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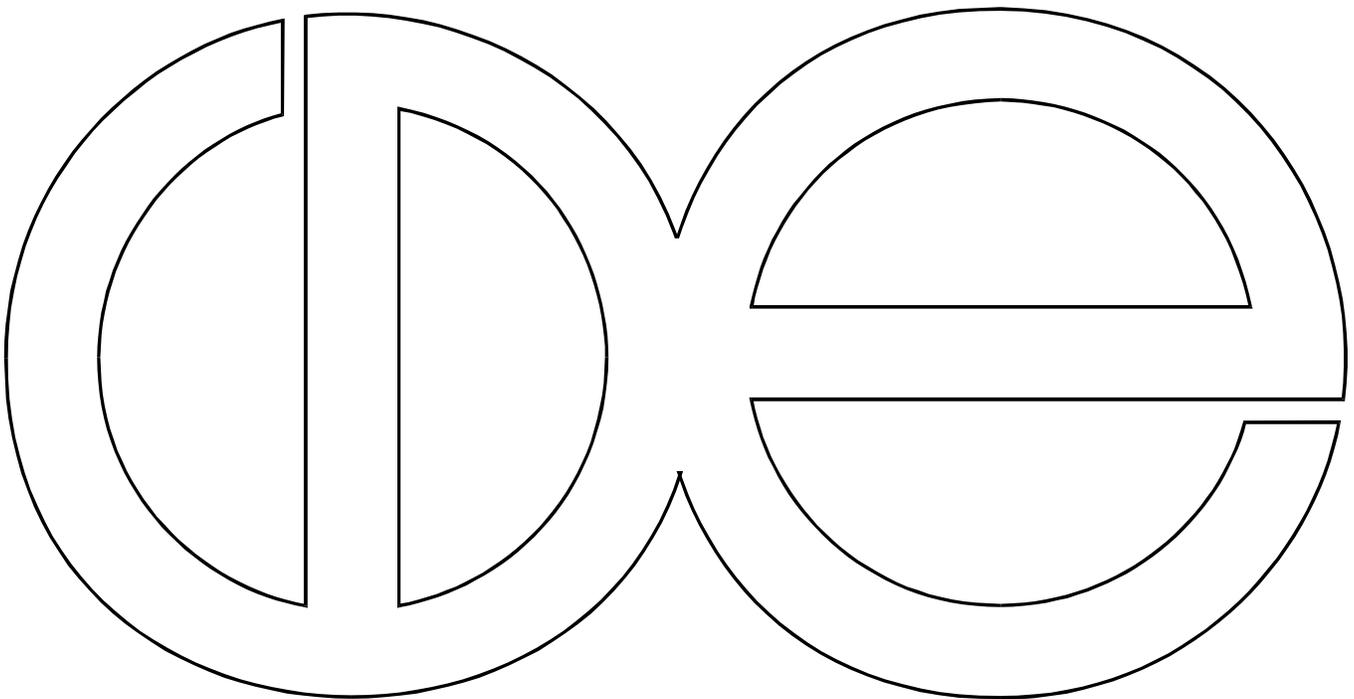
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Black Neighbors, Higher Crime?
The Role of Racial Stereotypes in
Evaluations of Neighborhood Crime

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ABSTRACT

Our paper investigates the relationship between neighborhood racial composition and perceptions residents have of their neighborhood's level of crime. We use survey questions asking about perceptions of neighborhood crime from the 1978 Chicago Crime Factors and Neighborhood Decline study, the 1990 Testing Theories of Criminality and Victimization in Seattle study, and the 1994 Crime Changes in Baltimore study, matched with neighborhood data from the 1980 and 1990 summary tape files of the census, and crime statistics from local police departments. We find that the percentage young black men in a neighborhood is positively associated with perceptions of the neighborhood's level of crime, even after controlling for two measures of neighborhood crime rates and other relevant individual and neighborhood characteristics. The negative influence of percent young black men on perceptions of neighborhood crime holds for all racial groups but is stronger for non-blacks than for blacks. We argue this supports the view that stereotypes are influencing perceptions of neighborhood crime levels. Implications for racial segregation are discussed.

