-odds coefficient of .859, which indicates that the odds that violence will be black

Table 9: Race Specific Models

		Model 1 (WvWo)	Model 2 (BvBo)	Model 3 (WvBo)	Model 4 (BvWo)
	Reliability Est.	.468	.420	.319	.144
	Intercept	9.356** (.793)	-10.387** (.996)	-7.382** (.927)	-5.986** (.925)
Primary Measures					
	Racial Residential Heterogeneity	-.094** (.005)	.103** (.004)	.032** (.004)	.023** (.004)
	Concentrated Disadvantage	.304** (.091)	.777** (.178)	-.457** (.104)	-.341** (.090)
	Residential Stability	.137* (.059)	-.118 (.073)	-.152** (.050)	-.111* (.046)
Contextual Controls					
	County in South	-.413** (.111)	.581** (.131)	.345** (.088)	.121 (.096)
	Metropolitan County	.114 (.103)	.020 (.123)	-.018 (.098)	-.128 (.107)
	Population Size (NL)	-.457** (.058)	.518** (.077)	.256** (.044)	.154** (.044)
	Crime Rate (NL)	-.250* (.102)	.119 (.122)	.181 (.131)	.032 (.125)
Victim Characteristics					
	Age of Victim	.005** (.001)	-.011** (.001)	.011** (.002)	-.009** (.002)
	Male Victim	.039 (.032)	-.304** (.060)	.225** (.077)	.626** (.045)
	Community Resident	-.183** (.073)	.859** (.196)	-.735** (.191)	-.081 (.067)
Offender Characteristics					
	Male Offender	.198** (.029)	-.667** (.035)	.906** (.057)	-.151+ (.082)
	Suspected of Using Alcohol	.615** (.042)	-.334** (.051)	-.705** (.055)	-.128+ (.073)
Event Characteristics					
	Gun was used	-.632** (.052)	.558** (.040)	.008 (.046)	-.074 (.062)
	Victim Injury	-.020 (.018)	.197** (.025)	-.219** (.038)	-.184** (.039)
N		80,422 881	79,547 760	80,422 881	80,422 881
Random Effect Variance Component (Intercept)		.767 (.876)	.859 (.927)	.406 (.637)	.195 (.441)
R.E.V.C (Lev 1)		.960 (.980)	.949 (.974)	.977 (.988)	.943 (.971)

Robust Standard Errors in Parentheses **p ≤ .01 *p ≤ .05 +p ≤ .10

interracial are 2.36 times greater for community residents than non-residents. While the effects of victim age and resident status confirm expectations, it was unforeseen that black intra-racial events would be more likely to involve female victims than other racial patterns of violence. This tends to dispute a strong literature documenting an epidemic of male on male black violence, however, the errant finding is likely to be due to the focus on officially reported violence. That is, much black intra-racial violence tends to go unreported due to the lack of trust or a belief in the legitimacy of formal social control agents, cultural values that devalue reporting, criminal activity by the victim and the belief that the offense was not severe enough to report (Hindelang 1978; Elliot and Ageton 1980; Braithwaite 1981; Wright and Decker 1997; Anderson 1999). Indicators of offender characteristics suggest that offenders in black intra-racial events reported to the police are more likely to be female but less likely to be suspected of being under the influence of alcohol. Again, the unexpected finding for offender gender is likely the result that the NIBRS data describe only those violent criminal events that were reported to the police. Finally, guns are much more likely to be used in black intra-racial crimes reported to the police and the victims of this form of violence are more likely to suffer extensive injuries. Once again, these results are intuitive in that crimes involving weapons and extensive victim injury are also those that are more likely to be reported to authorities.

In order to provide an estimate of the percentage of between county variation in the likelihood that violence will involve a black victim and black offender that is explained by the full model it is necessary to calculate the ratio of the difference in the between county variance in the level 1 only model, which is provided in the appendix, and the full model. This calculation $([3.296 - .859] / 3.296)$ indicates that approximately 74% of the variation across counties in the likelihood that violence will be black intra-racial is explained by the incident and contextual

level measures in the full model. This is much greater than the variance explained in the full interracial model presented in Chapter 4 (33%) and almost exactly the same as that for the white intra-racial model (72%). Overall, the incident and particularly the contextual level predictors considered in this analysis explain a considerable proportion of the variation across counties in the likelihood that violence will involve a black victim and a black offender.

While the full nonlinear hierarchical model explains 74% of the variation across counties in the relative prevalence of black intra-racial violence, it is also necessary to know what proportion of this explained variance can be attributed to the county level measures. Again, the intra class correlation coefficient allows for the decomposition of the variance components to address this question. The random effect variance components are .859 for the intercept (between county variance) and .949 for level one (within county variance). Based on these values, the intra class correlation coefficient for the full model is .48 indicating that approximately 48% of the between county variation in the probability that violence will involve a black victim and a black offender is due to the characteristics of the contextual environment in which the violent criminal event occurs.

Interracial Violence

White Victim / Black Offender Violence

The results of the nonlinear hierarchical analyses of interracial homicide, robbery, and aggravated assault are also presented in Table 9 with the results for the analysis of violence involving white victims and black offenders displayed in Model 3. Only the full model is presented in Table 9, however, the incident level model is provided in Model 3 in the appendix. Before discussing the full model a few observations from the intercept only model, which is not presented, deserve mentioning. The intercept term in the unconditional model is -2.569 and,

when transformed using equation (4) from Chapter 4, indicates that the average probability that violence will involve white victim and black offender across counties is only .07 or 7%. This is slightly greater than the county level mean of .064 reported for the full sample and suggests that a relatively small proportion of all crimes in the sample involved white victims and black offenders. The random effect variance components for the unconditional model are .571 for the intercept (between county variation) and .957 for level 1 (within county variation). The intra class correlation coefficient is obtained by dividing the between county variation (.571) by the sum of the two variance components (1.528). Approximately 37% of the variation in the likelihood that violence will involve a white victim and a black offender across counties is due to contextual level factors. Once again, the results provide strong evidence that county level factors play a vital role in determining the racial patterning of violence.

The results of the complete analysis are presented in Model 3 of Table 9 and are based on 80,422 reported homicides, robberies, and aggravated assaults covering 881 U.S. counties. The reliability estimate for the model is .319 indicating that there was considerable variability between counties in the likelihood that violence would involve a white victim and black offender in the participating communities. The value of the intercept term for the full model is -7.382, which is substantially larger in absolute terms than the intercept term in the unconditional model. This absolute increase is indicative of strong associations between the contextual and incident level measures and variation between counties and this form of interracial violence.

Analyses of the association between the primary explanatory measures and this form of interracial violence provide yet another means by which to gauge the strength of the predictions set forth in hypotheses 1, 4, and 7. Once again, the P* index of residential racial heterogeneity or racial integration allows for a further test of hypothesis 1. Hypothesis 1 predicts that racial

heterogeneity leads to an increase in opportunities for fortuitous interracial associations and should thus be positively associated with interracial violence. The significant and positive log-odds coefficient (.032) for the racial heterogeneity measure supports this expectation.

Residential environments conducive to an increase in interracial interaction experience an increase in the likelihood that violence, when it does occur, will involve a white victim and a black offender. The exponentiation of the log-odds coefficient suggests that a unit increase (11%) in this racial integration measure is associated with an increase by a factor of 1.03 in the odds that a homicide, robbery, or aggravated assault will be interracial and of this specific racial pattern. This finding, while modest, supports hypothesis 1 and MSOT. Residential integration increases all forms of interracial associations only one of which is interracial violence.

According to hypothesis 4, concentrated structural disadvantage undermines opportunities for fortuitous interracial associations thereby reducing the likelihood of interracial violence including white victim / black offender crimes. The negative and significant log-odds coefficient of -.457 supports this expectation indicating that structural resource deprivation decreases the probability that violence will involve white victims and black offenders. The exponentiation of this log-odds coefficient indicates that a unit increase in the comprehensive structural disadvantage index decreases the odds that a violent event will be interracial in this specific pattern by a factor of .63. This provides yet another layer of support for hypothesis 4 and the theoretical ties between social disorganization and MSOT. Moreover, the negative association between disadvantage and black offender / white victim violence confirms the findings for the full interracial model presented in Chapter 4. In undermining opportunities for interracial associations, concentrated disadvantage decreases the odds that violence will be interracial in this specific form.

Rounding out the primary contextual level explanatory measures is the residential stability index, which allows for a further test of hypothesis 7. Hypothesis 7 proffers that residential stability inhibits interracial associations and should thus have a negative association with white victim / black offender violence. The negative and significant log-odds coefficient of $-.152$ for the residential stability index supports this prediction. Counties in which a greater proportion of homes are inhabited by residents who own their home and where residents tend to maintain their residence for extended periods are relatively less likely to experience this form of interracial violence. The exponentiation of the log-odds coefficient suggest that a unit increase in the standardized residential stability index is associated with an decrease by a factor of $.86$ in the odds that violence will involve a white victim and black offender. This reinforces the predictions set forth in hypothesis 7 and highlights the theoretical ties between the systemic model of community attachment and MSOT. Moreover, the significant negative effect of residential stability bolsters the similar results presented in the analysis of all interracial violence presented in Chapter 4. The underlying mechanism at work in this situation is posited to be that residentially stable communities tend to offer fewer opportunities for fortuitous associations between whites and blacks and thus decrease the likelihood that violence will be interracial, regardless of the specific racial patterning.

Beyond the primary contextual factors the contextual level control measures also exhibit a number of significant associations with variation in the between county likelihood the violence will involve a white victim and black offender. The effect of the region measure is positive and significant indicating that this form of interracial violence is relatively more prevalent in Southern counties. The log-odds coefficient of $.345$, when exponentiated, indicates that the odds that a violent crime will be white intra-racial are 1.41 times greater in southern counties. A

county's metropolitan status has no effect on this interracial pattern of violence, however, the size of a county's population has a statistically significant positive effect. A unit increase in the natural log of a county's population size is associated with an increase by a factor of 1.29 in the odds that an incident will involve a white victim and black offender. The natural log of the index crime rate has no effect in this model.

Moving on to the incident level measures, all but one of the characteristics of victims, offenders, and incidents exhibit a statistically significant association with the likelihood that violence will be of this specific pattern of interracial violence. The white victims of black offenders are more likely to be older, males, and non-residents of the community in which the crime occurred. Resident status has a very strong effect and the exponential of the log-odds coefficient (-.735) suggests that the odds of being the victim of this form of violence are reduced by a factor of .48 for non-residents as compared to residents. In terms of offender characteristics, black offenders who victimize whites are overwhelmingly more likely to be male but significantly less likely to be under the influence of alcohol during the commission of their violent crime. Finally, the use of guns measure is not a significant predictor of this form of interracial violence, which likely plays a role in the finding that the white victims of black offenders suffer significantly less extensive injuries during their victimization.

To estimate the proportion of variation between counties in the relative prevalence of white victim / black offender violence that is explained by the full model it is necessary to obtain the ratio of the difference in the between county variance in the incident level and the full models. The incident level model is provided in model 3 in the appendix. This calculation $([.579 - .406] / .579)$ indicates that approximately 30% of the between county variation in the likelihood that violence will involve a white victim and black offender is explained by the

combination of incident and contextual level measures included in the full multilevel model. In comparison to the variance explained in the full interracial model presented in Chapter 4 (33%), the predictors explain a roughly equal proportion of the variation between counties in this form of interracial violence.

While 30% of the between county variation in this form of interracial violence is explained by the full combination of predictors included in the full multilevel model, we must also calculate what proportion of this explained variance is due to characteristics of the contextual environment. In the full model, the random effect variance components are .406 for the intercept (between county variance) and .977 for level one (within county variance). As such, the intra class correlation coefficient for the full model is .29. This suggests that approximately 29% of the explained between county variation in the probability that violence will involve a white victim and a black offender is due to the specific characteristics of the contextual environment included in this study. This value (29%) is much larger than the 17% reported for total interracial violence in Chapter 4 and suggests that these specific contextual level measures may have a somewhat stronger relation to white victim as compared to black victim interracial violence.

Black Victim / White Offender Violence

The final race specific pattern of violence examined in this chapter is that of interracial violence that involves a black victim and a white offender. The results of the full nonlinear hierarchical analysis are presented in Model 4 of Table 9. Only the full model is presented in Table 9 while the model including only incident level predictors is provided in Model 4 in the appendix. Once again, a few observations from the intercept only model, which is not presented, deserve mentioning. The reliability estimate of the unconditional model is .165, which is the

first model that fails to meet the traditional cutoff of .20. However, in supplemental analyses of only those counties with at least 1,000 black residents the reliability estimate was greater than .20. There are no substantive differences between the results presented and those derived from an analysis of only those counties with a black population threshold of 1,000. Because there are no substantive differences in the results, the models that include substantially more counties are presented. The intercept term in the unconditional model is -3.664. When transformed using equation (4) from Chapter 4, this indicates that the average probability that violence will involve a black victim and white offender across counties is only .025 or 2.5%. This is only slightly higher than the county level mean in the full sample of .018 and suggests that an extremely small proportion of violent crimes reported to participating NIBRS police agencies in 2005 involved black victims and white offenders. The random effect components for the unconditional model are .189 for the intercept (between county variation) and .949 for level 1 (within county variation). The intra class correlation coefficient thus suggests that approximately 17% of the variation in the probability that violence will involve a black victim and white offender across counties is due to contextual level factors.

The full nonlinear multilevel model predicting variation across counties in black victim / white offender violence is presented in Model 4 of Table 9. The results are again based on 80,422 reported homicides, robberies, and aggravated assaults within 881 U.S. counties. The reliability estimate for the model is again low at only .144. The results from the sample restricted to only those counties with at least 1,000 blacks were substantively similar and the reliability estimate in that model was greater than .20 therefore the results for the full sample are presented. The value of the intercept term for the full model is -5.986 and is slightly larger in absolute terms than in the unconditional model. This increase indicates the potential of

statistically significant associations between the contextual and incident level measures and variation between counties in this form of interracial violence.

Once again, the results of this analysis provide another means by which to gauge the strength of the predictions set forth in hypotheses 1, 4, and 7. The inclusion of the residential racial heterogeneity or racial integration measure provides yet another test of hypothesis 1, which predicts that racial integration leads to an increase in opportunities for interracial interaction and, by extension, interracial violence. The significant and positive log-odds coefficient for the racial heterogeneity measure (.023) supports this expectation. Specifically, communities with residential environments conducive to an increase in interracial interactions experience an increase in the likelihood that violence will involve a black victim and white offender. The exponentiation of this coefficient suggests that a unit increase (11%) in the residential racial heterogeneity measure is associated with an increase by a factor of 1.02 in the odds that a violent crime will be interracial of this specific racial pattern. While modest, this finding supports hypothesis 1 and MSOT. As predicted, ecological features that increase opportunities for interracial associations of all sorts also increase the probability that violence will involve black victims and white offender.

Hypothesis 4 states that concentrated structural disadvantage should be negatively related to interracial violence due to the limiting of opportunities for interaction among whites and blacks. The results support this prediction with a negative and significant log-odds coefficient of -.341. While slightly weaker than in the white victim and full interracial models, this finding suggests that structural resource deprivation decreases the probability that violence will involve black victims and white offenders. The exponentiation of this coefficient indicates that a unit increase in the standardized total disadvantage index decreases the odds that violence will

involve a black victim and white offender by a factor of .71. This supports hypothesis 4 as well as the potential for theoretical ties between social disorganization and MSOT. Also, as predicted by hypothesis 5, structural disadvantage consistently has a negative association with total as well as each of the race specific forms of interracial violence. In undermining opportunities for interracial associations of all types, concentrated disadvantage decreases the odds that violence will be interracial in this specific form.

Rounding out the analyses of the primary contextual level explanatory factors is the residential stability index. Hypothesis 7 predicts that residential stability limits the potential for interracial associations thereby decreasing the likelihood that violence will be interracial. The negative and significant log-odds coefficient of $-.111$ for the standardized residential stability index supports this prediction indicating that counties with higher levels of home ownership and lower levels of population turnover are relatively less likely to experience interracial violence involving black victims and white offenders. Exponentiating this coefficient suggests that a unit increase in the residential stability index is associated with a decrease by a factor of .89 in the odds that violence will involve a black victim and white offender. Both hypothesis 7 and the theoretical integration of the systemic model and MSOT are supported. Moreover, hypothesis 8 receives an initial layer of support due to the consistency of the association between residential stability and total as well as the race specific forms of interracial violence. Residentially stable communities offer limited opportunities for interracial associations and thus experience a reduced likelihood that violence will take this specific interracial pattern.

The results for the contextual level control measures are presented directly below those for the primary explanatory measures. In contrast to the results for both intra-racial forms of violence and white victim interracial violence, the effect of the region measure does not attain

significance. This suggests that black victim / white offender violence is no more or less likely in Southern counties. Consistent with the other race specific patterns of violence, a county's metropolitan status and index crime rate also fail to attain statistical significance in their association with this form of interracial violence. On the other hand, the size of a county's population has a statistically significant and positive effect on the likelihood that violence will involve a black victim and white offender. A unit increase in the natural log of a county's population size is associated with an increase by a factor of 1.17 in the likelihood that an incident will involve a white victim and black offender. However, this effect is unstable and is reduced to insignificance when the sample of counties is restricted to only those with at least 1,000 black residents. Overall, there is a pattern of insignificance among the contextual control measures and the relative prevalence of white offender / black victim violence. This is enlightening as these measures tend to be strong correlates of crime rates and other race disaggregated patterns of violence. This however bolsters the results from the unconditional model that suggest that characteristics of the contextual environment explain only a small proportion (17%) of the between county variation in this form of violence. Moreover, these results underscore the importance of examining race specific patterns in the nature of violence.