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Introduction

In striking contrast to the convergence between blacks and whites on most socioeconomic indicators, the continuing severity of residential segregation remains a central feature of the African-American experience. African Americans remain more segregated than any other racial or ethnic group, and this residential isolation persists across all levels of socioeconomic attainment (Massey and Denton 1993; Farley and Frey 1994). Past studies have found that white avoidance of, and white flight from, neighborhoods with more than a few blacks are key processes that maintain high levels of racial segregation (Massey, Gross, and Shibuya 1994; South and Crowder 1998; Quillian 1999). Yet research has only begun to examine why whites try so hard to avoid neighborhoods with black residents. Some argue that whites deliberately avoid black neighbors, expressing their racial aversion by maintaining extreme spatial distance from blacks (Massey and Denton 1993). Others, in contrast, argue that the racial composition of a neighborhood is merely a proxy for correlated *nonracial* neighborhood conditions (such as poverty, crime, etc.) to which whites respond (Taub, Taylor, and Dunham 1984; Harris 1999).

Insight into the determinants of neighborhood preferences is critical to understanding the processes of mobility which generate residential segregation. It is only when we understand why whites seem averse to neighborhoods with high concentrations of blacks that we might effectively target policies to reduce residential segregation. In this study, we examine one of the strongest influences on neighborhood mobility decisions: the perception of a neighborhood's level of crime. By exploring the racial and nonracial determinants of perceived levels of crime in a neighborhood, we hope to provide a

better understanding of the neighborhood sorting process associated with persistent racial segregation.

We begin by reviewing the social psychological literature on stereotypes, focusing on the ways in which generalized group attributions may influence perceptions of neighborhood crime. We then use data from survey respondents who were asked about perceptions of their neighborhood matched with data on actual neighborhood characteristics to investigate three primary questions: (1) how is the presence of blacks in neighborhoods associated with perceptions of neighborhood crime? (2) To what extent can the relationship between neighborhood racial composition and perceived crime be explained by other correlated neighborhood conditions? Finally, (3) does the association between racial composition of the neighborhood and perceptions about the neighborhood vary depending on the race of the perceiver?

We find that the percentage of a neighborhood's black population, particularly the percent of the population young black men, is significantly associated with perceptions of the severity of the neighborhood's crime problem. This relationship persists under controls for official neighborhood crime rates, as well as a variety of other individual and neighborhood characteristics. Comparing the effects of these variables on perceptions among whites and blacks, we find some evidence that the negative effect of percent black is stronger for white survey respondents than for black survey respondents. The implications of these findings are discussed with respect to the causes of racial segregation.

Prior Research

Race and White Avoidance

Despite recent increases in some measures of racial tolerance, most whites do not want to live in neighborhoods with more than a small percentage of the population African-American. On attitude

surveys, most whites say they would prefer neighborhoods where no more than 30% of the population is black (Clark 1991). More than half of whites say they would not move into a neighborhood that is one third black or more (Farley and Frey 1994). Studies of actual patterns of mobility confirm these preferences, showing that in neighborhoods with more than a few black families, white housing demand tends to collapse (Massey, Gross, and Shibuya 1994; South and Crowder 1998; Quillian 1999). Whites consistently move out of neighborhoods with growing black populations and very few new whites move in, ensuring that many of these newly integrated neighborhoods will soon become predominately black (Schelling 1971).

Though whites clearly and consistently avoid neighborhoods with large numbers of blacks, we cannot assume this to be evidence of revealed racial prejudice. Whites may avoid neighborhoods with many black residents not because of an aversion to neighbors who are black but because black neighborhoods on average have higher rates of neighborhood problems like high crime rates and dilapidated housing stock (Frey 1979; Taylor 1981; Liska and Bellair 1995; Liska, Logan, and Bellair 1998). Taub, Taylor, and Dunham (1984) find that individuals respond most strongly to perceived neighborhood crime and housing deterioration in determining when to move and where to settle. When these measures are controlled, scores on a racial prejudice measure are unrelated to white moving intentions. Likewise, Harris (1997a, 1997b, 1999) analyzes correlates of housing prices, movement out of integrated neighborhoods by whites, and overall neighborhood satisfaction. Harris shows that in predicting all three of these outcomes, the coefficient of the percentage black in a neighborhood drops significantly, and in some cases to zero, when controls are introduced for a number of other neighborhood characteristics. He concludes, like Taub, Taylor, and Dunham, that whites avoid black neighbors primarily for reasons other than race.