Unlike the county level controls, a number of the incident level measures significantly impact the likelihood that violence will involve a black victim and white offender. The black victims of white offenders, as compared to other racially disaggregated forms of violence, tend to be younger and are more likely to be male. In fact, the log-odds that violence will take this interracial form are increased by .626 for male victims. The exponentiation of this coefficient suggests that the odds of this form of violence are 1.87 times greater for male as compared to female victims. The resident status of the victim has no effect on this form of violence. As for

offender characteristics, white offenders who victimize blacks are more likely to be female but less likely to be under the influence of alcohol. However, the effect of the offender's alcohol use measure is unreliable as the effect is reduced to statistical insignificance when only counties with at least 1,000 blacks are included in the analysis. The results for offender gender are not necessarily intuitive but are likely the result of the fact that the analyses only consider crimes reported to the police. Finally, guns are no more or less likely to be used in this form of violence, which likely plays a role in the finding that black victims of white offenders tend to suffer less extensive injuries during their victimization.

To estimate the proportion of variation between counties in black victim / white offender violence that is explained by the full model it is necessary to obtain the ratio of the difference in the between county variance in the incident level and the full model. The incident level model is provided in Model 4 in the appendix. This calculation $(.208 - .195) / .208$ indicates that approximately 6.25% of the between county variation in the relative prevalence of this form of interracial violence is explained by the combination of incident and contextual level measures included in the full model. In comparison to the variance explained in the full interracial model (33%) and the white victim / black offender model (30%), the combination of all predictors included in the full model explain a considerably lower proportion of the between county variation in black victim / white offender violence.

While only 6.25% of the between county variation is explained by the combination of predictors, we must also calculate the intra class correlation coefficient to ascertain what proportion of the explained variation can be attributed to the county level factors controlled for in this study. In the full model, the random effect variance components are .195 for the intercept (between county variance) and .943 for level one (within county variance). As such, the intra

class correlation coefficient for the full model is .17. This suggests that approximately 17% of the explained variation between counties in the probability that violence will involve a white victim and a black offender is due to the specific county level predictors included in this study. This value (17%) is exactly in line with the comparable value for total interracial violence analysis presented in Chapter 4 but less than that for the white victim / black offender analysis (29%). Once again, this suggests that these specific contextual level measures may have a somewhat stronger relation to white victim as compared to black victim interracial violence.

Model Comparisons

Interracial Violence

While the above analyses of the four distinct varieties of violence between whites and blacks provide resounding and almost universal support for the hypotheses regarding the effects of the primary explanatory measures, the remainder of the hypotheses to be tested call for comparisons between the effects of the primary contextual measures in the intra and interracial analyses. Hypotheses 2, 5, and 8 pertain to potential differences in the strength of the effects between the white offender and black offender interracial violence models while hypotheses 3, 5, and 9 predict variation in contextual effects between the intra-racial models. The current section provides a comprehensive test of hypotheses 2, 5, and 8, which include:

H2: Population heterogeneity will have a stronger positive relation to black offender / white victim violence than white offender / black victim violence.

H5: Concentrated structural disadvantage will have similar effects on interracial violence perpetrated by whites and blacks.

H8: Residential stability will have similar effects on interracial violence perpetrated by whites and blacks.

While hypotheses 5 and 8 predict that structural disadvantage and residential stability will have similar effects on both forms of interracial violence, hypothesis 2 highlights a potential

difference in the strength of the association between residential racial heterogeneity and black versus white offender interracial violence. Racial heterogeneity should lead to an increase in opportunities for blacks and whites to interact with one another and should thus have a positive effect on both forms of interracial violence. However, there is reason to expect that residential racial heterogeneity will have a stronger impact on black offender / white victim as compared to white offender / black victim violence. Whites, as the majority racial group, tend to have more options available to them in terms of limiting their interactions with non-whites if they so choose. In doing so, they indirectly limit the probability that they will become victims of violence perpetrated by blacks. However, in a racially heterogeneous residential environment white victims of violence may experience a precipitous increase in the likelihood that their perpetrators are black.

Before delving into statistical comparisons between the coefficients for the primary contextual factors in the two interracial models, a few general observations are in order. Once again, the results of the interracial analyses appear in models 3 and 4 in Table 9. The results of both models are based on 80,422 homicides, robberies, and aggravated assaults across 881 counties. However, these two forms of interracial violence are not equally prevalent across counties. The average likelihood across counties that an incident will involve a white victim and black offender is .064 whereas the average likelihood of black victim / white offender violence is only about .018. Substantively, this indicates that across the counties in the analysis approximately 6.5% of reported violent incidents are interracial with a black offender while only about 2% are interracial with a white offender. Therefore, while interracial violence comprised only a minority of all criminal incidents reported to participating NIBRS agencies in 2005, violent interracial incidents involving a white offender were particularly rare.

As predicted, in both interracial analyses the standardized total concentrated disadvantage and residential stability indices exhibit statistically significant negative effects. Residentially stable and structurally disadvantaged environments reduce the likelihood that violence will be interracial, regardless of the racial patterning of the victim and offender. However, the coefficients in the black victim / white offender analysis are notably smaller than their counterparts in the white victim / black offender model. The effect of the residential stability index in the black victim / white offender model is statistically significant at the .05 level whereas this measure attains the more stringent .01 level in the white victim / black offender analysis. The direction of the effect of the P* index of residential racial heterogeneity is also consistent across the interracial analyses. However, as predicted, the measure seems to have an attenuated effect on interracial violence involving black victims and white offenders. Overall, this general comparison between the interracial models provides a nominal level of support for hypotheses 2, 5, and 8.

Beyond the primary explanatory measures, the effects of the contextual controls seem to suggest that characteristics of contextual environments more heavily influence interracial violence involving black offenders. Both Southern region and the natural log of a county's population size are significant predictors of variation between counties in the likelihood that violence will involve a white victim and black offender. Conversely, only population size is a significant predictor of between county variations in violence involving a black victim and white offender. Moreover, the effect of population size is reduced to insignificance after limiting the sample to only those crimes that occurred in communities with at least 1,000 blacks. While these results do not have a substantive bearing on the hypotheses described above, they do suggest that

certain characteristics of contextual environments have a greater impact on black offender as compared to white offender interracial events.

Other comparison that can be made between the results of the interracial violence models concern differences in the between county variation explained by all predictors as well as the proportion of this variance attributable to county level factors. Whereas 33% of the between county variation in all interracial violence is explained by the combination of county and incident level predictors, the corresponding value for black offender interracial violence is 30% but only 6.25% for white offender interracial violence. More importantly, approximately 29% of the explained variation across counties in black offender interracial violence is attributable to the county level factors considered in this study. The corresponding percentage for white offender interracial violence is only 17%. Again, while this finding does not substantively impact the expectations of hypotheses 2, 5, and 8, it does suggest that different patterns of interracial violence are somewhat differentially impacted by certain characteristics of the contextual environment in which they occur. Specifically, between county variations in the relative prevalence of black offender / white victim violence seem to be more heavily influenced by the characteristics of the contextual environment than white offender interracial violence.

The above comparisons provide an initial test of and a nominal level of support for hypotheses 2, 5, and 8. However, a comprehensive test of these predictions requires a statistical test of the significance of the difference between regression coefficients in the respective models. A widely accepted method of testing the (in)equality of regression coefficients was developed by Clogg, Petkova, and Haritou (1995) and subsequent analyses confirm that the method provides an unbiased estimator (Brame, Paternoster, Mazerolle, and Piquero 1998; Paternoster, Brame,

Mazerolle, and Piquero 1998). The formula for this coefficient comparison strategy is a Z test that takes the following form.

$$Z = b_1 - b_2 / \sqrt{(SEb_1^2 + SEb_2^2)} \quad (\text{Significance Test}) \quad (5)$$

The numerator in this formula is simply the difference between the sample coefficients and the denominator is an estimate of the standard error of this difference. Specifically, the denominator is the square root of the sum of the squared coefficient variances or standard errors. A summary of the results of the statistical tests of the difference between the coefficients in the two forms of interracial violence can be found in Panel A of Table 10. Table 10 also highlights whether hypotheses 2, 5, and 8 are supported or rejected based on the results of the significance tests.

Hypothesis 2 predicts that the P* index of residential racial heterogeneity will have a stronger positive effect on black offender as opposed to white offender interracial violence. The coefficient for this measure is .032 in the black offender model and .023 in the white offender model. In both models the standard error of the coefficient is .004. After entering these values into equation (5), the z test statistic is calculated as

$$Z = .032 - .023 / \sqrt{(.004^2 + .004^2)}$$

$$Z = 1.59$$

The z statistic of 1.59 equates to a 1-tail p-value of .056. While this is greater than the traditional significance cutoff level of .05, the effect is significant at the less stringent cutoff level of .10. As such, this significance test provides a marginal level of support for hypothesis 2. In this sample of violent crimes reported to NIBRS participating police agencies in 2005 there is a significant difference in the effect of residential racial heterogeneity on interracial violence perpetrated by blacks as compared to whites. Specifically, racial heterogeneity has a significantly stronger positive effect on between county variation in the likelihood that violence

will involve a black offender and white victim as compared to violence involving a white offender and black victim.

Hypothesis 5 predicts that there will be no significant difference in the effect of concentrated structural disadvantage on between county variations in interracial violence perpetrated by blacks as compared to whites. The regression coefficient for the disadvantage index is -.457 with a standard error of .104 in the white victim / black offender model and -.341 with a standard error of .090 in the black victim / white offender model. Entering these values into equation (5) provides the following z test statistic.

$$Z = -.457 - -.341 / \sqrt{(.104^2 + .090^2)}$$

$$Z = -.89$$

The z statistic of -.89 equates to a 2-tail p -value of .374. Because the p -value is in excess of .10, this significance test indicates that there is not a statistically significant difference in these regression coefficients. This finding provides strong evidence in support of hypothesis 5. In this sample of violent crimes reported to NIBRS participating police agencies in 2005 there is not a statistically significant difference in the effect of concentrated structural disadvantage on interracial violence perpetrated by blacks as compared to whites. While these two forms of interracial violence may be differentially impacted by certain characteristics of the contextual environment in which they occur, they are equally impacted by structural resource deprivation.

Hypothesis 8 predicts that the residential stability index will have an equal effect on between county variations in interracial violence perpetrated by blacks as compared to whites. The results in models 3 and 4 in Table 9 indicate that the regression coefficient for the residential stability index is -.152 with a standard error of .050 in the white victim / black offender analysis

and -.111 with a standard error of .046 in the black victim / white offender analysis. Plugging these values into equation (5) provides the following z test statistic.

$$Z = -.152 - -.111 / \sqrt{(.050^2 + .046^2)}$$

$$Z = -.60$$

The z statistic of -.60 equates to a 2-tail p-value of .549. Once again, as predicted, the p-value is in excess of .10. This significance test therefore indicates that there is not a statistically significant difference in these regression coefficients across the two interracial violence analyses. This finding thus provides strong evidence in support of hypothesis 8. In this sample of violent crimes there is not a statistically significant difference in the effect of residential stability on between county variations in violence involving white victims and black offenders as compared to violence involving black victims and white offenders. Once again, while different patterns of interracial violence may be differentially impacted by certain contextual level factors, they are equally impacted by levels of residential stability in the community in which they occur.

Intra-Racial Violence

The various patterns of interracial violence were predicted to be similarly and, for the most part, equally impacted by the primary contextual level explanatory measures. Conversely, hypotheses 3, 6, and 9, which were explicated in the review of the relevant literature in Chapter 2, predict that the two patterns of intra-racial violence will be significantly differentially impacted by the primary contextual measures. The specific predictions tested in this final section include:

H3: Population heterogeneity will have differential effects on the likelihood that violence will be black intra-racial as compared to white intra-racial

H6: Concentrated structural disadvantage will have a stronger positive association to the probability that violence will be black intra-racial than white intra racial.

H9: Residential stability will have differential effects of the likelihood that violence will be black intra-racial as opposed to white intra-racial.

A rich literature base highlights the fact that blacks and whites live in drastically distinct social environments. Specifically, blacks tend to live in much more structurally disorganized social environments than whites. In fact, some research provides evidence indicating that no large communities in the U.S. experience levels of white structural disadvantage that approach the mean level of black structural deprivation (Sampson and Wilson 1995; Shihadeh and Flynn 1996). Because blacks and whites experience vastly different social environments, hypotheses 3, 6, and 9 predict that the primary county level explanatory measures will have differential effects on intra-racial violence involving black as compared to white offenders. That is, the predictors of white on white violence and black on black violence are expected to differ, depending on the specific factor, in both direction and significance. Because these groups do not experience the same social reality characteristics of the contextual environment should differentially impact variation between counties in same race offending and victimization patterns.

Once again, before presenting statistical comparisons that provide direct tests of hypotheses 3, 6, and 9, a few general observations are in order. The intra-racial analyses appear in Models 1 and 2 in Table 9. The results of both models are based on about 80,000 homicides, robberies, and aggravated assaults across 760 and 881 counties respectively. As noted above, these two forms of intra-racial violence are not equally prevalent across counties. The average likelihood across counties that an incident will involve a white victim and white offender is .804, which makes this form of violence, by far, the most common racial pattern in these data. Conversely, the average likelihood of black victim / black offender violence is only about .114. Substantively, this indicates that across the counties in this analysis approximately 80% of incidents were white intra-racial and only 11% were black intra-racial.

This substantial difference in the relative prevalence in these forms of violence highlights one problematic aspect of the NIBRS data. That is, the extant criminological literature clearly indicates that black on black violence comprises a much greater proportion of all violence, however, many of these acts of violence are not reported to the police (Hindelang 1978; Elliot and Ageton 1980; Wright and Decker 1997). As such, it is unknown if the results pertaining to black intra-racial violence are applicable to all such crimes or only those that are actually reported to the police. Therefore, the results of the current analysis must be considered to be generalizable only to offenses known to the police or more specifically violent criminal incidents reported to participating NIBRS police agencies.

Hypothesis 3 receives an initial layer of support based on a simple comparison of the intra-racial analyses. The P* index of residential racial heterogeneity has a negative effect on between county variation in white intra-racial violence. Conversely, racial integration has a statistically significant but positive effect on variations in the likelihood that violence will be black intra-racial. Also as predicted, in both intra-racial analyses the race specific standardized concentrated disadvantage indices have a positive and statistically significant effect. This indicates that as race specific structural disadvantage increases so too does the probability that violence will take the form of a black and white intra-racial event respectively. Moreover, in support of hypothesis 6 the effect of concentrated disadvantage is considerably stronger for black (.777) than white (.304) intra-racial violence. Finally, the residential stability index exhibits a positive and statistically significant effect on between county variations in white intra-racial violence but does not have a significant effect on violence involving a black victim and offender. This racially based differential effect provides an initial layer of support for hypothesis 9 and may suggest that the influence of residential stability on violence is racially patterned. Overall, a

surface level comparison of the effects of the primary explanatory measures in the black and white intra-racial analyses provides a nominal level of support for hypotheses 3, 6, and 9. However, a definitive level of support for these predictions rests on significance tests of the differences between these coefficients, which are presented below.

Beyond the primary explanatory measures, the contextual control measures also provide evidence of the differential impact of contextual environments on white and black intra-racial violence. The region measure and the natural log of a county's population size are significant predictors of variation between counties in both black and white intra-racial violence. Both measures have a negative effect on white but a positive effect on black intra-racial violence. This suggests that white on white violence is relatively less prevalent in Southern counties and those with large populations while black on black violence is relatively more prevalent in the South and populous counties. The natural log of the index crime rate exhibits a similar racial patterning in its effect. White intra-racial violence becomes relatively less prevalent as the crime rate increases but black intra-racial violence is statistically indifferent to the index crime rate. Finally, a county's metropolitan status has no effect on either form of intra-racial violence. These results do not have a substantive bearing on the hypotheses 3, 6, and 9 but they do confirm the expectation that characteristics of contextual environments differentially impact the relative prevalence of white and black intra-racial violence.

Two additional comparisons between the intra-racial violence analyses concern the level of between county variation explained by the predictors in each analysis as well as the proportion of this variance attributable to characteristics of the contextual environment. According to the comparisons between the unconditional and full models, the combination of contextual and incident level predictors explain a remarkably similar amount of variation in both forms of intra-

racial violence. Specifically, 72% of the between county variation in white on white violence is explained by the full model while the comparable percentage is 74% for black on black violence. Moreover, 44% of the explained variation in white intra-racial violence and 48% of the variation in black on black violence can be attributed to the characteristics of the contextual environment considered in this study. This comparison suggests that the county level measures considered in this study explain an approximately equal proportion of the explained variation in both forms of intra-racial violence. Therefore, while the contextual measures differentially impact white and black intra-racial violence, they none the less explain roughly equal proportions of the variation between counties in each form of violence.