According to these studies, individuals respond to neighborhood problems in determining the

decision to move and the choice of destination. This is closely associated with race, they argue, because "the resident, whether black or white, is aware that these problems [crime and deterioration] tend to be more severe in areas of high minority concentration" (Taub, Taylor, and Dunham, 1984:181). Neighborhood racial composition, then, may merely serve as a proxy for objective conditions that affect neighborhood quality.

If whites are averse to black neighborhoods only because of characteristics correlated with race, rather than because of race itself, then one path to neighborhood racial integration is to reduce the correlation between neighborhood racial composition, poverty, and crime rates. As Harris (1999) points out, this argument has optimistic implications for the possibility of racial integration. Improvement in the economic status of the black population should then gradually translate into greater spatial integration without additional measures to reduce segregation.

Perceptions of Crime

The studies discussed above make the important point that the extent of neighborhood social problems, especially neighborhood crime, are central factors contributing to white population decline in integrated neighborhoods. A key issue that we believe is not adequately explored in these studies, however, is the role of neighborhood *perceptions*. Perceptions of neighborhood crime necessarily mediate between actual neighborhood crime and the decision to move. While prior research has often assumed a close correspondence between perceived and actual crime, Taub, Taylor, and Dunham (1984) report substantial variation in perceptions of neighborhood crime controlling for official measures of crime rates; further, they find that *perceptions* of crime more strongly predict the intention to move out of a neighborhood than do official crime rate measures.

Although perceptions of neighborhood crime are, of course, influenced by reality (McPherson

1978), research suggests they are *not* just a reflection of reality (Bursik and Grasmick 1993). Reports of disorderly or uncivil conduct and visible signs of neighborhood housing deterioration also have a marked impact on perceptions of neighborhood crime (Taub, Taylor, and Dunham 1981; Wilson and Kelling 1982; Skogan 1990; Perkins and Taylor 1996; Sampson and Raudenbush 1999). That most neighborhood perceptions reflect multiple influences beyond the level of crime suggests that their use for gauging actual neighborhood conditions requires caution.

A potentially important aspect of the neighborhood environment that may influence the perception of crime is neighborhood racial composition. Several past authors have suggested race may have an important influence on fear of crime (see Bursik and Grasmick 1993, pp. 104-109 and Skogan 1995 for reviews). As discussed further below, however, empirical work has not satisfactorily established the relationship between neighborhood racial composition and perceived crime. Two factors make us believe that a neighborhood's racial makeup is especially likely to influence the perception of neighborhood crime.

First, a neighborhood's racial composition is a readily observable characteristic, especially in the segregated United States where most neighborhoods fall into the category of either mostly white or mostly black. Other factors like economic class or poverty are more difficult to gauge based only on physical appearance. This is consistent with the longstanding theory in urban sociology that city dwellers rely heavily on visual cues to evaluate the threat of strangers in public places (e.g. Lofland 1973; Anderson 1990; Duneier 1999). Age, race, and sex are among the most obvious and important of these cues.

Second, stereotypes associating members of certain minority groups, in particular African-Americans, with crime are pervasive and well-known by all Americans (Devine and Elliot 1995). As

discussed further below, we suspect that these stereotypes are sufficiently powerful that they will lead to perceptions that black neighborhoods have higher rates of crime than they actually do.

If the *perception* of a neighborhood's crime problem is heightened by the proportion of minority residents, above and beyond any true association between racial composition and crime rates, then racial composition may have an influence on white mobility intentions or neighborhood satisfaction through its effect on these perceptions. Even if neighborhood evaluations and decisions to move may be largely determined by nonracial considerations, such as perceptions of neighborhood crime, if these perceptions are themselves influenced by racial context, then they can no longer be thought of as race-neutral.

Race, Criminality, and Stereotypes

That African Americans are more likely to have violent and criminal dispositions is one of the most readily invoked contemporary stereotypes about blacks. Survey respondents consistently rate blacks as more violence-prone than any other American racial or ethnic group (Smith 1991). On one 1991 survey, 52 percent of whites rated blacks as a 6 or higher on a 1 to 10 scale of aggressiveness or violence, with the aggressiveness and violence stereotype the most readily endorsed on a list of five (Sniderman and Piazza 1993, p. 45).[2] And unlike racial attitudes toward the principle of equal treatment, there is evidence that the association of blackness and criminality has not changed in recent years.[3] The stereotype of blacks as criminals is widely known and is deeply embedded in the collective

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[2] Similar results were obtained on the 1992 General Election Survey and the 1990 General Social Survey (Pfeffley and Hurwitz 1998, n. 3; Bobo and Kluegel 1997).

[3] Farley, Bianchi, and Colasanto (1979) found that 59% of whites in the 1976 Detroit Area Study rated blacks as more prone to violence than whites, a finding similar to that of modern studies cited above. On trends in racial attitudes toward the principle of equal treatment see Schuman, Steeh, Bobo, and Krysan (1997).

consciousness of Americans, irrespective of the level of prejudice or personal beliefs (Devine and Elliott 1995).

Many accounts of stereotypes emphasize their cognitive utility in the face of incomplete information. Similar to other forms of cognitive categorization, stereotypes, some argue, represent largely accurate representations of target group characteristics (e.g. McCauley 1995).[4] Other psychological accounts, on the other hand, view stereotypes as strongly influenced by motivational biases and cognitive distortions, and therefore as largely inaccurate (e.g. Katz and Braly 1933; Adorno et al. 1950). In these theories, stereotypes arise from emotional needs to enhance or justify the position of one's own racial group relative to other racial groups. Inaccurate information from the mass media or other sources may also contribute to persistent stereotypes (Reinarman and Levine 1989; Hurwitz and Peffley 1997).

We agree that to some extent stereotypes function as cognitive maps or categories used in the absence of reliable individual information.[5] But we also suspect that these cognitive maps tend to contain systematic inaccuracies. A combination of negative media depictions of African-Americans, historical stereotypes, and ethnocentric biases are likely combined to form distorted perceptions in which the association of blackness and criminality is systematically overestimated.

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[4] The accuracy of stereotypes at the group level is also postulated in economic theories of statistical discrimination, in which discrimination results from rational guesses based on the social correlations of individual characteristics (Aigner and Cain 1977).

[5] We doubt that cognitive maps that are wholly inconsistent with simple correlations among real world variables would persist over time, but we believe subtle distortions may do so. Studies find that black neighborhoods do on average have higher rates of crime than white neighborhoods, although the association of neighborhood racial makeup and crime tends to disappear in models that control for non-racial variables correlated with race, such as economic class variables (Sampson 1987; Bursik and Grasmisk 1993). The bivariate correlation between neighborhood racial makeup and crime rates is no doubt one reason that stereotypes associating race and crime remain widespread.

Once established, stereotypes and the expectations they engender influence judgments and actions. This process can be subtle, in some cases operating without the subject's conscious awareness that a racial stereotype has been invoked. In mock trials that experimentally manipulate the race of the defendant, African Americans have been found to receive harsher judgments of guilt and punishment than white defendants in otherwise identical cases (Sweeney and Haney 1992; Rector, Bagby, and Nicholson 1993).   In experiments in which black and white figures perform identical acts, the black figure's behavior is usually seen as more threatening and predatory than the white figure's behavior (Duncan 1976; Sagar and Schofield 1980). Likewise, in surveys asking about fear of strangers in hypothetical situations, respondents are more fearful of being victimized by black strangers than by white strangers (St. John and Heald-Moore 1995, 1996).