Initial comparisons support hypotheses 3, 6, and 9, however, comprehensive tests of these predictions requires a statistical test of the significance of the difference between regression coefficients in the respective models. To accomplish this, I once again rely on the z test statistic formula in equation (5) as a coefficient comparison strategy. A summary of the results of the statistical tests of the difference between the coefficients in the two forms of intra-racial violence can be found in Panel B of Table 10. Table 10 also highlights whether hypotheses 3, 6, and 9 are supported or rejected based on the results of the significance tests. Hypothesis 3 predicts that the P^* index of residential racial heterogeneity will have differential effects on black as opposed to white intra-racial violence. In the white intra-racial model the estimate of the effect of this measure is -.094 with a standard error of .005 and the coefficient is .103 with a standard error of .004 in the black intra-racial analysis. After entering these values into equation (5), the z test statistic is calculated as

$$Z = -.094 - .103 / \sqrt{(.005^2 + .004^2)}$$

$$Z = -30.77$$

The incredibly large z statistic of -30.77 equates to a 2-tail p -value of less than .01. As such, this significance test provides a significant level of support for hypothesis 3. As predicted, in this sample of violent crimes reported to NIBRS participating police agencies in 2005 there is a significant difference in the effect of residential racial heterogeneity on black as compared to white intra-racial violence. Specifically, racial heterogeneity or integration directly reduces the ability of whites to limit their social interaction with blacks within the residential environment and thus decreases the relative prevalence of white intra-racial violence. Conversely, residential heterogeneity directly exposes blacks to the unequal ascribed positions of whites and blacks in American society. This heightened awareness of relative deprivation based on ascribed statuses is proffered to increase strain among blacks, which is often evidenced by diffuse forms of violence among blacks. As such, racial heterogeneity leads to an increase in the relative prevalence of black intra-racial violence.

The expectation laid out in hypothesis 6 is that race specific measures of concentrated structural disadvantage will have a significantly stronger impact on between county variations in black as compared to white intra-racial violence. The effect of concerted disadvantage should be positive in both models, however, the effect should be significantly greater for black on black violence. As predicted, the results of both analyses produce positive regression coefficients for the disadvantage index. The regression coefficient for the disadvantage index is .777 with a standard error of .178 in the black intra-racial analysis and .304 with a standard error of .091 in the white intra-racial analysis. Entering these values into equation (5) provides the following z test statistic.

$$Z = .777 - .304 / \sqrt{(.178^2 + .091^2)}$$

$$Z = 2.37$$

The z statistic of 2.37 equates to a 2-tail p-value of .018 and 1-tail p-value less than .01. As such, this significance test indicates that there is a statistically significant difference in the coefficients for the race specific disadvantage indices between the two intra-racial analyses. This finding thus provides strong evidence in support of hypothesis 6. In this sample of violent crimes reported to NIBRS in 2005 there is strong evidence that race specific concentrated structural disadvantage has a significantly stronger impact on black on black as compared to white on white violence. While each distinct pattern of intra-racial violence is relatively more prevalent within structurally disadvantaged communities, black on black violence is significantly more influenced by the concentration of poverty, unemployment, family disintegration, and a lack of educated individuals among blacks.

Hypothesis 9 predicts that community levels of residential stability will have a differential impact on between county variations in black as compared to white intra-racial violence. On the surface, the results provide a nominal level of support for this prediction as the residential stability index has a positive and significant effect on white on white violence but no effect on black on black violence. Once again, a comprehensive test of this prediction requires a test of the significance of this difference. The regression coefficient for the residential stability index is .137 with a standard error of .059 in the white victim / white offender analysis and -.118 with a standard error of .073 in the black victim / black offender analysis. Entering these values into equation (5) provides the following z test statistic.

$$Z = .137 - -.118 / \sqrt{(.059^2 + .073^2)}$$

$$Z = 2.72$$

The z statistic of 2.72 equates to a 2-tail p-value less than .01. As such, this significance test provides strong evidence in support of hypothesis 9. Specifically, the z-test indicates that there

is a significant difference in the regression coefficients for the residential stability index between the two intra-racial analyses. In those communities with high levels of home ownership and residence stability, white on white violence is relatively less prevalent whereas black on black violence is not significantly affected. More importantly, the index's effect on white intra-racial violence is significantly different than the null effect in the black intra-racial analysis. Once again, this finding provides evidence of the rationale underlying hypotheses 3, 6, and 9 in indicating that contextual environments differential impact between county variations in the relative prevalence of white and black intra-racial violence.

Table 10: Summary of Model Comparisons

Panel A				
	WvBo	BvWo	Difference in Coefficients	Hypothesis Test
Racial Residential Heterogeneity	.032** (.004)	.023** (.004)	<i>Significant Difference</i>	H2 Supported
Concentrated Disadvantage	-.457** (.104)	-.341** (.090)	<i>No difference</i>	H5 Supported
Residential Stability	-.152** (.050)	-.111* (.046)	<i>No difference</i>	H8 Supported
Panel B				
	WvWo	BvBo	Difference in Coefficients	Hypothesis Test
Racial Residential Heterogeneity	-.094** (.005)	.103** (.004)	<i>Significant Difference</i>	H3 Supported
Concentrated Disadvantage	.304** (.091)	.777** (.178)	<i>Significant Difference</i>	H6 Supported
Residential Stability	.137* (.059)	-.118 (.073)	<i>Significant Difference</i>	H9 Supported

CHAPTER 6: DISCUSSION AND CONCLUSION

Community Level Covariates of Violence: Quantity vs. Quality

The community level covariates of violent crime have piqued the interest of sociologists, criminologists, and policy makers for quite some time. Continuing in the tradition of Durkheim (1893, 1903, 1915) and a number of early Chicago School researchers (Thomas and Znaniecki 1920; Park 1925; Park, Burgess, and McKenzie 1925; Thrasher 1927; Shaw and McKay 1929, 1942), modern structural criminologists have directed much of their effort toward understanding how and why the structural and cultural characteristics of communities affect patterns of violence. Research in this tradition has elucidated a number of contextual factors that impact violent crime, however, the vast majority of this research has focused on explaining variations in rates or quantities of crime across communities. This is an unfortunate limitation in the extant literature as the contextual environment in which violent crimes occur is likely to impact the nature or quality of violence. Regardless of the crime rate or the number of crimes that occur in a community, certain characteristics of the contextual environment are likely to impact the relative prevalence of certain forms of violence.

Violent crimes are not a homogenous category of events. In fact, even a single form of violence consists of criminal incidents that are qualitatively different in nature and are thus likely to be differentially impacted by the contextual environment in which they occur (Anderson 1999; Baumer, Horney, Felson, and Lauritson 2003; Kubrin 2003; Warner 2003, Sampson and Bean 2006). While few studies have examined qualitative variations in violence across communities, a number of differentiations in the nature of violence hold the potential to make vital contributions to empirical and theoretical developments in the study of crime and violence. The current study advances the criminological literature in focusing on variation between

communities in the relative prevalence of race specific patterns of violence, particularly intra versus interracial violence.

Two structural level criminological theories that have received resounding support in the extant literature are the social disorganization perspective and the systemic model of community attachment. Shaw and McKay (1942), in explicating their social disorganization perspective, argued that structural dislocations such as poverty, population instability, and population heterogeneity exacerbate levels of violence in a community. Specifically, impoverished and unstable or structurally disorganized communities suffer from normative confusion and are unable to instill mainstream norms, values, and attitudes into the population. In turn, such communities become ineffective at maintaining formal and informal social control mechanisms, which leads to an inability to regulate the behavior of residents. Therefore, the collapse of effective social controls, particularly informal social control, exacerbates levels of violence in a community. Kasarda and Janowitz (1974) extended the disorganization perspective with their systemic model of community attachment. They argue that instability in both the population and social institutions in “disorganized” communities leads to residents having fewer opportunities to build friendship ties, associational networks, or participate in organizational activities within the community (Kasarda and Janowitz 1974, Sampson 1988, Sampson and Groves 1989). Under such circumstances, formal and informal social control mechanisms are undermined and crime and violence are exacerbated.

A substantial literature base supports the relation between social disorganization, residential stability, and levels of violence. However, few researchers have attempted to explore whether those structural factors highlighted in these perspectives may influence the relative prevalence as opposed to the rate of race specific forms of violence. This is unfortunate as these

middle range theories can be linked to Blau's (1977) grand sociological Macro Structural Opportunity Theory (MSOT) in order to develop a number of hypotheses on how and why structural disadvantage and residential stability will influence different forms of intra and interracial violence. Blau argues that positive and negative intergroup relations depend primarily on opportunities for contact between members from different groups. Moreover, a number of structural characteristics, such as those highlighted by the disorganization and systemic perspectives, have a profound impact on opportunities for fortuitous interracial associations. Therefore, those characteristics of contextual environments highlighted in the disorganization and systemic perspectives are likely to have a dramatic impact on interracial violence, which is simply one type of interracial association.