Laboratory studies further suggest that information that is consistent with a stereotype is more likely to be noticed and remembered than information that is not (Rothbart, Evans, and Fulero 1979). This makes stereotypes resilient because information contradictory to the stereotypes is likely to be discounted. In addition to directly influencing judgments of the seriousness of neighborhood crime, then, stereotypes may also lead to selective attention and interpretation of media reports about crime in a way that reinforces the mental association between race and crime.

The psychological literature on stereotypes thus provides considerable evidence that stereotypes may guide judgments and distort perceptions. Although most past research has examined the attribution of stereotypical categories to individuals, we suspect that these processes influence perceptions of neighborhoods as well. Stereotypes about blacks are likely to color perceptions of predominately black neighborhoods as areas of pervasive criminality and violence.

The Application of Racial Categories

In laboratory experiments, the more closely a target's attributes are consistent with the characteristics of a stereotypical category, the more likely that category is activated in forming judgments about the case (see Fiske and Neuberg 1990, pp. 25-26 for a summary). Hurwitz and Peffley (1997) find that while racial stereotypes influence judgments about appropriate punishment for criminals, this influence is reduced in the presence of individuating information that is inconsistent with the racial stereotype. Likewise, Gordon et. al. (1988) find that racial sentencing disparities in a series of mock jury experiments tend to be larger for defendants accused of a typically "black" crime (robbery) than for defendants accused of a typically "white" crime (embezzlement). In general, stereotypes are most likely reinforced when individuals or groups match on more than one dimension of a stereotypical category.

In terms of neighborhoods, we suspect that racial stereotypes linked to crime are most likely to be activated by the presence of neighborhood residents who most closely approximate the profile of likely criminals. Elderly black women in a neighborhood are not likely to induce perceptions of the neighborhood as crime ridden because they do not fit the portrait of a typical street criminal. Teenagers and young adults, on the other hand, have long been seen as a potential source of trouble. Skogan and Maxfield (1981, pp. 92-93) describe teenage peer groups as acting like a "broken window" to signal crime. These concerns apply especially strongly to young black men, as Anderson (1990) documents in describing social interaction in the racially mixed "village" area. Both because of typical media portrayals and the demographic fact that young men commit a disproportionate share of all crime, we suspect that the presence of *young* black men is especially likely to activate stereotypes linking race and criminality, and thus influence perceptions of the neighborhood's crime level. Accordingly, we focus on the influence of the share of the neighborhood's population that is young black men on perceptions of crime.

Race of Perceiver and Stereotypes

If stereotypes are purely cognitive representations of behavioral differences among groups, then the content of stereotypes should be the same among the group that is the target of the stereotype as for groups that are not. In support of this view, there is some evidence that members of groups that are targets of stereotypes themselves hold certain dominant stereotypical beliefs, including negative stereotypes about their own group (Sagar and Schofield 1980; Nightingale 1993).

Contrary to this view, many studies find tendencies to evaluate the characteristics of other groups less favorably than one's own (for reviews see Brewer 1979, Judd and Park 1993). Some research also finds that stereotypical beliefs tend to influence judgments less for members of groups that are targets of the stereotype than for those who are not, perhaps because of better understanding of nonracial cues among in-group members (Judd and Park 1993).   Anderson (1990), for example, argues that the mental association of race and criminality influence the judgements of both black and white residents, but black residents use more individuating information to distinguish more from less dangerous young black men than do white residents.

Consistent with our perspective that stereotypes function cognitively, but with ethnocentric distortions, we expect that the racial composition of a neighborhood will influence perceptions of the crime level of the neighborhood for respondents of all races. We expect that the association between blackness and criminality, however, will be weaker for blacks than for members of other racial groups.

Racial Composition and Perceptions of Neighborhood Crime

A handful of studies have explored the relationship between fear of neighborhood crime and neighborhood racial composition.[6] Stinchcombe et. al. (1980) and Moeller (1989), for example, find that survey respondent's self-reports of proximity to a black neighborhood or self-reports of neighborhood racial composition are positively associated with fear of criminal victimization. Because these studies rely entirely on respondent self reports, however, the direction of causality may be reversed: it could be that whites perceive their neighborhood as having more blacks when it has a higher rate of crime.

Chiricos, Hogan, and Gertz (1997) and Covington and Taylor (1991) partially remedy this problem by including real measures of neighborhood racial composition from census sources in predicting survey respondent's fear of crime.[7] While the results of these two studies reinforce the finding of earlier research regarding the strong association between neighborhood racial composition and fear of crime, one major omission continues to leave the results of these studies highly ambiguous. Primarily, these studies have not been able to refute the alternative interpretation that the association between neighborhood racial composition and fear of crime may simply reflect an association between race and actual levels of crime. None of these studies has measures of crime rates that are not based on the respondents' estimates.[8] Ultimately, each of these studies is limited by reliance on survey respondents' reports to measure racial composition and/or crime rates. Their lack of outside evidence

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[6] A separate line of research considers neighborhood racial composition effects on evaluations of the perceived "quality" of real or hypothetical neighborhoods (St. John and Bates 1990, O'Brien and Lange 1986, Harris 1997b). These studies do not evaluate the extent to which evaluations reflect concerns about crime.

[7] Chiricos, Hogan, and Gertz (1997) include both perceived and census-based measures of percent black, finding a strong association between perceived racial composition and fear of crime. Covington and Taylor find that blacks in white neighborhoods and whites in black neighborhoods are especially fearful. They argue this supports Merry's (1981) theory that racial heterogeneity tends to increase perceptions of crime.

[8] The same argument could be made for measures of neighborhood incivility. Incivilities and disorderliness are important influences on fear of crime independent of real crime rates (Skogan and Maxfield 1981; Wilson and Kelling 1982; Skogan 1990). None of these past studies controls for this factor.

on neighborhood characteristics leaves the results fundamentally ambiguous, given that we have no way to gauge the correspondence between perceptions and reality.

Liska, Lawrence, and Sanchirico (1982) examine the effect of racial composition of metropolitan areas on fear of crime in a study which includes real measures of racial composition and crime rates. They find that fear is higher in metropolitan areas with higher percentages black, controlling for two measures of crime rates. These results suggest that whites may be more fearful in blacker environments, and they conclude that this likely results from cultural stereotypes. Because entire metropolitan areas are the unit of analysis, however, they are not able to directly establish a link between neighborhood environment and crime.

Our study improves on past research by including direct measures of both perceived and objective (based on census or official statistics) neighborhood characteristics. In doing so, we are able to examine the relationship between racial composition and perceived neighborhood crime without the confounding problem of real versus perceived associations.

We argue that neighborhood racial composition may systematically bias evaluations of neighborhood crime problems, even among neighborhoods with identical rates of "real" crime. We expect that perceptions of neighborhood criminality are especially likely to be cued by young black men, and that these stereotypes are likely to have more influence on the perceptions of white than black respondents.

Data and Methods

We use three sources of data, each of which contain both individual and neighborhood characteristics: the Crime Factors and Neighborhood Decline in Chicago study, directed by Richard Taub and D. Garth Taylor (Taub and Taylor 1997); the Testing Theories of Criminality and Victimization in Seattle Study, directed by Terrence D. Miethe (Miethe 1998); and the Crime Changes in Baltimore Study, directed by Ralph Taylor (Taylor 1999). Each study has strengths and weaknesses for our purposes.

The Chicago Crime Factors and Neighborhood Decline study is based on telephone surveys conducted with about 3300 heads of households in eight Chicago community areas in 1978. The eight community areas were chosen for their diversity in terms of crime rates, racial composition, and property values. About 400 heads of households were selected in each community area using random digit dialing and screened for street name and block number. Respondents were asked many questions about their neighborhood including several questions about their perception of their neighborhood's level of crime. The study also provides a set of data about the neighborhoods of the survey respondents, including crime rate data from the Chicago Police Department and measures of apparent housing and neighborhood deterioration based on ratings by members of the Crime Factors and Neighborhood Decline staff. For more on the Chicago Crime Factors and Neighborhood Decline study, see chapter 2 and the Appendices of Taub, Taylor and Dunham (1984).