Findings from the Study

This study has examined how certain characteristics of the contextual environment, which were drawn from MSOT, the social disorganization perspective, and the systemic model, impact the likelihood that violence will take on a number of race specific patterns. Specifically, the analyses presented in this study assessed how certain community characteristics impact opportunities for fortuitous interracial associations and thus the likelihood that violence will be interracial. In assessing the impact of the contextual environment on the relative prevalence of certain forms of violence, characteristics of the incidents themselves are controlled. This research design called for the use of nonlinear multilevel modeling techniques which allowed for the assessment of the impact of structural features above and beyond the influence of particular types of incidents that occur in certain places as well as the characteristics of victims and offenders. Table 11 presents a list of the hypotheses derived by merging the theoretical

propositions of MSOT with the intermediate disorganization and systemic models. A brief summary of the findings in support or against the expectations are also presented in Table 11.

Table 11 - Summary of Hypothesis Tests

Expectation	Finding
Hypothesis 1: Racial heterogeneity will have a positive effect on interracial violence.	Hierarchical non-linear models examining criminal incidents nested within Counties around 2005 provide strong support for this expectation. Controlling for characteristics of incidents and counties, the P* measure of residential racial heterogeneity has a positive association with the probability that a aggravated assault, robbery, or homicide will be interracial. The P* measure is also positively related to both white and black offender interracial violence.
Hypothesis 2: Racial heterogeneity will have a stronger positive relation to black as opposed to white offender interracial violence.	The P* measure of residential racial heterogeneity has a positive effect on the likelihood that violence will be interracial in both black and white offender incidents. The effect is slightly stronger in the black offender models (.032 versus .023). This difference is statistically significant at the less stringent .10 level and thus provides limited support for the expectation.
Hypothesis 3: Racial heterogeneity will have differential effects on black and white intra-racial violence	HLM models of white and black intra-racial violence support this expectation. The P* measure is significantly negatively associated with the likelihood that violence will be white intra-racial (-.094) and positively associated with black intra-racial violence (.103). A significance test indicated that this difference is statistically significant.
Hypothesis 4: Concentrated structural disadvantage will have a negative effect on interracial violence.	HLM models suggest that a county level concentrated disadvantage index has a statistically significant negative association with the likelihood that violence will be interracial. This effect holds for both white and black offender interracial violence. Communities with higher levels of poverty, unemployment, female headed households, and fewer residents with a college education or health insurance also experience a decrease in the relative prevalence of interracial violence.
Hypothesis 5: Concentrated structural disadvantage will have similar effects on interracial violence perpetrated by whites and blacks.	The structural resource disadvantage index exhibits a significant and negative effect on both black (-.457) and white (-.341) offender interracial violence. While the effect is slightly larger for black offender / white victim violence a statistical test of this difference indicates that the coefficients are not significantly different from one another.
Hypothesis 6: Concentrated structural disadvantage will have a stronger positive association to black as compared to white intra-racial violence.	Structural disadvantage among whites is positively related to white intra-racial violence (.304) while black disadvantage is positively associated with black intra-racial violence (.777). The effect of disadvantage is quite a bit stronger for black on black violence and a significance test indicates that this difference is statistically significant.
Hypothesis 7: Residential stability will have a negative effect on interracial violence.	HLM models indicate that an index comprised of residential stability and home ownership has a strong negative association (-.151) with the probability that an aggravated assault, robbery, or homicide will be interracial. This effect holds for both black and white offender violent incidents.
Hypothesis 8: Residential stability will have similar effects on interracial violence perpetrated by whites and blacks.	The standardized residential stability index exhibits a significant and negative effect on both black (-.152) and white (-.111) offender interracial violence. While the effect is slightly larger for black offender / white victim incidents a significance test indicates that the two coefficients are not significantly different from one another.
Hypothesis 9: Residential stability will have differential effects on black and white intra-racial violence.	HLM models indicate that residential stability significantly increases the likelihood that violence will take the form of white intra-racial (.137) but has no effect on the odds that violence will involve both a black victim and offender. A significance test of the difference between the coefficients in the white and black intra-racial violence models suggests that county level residential stability has a significantly different effect on these two forms of violence.

The first hypothesis, which was drawn directly from MSOT, predicts that residential racial heterogeneity will increase interracial contact and thus the likelihood that violent criminal incidents will be interracial. The nonlinear hierarchical analysis of intra versus interracial violent incidents nested within counties provides strong support for this expectation and hence MSOT. In those counties where whites and blacks are more likely to come into contact, interracial violence is relatively more prevalent. This finding does not necessarily speak strictly to the quantity of interracial incidents but rather the proportion of all incidents that are inter as opposed to intra-racial. Beyond the analysis of simply intra versus interracial violence, models predicting the likelihood of distinct racial patterns of intra and interracial violence provide a preponderance of evidence in support of hypothesis 1. Regardless of the race of the offender or victim, the likelihood that violence will be interracial between counties is positively related to residential racial heterogeneity. Further, white intra-racial violence becomes relatively less likely as residential racial heterogeneity increases.

The second expectation predicts that racial heterogeneity will have a stronger positive relation to black as opposed to white offender interracial violence. As noted above, racial heterogeneity increases the odds that violence will be interracial and this positive effect is consistent in models predicting black as well as white offender interracial violence. There are however at least two reasons to expect that racial heterogeneity will have a stronger positive impact on black offender as compared to white offender interracial violence. First, blacks tend to be segregated from whites across their social experience such that an increase in residential racial heterogeneity should have a more dramatic impact on the opportunities for black offenders to victimize white residents. Second, an increase in exposure to whites within the residential environment may serve to exacerbate ideas and feelings surrounding racial inequality among

some black residents. That is, increased interracial associations may serve to highlight the race based patterns of deprivation and the highly unequal positions of blacks and whites in U.S. society. In such an environment, blacks may feel more strained due to their heightened awareness of race based relative deprivation patterns. As such, black offender interracial violence is likely to be more heavily impacted by residential racial heterogeneity.

As expected, the log-odds coefficient in the black offender model (.032) is slightly larger than the coefficient in the white offender model (.023). This surface level comparison provides initial support for hypothesis 2 but does not give a clear indication as to the significance of the difference across the two forms of interracial violence. In order to assess the statistical significance of this difference, a test developed by Clog et al. (1995) and confirmed by Paternoster and his colleagues (Brame et al. 1998, Paternoster et al. 1998) was instituted. This test provided a z statistic of 1.59, which equates to a significant 1-tail p -value of .056. Because the difference in the coefficients is significant at the less stringent .10 level the analyses of black and white offender interracial violence provide only limited support for hypothesis 2. That is, there is a marginally stronger effect of residential racial heterogeneity on interracial violence perpetrated by blacks as compared to whites.

Hypothesis 3 predicts that racial heterogeneity will have differential effects on black and white intra-racial violence. Racial integration should be negatively related to the likelihood that violence will be white intra-racial because residential heterogeneity will reduce the ability of the majority group to limit their social interactions with non-whites. Conversely, residential racial heterogeneity should have a null or potentially a positive association with the likelihood that violence will be black intra-racial. Increased residential racial heterogeneity directly exposes blacks to the unequal ascribed positions of whites and blacks in American society. However,

while blacks may experience an increase in contact with whites within the residential environment, their day to day social experiences will continue to be one in which most of their social interaction are with non-whites. This heightened awareness of their own relative deprivation based on an ascribed status is proffered to increase strain among blacks. This strain coupled with a general limitation in their access to whites may lead to an increase in diffuse forms of aggression evidences as a relative increase in black intra-racial violence.

A surface level comparison of the results from the white and black intra-racial violence models supports this prediction. The P^* measure of residential racial heterogeneity has a significant negative effect on the likelihood that violence will involve only white actors (-.094) but a significant positive effect on the probability that violence will involve a black victim and offender. The significance test of this difference produced a z statistic of -30.77 with a 2-tail p -value of less than .01. As such, the results provide strong support for hypothesis 3. In this sample of violent crimes there is a significant difference in the effect of residential racial heterogeneity on black as compared to white intra-racial violence.

The expectation outlined in hypothesis 4 is derived from merging the theoretical propositions of MSOT with predictor measures highlighted in the social disorganization perspective. It is predicted that concentrated structural disadvantage will lead to a reduction in opportunities for fortuitous interracial associations. As such, concentrated disadvantage should have a negative relation to the relative prevalence of interracial violence. This expectation receives strong support from the analysis of intra as compared to interracial violence. Counties with higher levels of poverty, unemployment, female headed households, and fewer residents with a college education or health insurance also experience a decrease in the relative prevalence of interracial violence. This effect is robust to the racial patterning of the victim and offender in

interracial violence and concentrated disadvantage also exhibits a positive effect on the likelihood that violence will be white or black intra-racial.

For hypothesis 5, the results from the models provide strong support for the prediction that concentrated structural disadvantage will have similar effects on interracial violence perpetrated by whites and blacks. The disadvantage index has a statistically significant and strong negative effect on the probability that violence will involve a white victim and black offender (-.457) as well as a black victim and white offender (-.341). At first glance it seems that these two log-odds coefficients may not be equal as the size of the coefficient for black offender interracial violence is slightly larger than that for white offender interracial violence. A significance test of the difference between these coefficients provides a z statistic of -.89 with a 2-tail p -value of .374 indicating that there is not a statistically significant difference in the effect of concentrated structural disadvantage on interracial violence perpetrated by blacks as compared to whites.

Hypothesis 6 predicts that race specific indices of concentrated structural disadvantage will have a stronger positive association to black as compared to white intra-racial violence. The nonlinear hierarchical models indicate that the relative prevalence of both black and white intra-racial violence are significantly increased in those communities with increased race specific levels of concentrated structural disadvantage. That is, increased levels of poverty, unemployment, and female headed households, coupled with a relatively undereducated population causes communities to experience an increase in the relative prevalence of both black and white intra-racial violence. However, in support of the expectation of hypothesis 6, black structural disadvantage has a substantially larger positive effect on the relative prevalence of black intra-racial violence (.777) as compared to the effect of white disadvantage on white intra-

racial violence (.304). The significance test of this difference provided a z statistic of 2.37 with a 1-tail p -value less than .01. This indicates that there is a statistically significant difference in the coefficients for the race specific disadvantage indices between the two intra-racial analyses. While each distinct pattern of intra-racial violence is relatively more prevalent within structurally disadvantaged communities, black on black violence is significantly more influenced by the concentration of black disadvantage.

With hypothesis 7 the focus turns to the systemic model of community attachment, which is measured with a residential stability index. The expectation is that residential stability will have a negative effect on probability that violence will be interracial because it reduces opportunities for fortuitous interracial associations. In models comparing the relative prevalence of intra to interracial violence, the residential stability index has a statistically significant negative effect. This indicates that interracial violence is relatively less prevalent in those counties with a stable population base that is tied to the community through homeownership. Residential stability maintains a negative effect in analyses of both black and white offender interracial violence and has the expected positive effect on the likelihood that violence will take the form of a white intra-racial incident.

The expectation of hypothesis 8 is that residential stability will have similar effects on interracial violence perpetrated by white and black offenders. The nonlinear multilevel analyses indicate that residential stability has a significant and negative effect on black (-.152) and white (-.111) offender interracial violence. That is, each form of interracial violence is relatively less prevalent in residentially stable communities in which a greater proportion of residents are tied to the community through homeownership. While the effect is slightly larger for black offender / white victim incidents a significance test indicates that the two coefficients are not significantly

different from one another. This supports hypothesis 8 and suggests that race specific patterns of interracial violence are equally impacted by levels of residential stability in the community in which they occur.

The final expectation was that residential stability would have differential effects on the likelihood that violence will be black as compared to white intra-racial. More specifically, residential stability should have a positive effect on the likelihood that violence will be white intra-racial but a null or negative effect on the probability that violence will involve both a black victim and offender. In support of this expectation, the analyses indicate that the residential stability index has a significant and positive effect on white intra-racial (.137) violence but no effect on black intra-racial violence. A significance test of the difference between the coefficients in the white and black intra-racial violence models produces a z statistic of 2.72 with a p -value less than .01. As such, the expectation of hypothesis 9 is supported. County level residential stability has a significantly different effect on these two forms of intra-racial violence. In those communities with high levels of home ownership and residence stability, white on white violence is relatively less prevalent whereas black on black violence is not significantly affected.

Limitations of the Study

This study addresses important issues in regards to variations in the nature of violence and the merging of theoretical proposition from MSOT with those from social disorganization and the systemic model to explain the relative prevalence of race specific forms of violence. However, there are a number of noteworthy limitations that deserve mentioning. First, social disorganization as well as the systemic model conceptualize the neighborhood as the primary unit of social control. While much research guided by these perspectives has been situated at higher level units of analysis such as cities, counties, and states, the fact remains that the

theoretical propositions advanced in these perspectives revolve around neighborhood level social control processes. Studies utilizing higher order units of analysis, such as the counties used in the current study, must make the assumption that certain social control mechanisms extend beyond any particular neighborhood. This assumption becomes problematic when, as is usually the case, structural resource disadvantage is concentrated within a limited number of sub-units (i.e. neighborhoods) of a larger unit of analysis (i.e. county). That is, while a particular county may have a high score on a disadvantage index it is usually the case that only certain neighborhoods suffer from truly concentrated disadvantage whereas other neighborhoods may be prospering. The NIBRS data drawn on here are much more detailed than other files containing officially reported crime across the U.S. However, the NIBRS does not yet allow researchers to disaggregate incidents into the actual neighborhoods in which they occurred but rather only the agency in which the crime was officially reported. Beyond the outcome measure, many of the structural level characteristics examined in this study also cannot be obtained for specific neighborhoods. Future analyses of interracial violence employing neighborhood level perspectives should explore the prospects of working with a particular NIBRS reporting agency or perhaps a number of agencies in order to disaggregate intra and interracial violent incidents into the actual neighborhoods or census tract where they occurred.

A second set of limitations of this study concern the limitations inherent to the data on criminal incidents drawn from the NIBRS. First and foremost the NIBRS contains information on only those crimes that are officially reported to the police. Many crimes are not reported to the police and these unreported crimes are necessarily not included in this analysis. Unreported crimes become problematic when they are unreported in a systematic fashion. For example, if crimes go unreported in certain types of communities, such as structurally disadvantage

communities, or certain types of people consistently fail to report their victimization experiences, such as minorities, then the reliability of official data becomes suspect. In the attempt to address this potential shortcoming in the NIBRS data the current study focused on the violent crimes of homicide, robbery, and aggravated assault, which tend to be more completely reported than non-violent crimes. Future research should however explore potential variations in the results of race specific multilevel analyses of violence between official records and self report offending and victimization data.

Another limitation to the NIBRS data concerns the representativeness of those agencies that currently report to the system and thus the generalizability of findings based on the data. The NIBRS program represents a comprehensive, time consuming, and training intensive overhaul of the traditional methods by which crime reports are submitted to the national data base. As such, agencies are required to commit a considerable amount of resources in order to begin reporting their criminal incidents to the NIBRS. It is substantially more convenient and cost effective for relatively small agencies and those that deal with a lesser volume of crime to make this transition. As such, past years of NIBRS data have had a small agency bias. Every year dozens if not hundreds of agencies begin reporting their crimes to NIBRS and the 2005 data is not nearly as subject to the small agency bias as previous years of data. Still, the current analysis includes agencies from less than one-third of all police agencies and only agencies from 21 states were included in this analysis. Future studies should thus explore the generalizability of the current set of findings but utilizing future years of the NIBRS data that will include crimes reported to many additional agencies.

A final limitation to this study concerns the measurement of the intervening mechanisms by which the highlighted characteristics of the contextual environment are predicted to impact

variations in the relative prevalence of race specific forms of violence. Specifically, the social disorganization and systemic models were reinterpreted through the propositions of macro structural opportunity theory (MSOT). That is, characteristics of communities, such as concentrated resource disadvantage and residential stability, are believed to impact the relative prevalence of race specific forms of violence through their impact on the availability of opportunities for fortuitous interracial associations. While the effects of the structural measures confirm expectations, there is no direct measure of actual associations between race groups. The residential racial heterogeneity or P* measure comes the closest to measuring actual interracial interactions, however, even this measure essentially taps only the probability that a random white individual will next encounter a black individual in their respective census tract. It is vital that future research, potentially an analysis of a limited number of communities, devise actual measures of interracial associations to confirm that structural features of communities are indeed impacting interracial associations in the hypothesized manner.

Relevance of Findings for Theory and Empirical Research

The findings presented in this study have a number of implications for criminological theories as well as empirical research on crime and violence. The primary implication from this study for criminological theory is that popular middle range or intermediate theories commonly used to explain variations in levels or quantities of crime can be combined with social mechanisms highlighted by Blau's MSOT in order to derive expectations about variations in the nature or quality of violence. Research within the social disorganization and systemic frameworks has primarily focused on explaining why certain communities have more or less crime rather than why specific forms of violence are relatively more prevalent in certain contextual environments. However, the structural features highlighted by these perspectives can

and should be combined with grand theories such as MSOT, which are “applicable to many different levels of analysis and diverse sociological phenomena” (Sampson 1984 p. 618). In combining these perspectives it is possible to move beyond simple levels of crime to gain insight into the relative prevalence of certain forms of race specific violence across contextual environments, especially interracial violence.

MSOT suggests that structural conditions impact opportunities for interracial contact, which, in turn, impact the likelihood that violence will be interracial. Much like interracial marriage or any other form of interracial contact, interracial violence depends heavily on the availability of opportunities for contact between whites and blacks. Traditionally, the social disorganization and systemic models highlight the role of structural dislocation in exacerbating levels of violence. However, these same structural features, as has been shown in the results of this report, also impact opportunities for fortuitous interracial associations. Specifically, concentrated structural disadvantage and residential stability were found to decrease the likelihood that violence will be interracial. In merging such findings with MSOT it is argued that their influence on opportunities for interracial contact is the primary social mechanism through which these structural characteristics impact the racial patterning of violence. Social disorganization and the systemic model are however not the only structural level explanations of violence that can potentially be merged with MSOT to develop testable hypotheses on the relative prevalence of interracial violence. New paradigms are emerging within the extant macro criminological literature which turn attention to community resources as opposed to social dislocations. It is possible that these paradigms, such as the civic community perspective, can be merged with MSOT to grasp an even firmer understanding of how the structural features of communities impact interracial associations and thus interracial violence.

Increasing our understanding of how the contextual environment influences the prevalence of race specific forms of violence, especially interracial violence, also has important practical and policy implications. Obviously the results of this study should not be interpreted in such a way that structural disadvantage is seen as a positive community characteristic because it reduces the likelihood that violence will be interracial. Instead, it is important to understand that as structural disadvantage becomes less concentrated interracial violence is likely to become relatively more prevalent. Blau (1977) addressed this seemingly paradoxical situation and noted that: “conditions that increase the probability of social contact increase the likelihood of overt interpersonal conflict as well as that of harmonious social associations, since both depend on opportunities for social contact. Strangely, therefore, the very conditions that foster the social integration of various groups and strata into a coherent social structure simultaneously precipitate frequent interpersonal conflicts among members” (p. 113). This is a potentially vital concern for many communities as their socioeconomic prosperity could lead to an increase in the relative prevalence of interracial violence. This increase in the relative prevalence of interracial violence could undermine already tenuous race relations and lead to an increase in race based hate crimes. As such, the results of this study should be used to stress the importance that care should be taken to be assured that community leaders and citizens understand how changes in the contextual environment are likely to impact the relative prevalence of certain forms of violence. If residents are uninformed and left to their own accord, positive changes in a community could have deadly consequences.

Empirically, this study has a number of implications for future criminological research. First, this analysis highlights the fact that there is considerable variation across communities in the relative prevalence of qualitatively different forms of violence. That is, beyond variation in

levels of violence there is considerable variation in the nature of violence across communities. Moreover, characteristics of the contextual environment are useful in terms of predicting why certain communities are likely to experience a proliferation of certain forms of violence rather than others. This report has concentrated on between community variations in the relative prevalence of intra and interracial violence. Future research should explore a diverse array of variations in the nature or quality of violence. For example, future studies should explore variations in the relationship of victim and offenders, the extent of victim injury, the underlying motivation of violence, and intra versus inter-ethnic violence.

Another empirical implication of this study for future research stems from the use of hierarchical regression techniques. Some criminologists have argued that prior research on the contextual level covariates of violence provide only tentative conclusions as there was no way to verify that the result were not simply contextual fallacies (Peterson and Krivo 2005). That is, because prior studies have largely failed to control for the characteristics of incidents, victims, and offenders it is difficult to know for sure whether structural factors are in indeed robust predictors of violent crime. In fact, initial multilevel analyses informed by the social and cultural disorganization perspective suggest that characteristics of contextual environments have little to no impact on variations in the quantity or quality of violent crime once characteristics of incidents are controlled (Baumer et al. 2003, Warner 2007). These studies however are potentially flawed as they only consider a small number of neighborhoods or a single city and do not utilize hierarchical modeling techniques. In this study, the results of hierarchical nonlinear models indicate that structural factors do indeed have an impact on the relative prevalence of race specific forms of violence above and beyond the effects of incidents specific characteristics.

Future studies should thus build on these results by analyzing comprehensive data on violence from the vantage point of the most applicable regression modeling techniques available.

Yet another implication of this study centers on the usefulness of the incident based data available from the NIBRS. Previous efforts to provide data on officially reported crimes have provided very little in the way of details on the actual incidents. Specifically, data available from the Uniform Crime Reports largely provides only aggregate information on the number of violent crimes reported to police. With such aggregate data it is impossible to control for characteristics of incidents as well as predict variation in the nature of violent crime. This study thus highlights the usefulness of a national data system that allows police agencies to report detailed information on the crimes that occur in their jurisdiction. There is a wealth of potential research questions that can be address with the NIBRS data and researchers should exploit these advantages. Beyond the potential for theoretical and empirical contributions analyses of the NIBRS data can provide useful information to police agencies that can be utilized to better control violent crimes in their community. Such contributions would be especially useful as they would likely spun more agencies into transitioning to an incident based reporting system.

Finally, the results from this research suggest that the structural level predictors of interracial violence have relatively consistent effects regardless of the racial patterning of the victim and offender. However, the structural predictors of white and black intra-racial violence seem to work in opposite directions. These differential findings were however expected due to the fact that whites and blacks experience vastly different social realities. Stemming from the racial invariance thesis outlined by Sampson and Wilson (1995), contextual environments should have similar impacts on both white and black violence when these two race groups are equally impacted by negative structural features (i.e. similar levels of structural resource deprivation).

The racial invariance hypothesis however has primarily been interpreted and empirically tested in relation to levels of crime or crime rates. Future research could explore the analytical flexibility of the racial invariance thesis by exploring the consistency of predictors of the nature of violence in a limited number of NIBRS reporting agencies in which whites and blacks are roughly comparable across a number of socioeconomic measures.

Overall, despite certain limitations, the current study offers a number of theoretical and empirical contributions to the study of violent crime. Theoretically, this study indicates that popular middle range theories of violence, when reinterpreted through MSOT, can be applied to understanding variation across counties in the relative prevalence of race specific patterns of violence. Empirically, one of the primary contributions of this report stems from its innovative use of the NIBRS data. While detailed information has been available for homicide in single cities such as St. Louis and Chicago, the NIBRS allows researchers to explore an entirely new frontier in the analysis of the micro and macro predictors of numerous types of crime. Previous analyses of the NIBRS data have largely been limited to descriptive analyses, however, there are a number of theoretically and empirically interesting research questions with important policy implications that can be addressed with these data. Future analyses, such as those suggested above, will surely lead to significant advancements in our knowledge of the causes and correlates of variation in the quantity and quality of violent crime.

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APPENDIX: RACE SPECIFIC LEVEL 1 ONLY MODEL

		Model 1 (WvWo)	Model 2 (BvBo)	Model 3 (WvBo)	Model 4 (BvWo)
	Reliability Est.	.693	.658	.394	.158
	Intercept	1.765** (.067)	-2.602** (.813)	-2.675** (.046)	-3.722** (.039)
Primary Measures					
	Concentrated Disadvantage				
	Residential Stability				
	Racial Residential Heterogeneity				
Contextual Controls					
	County in South				
	Metropolitan County				
	Population Size (LN)				
	Crime Rate (LN)				
Victim Characteristics					
	Age of Victim	.005** (.001)	-.011** (.001)	.011** (.002)	-.009** (.002)
	Male Victim	.039 (.032)	-.303** (.060)	.225** (.077)	.626** (.045)
	Community Resident	-.183** (.073)	.856** (.196)	-.737** (.191)	-.082 (.067)
Offender Characteristics					
	Male Offender	.197** (.029)	-.664** (.035)	.908** (.057)	-.151+ (.083)
	Suspected of Using Alcohol	.610** (.042)	-.331** (.050)	-.701** (.055)	-.125+ (.073)
Incident Characteristics					
	Gun was used	-.629** (.052)	.556** (.040)	.009 (.046)	-.073 (.062)
	Victim Injury	-.020 (.018)	.196** (.025)	-.220** (.038)	-.184** (.039)
N – Incidents		80,422	79,547	80,422	80,422
N – Counties		881	760	881	881
Random Effect Variance Component (Intercept)		2.752 (1.659)	3.296 (1.816)*	.579 (.761)	.208 (.457)
R.E.V.C (Lev 1)		.956 (.978)	.938 (.968)	.975 (.988)	.945 (.972)

Robust Standard Errors in Parentheses **p ≤ .01 *p ≤ .05 +p ≤ .10

VITA

Shaun A. Thomas received the degree of Bachelor of Arts in sociology from The University of Akron and the degree of Master of Arts in sociology from Louisiana State University. In August of 2009, he begins his appointment as Assistant Professor in the Department of Criminal Justice at The University of Arkansas – Little Rock.