The Chicago study initially surveyed 3312 respondents. We include only the 3233 respondents who answered the race question and identified themselves as white, black, or Hispanic. Of these, 222 respondents were missing on one or more of the questions about crime that we used to form the dependent variable and an additional 215 cases were missing on one or more of the independent variables.[9] This left us with the base sample of 2796 respondents used for the models in the results section, except where otherwise noted.

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[9] Cases missing on an independent variable are excluded from the analysis, except for the income variable. See

The Testing Theories of Criminality and Victimization in Seattle Study interviewed 5,302 residents in 100 neighborhoods in Seattle. While the survey itself focused on individual-level attitudes and experiences, the data include tract identifiers, allowing us to match respondent information with neighborhood demographic information from Census sources and official crime statistics from the Seattle Police Department. Unfortunately, unlike the other two datasets, these data contain no information regarding neighborhood physical appearance. We include the 4785 respondents who self-identified as either black or white (the Hispanic category was not included in these data). After eliminating cases with missing data on the dependent or independent variables used in our models, we retained a sample of 4494 respondents. For more information about the design and content of the Seattle study, see Miethe (1991).

The Crime Changes in Baltimore Study interviewed 704 respondents in 30 Baltimore Neighborhoods in 1994. Like the Chicago study, the Baltimore study included both interviews with neighborhood residents and assessments of neighborhood physical appearance by a staff of trained raters. We included the 673 respondents who answered the race question and identified themselves as white, black or Hispanic. After eliminating cases with missing data on the dependent or independent variables used in our models, we ended with a base sample of 609 respondents. For further details on the Baltimore study and an explanation of its sampling scheme, see Taylor (1999).

To measure the characteristics of neighborhoods, we use small area data from the 1980 census summary tape files for Chicago and the 1990 summary tape files for Seattle. In Chicago and Seattle, we append tract level data from the census to maintain a consistent level of neighborhood geography.[10]

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the discussion of the income variable, below.

[10] Studies find that often residents in a particular area disagree about the exact boundaries of their neighborhood (Furstenberg et al. 1999), making the empirical measurement of neighborhood units problematic. Given the constraints on systematic measurement of neighborhoods, we believe census tracts represent the closest approximation available for quantitative analyses. Census tract boundaries are drawn by census tract committees to account for natural boundaries and population characteristics in a fashion that does create units

Unlike the Chicago and Seattle studies, census tract identifiers are not available for Baltimore survey

respondents. Instead, respondents are matched to a set of neighborhoods defined by expert

assessments and detailed in the *Baltimore Community Fact Book* (Goodman and Taylor 1983).

These neighborhood units are on average somewhat smaller (mean population 2000) and more variable

in size than tracts. Taylor and his colleagues created a file of demographic characteristics by allocating

census tabulations from block group data.

Descriptive statistics for the three samples are shown in appendix A.

Measures and models of perceptions of neighborhood crime

The perception of the crime level of the respondent's neighborhood is the major dependent variable of

our study. We use measures of perceived severity of the neighborhood crime problem rather than fear

of crime or personal risk of becoming a victim because it is the assessment of *neighborhood* crime that

we are most interested in, given its association with neighborhood evaluations and mobility decisions.

The Chicago study includes three measures that gauge respondents' perceptions of their

neighborhood's level of crime.[11] We subjected these three variables to a factor analysis. All three items

loaded on a single factor, which are shown in table 1. We generated factor scores from the results,

which are used in the subsequent analyses as the dependent variable. [12]

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that are meant to represent natural social aggregates. See White (1987), Appendix A and B for a discussion of
how census tract boundaries are drawn.

[11] The Chicago study also includes five measures that gauge fear of crime or the respondent's assessment of
victimization risk. We performed a factor analysis to confirm that these five measures represent distinct
evaluations from the three items measuring perceptions of neighborhood crime. The three measures tapping
perception of neighborhood crime loaded on the (rotated) first factor, while the other five items loaded on a
second factor. We have also run our results using a factor score generated from this eight-item factor analysis,
including those with small loadings, rather than the three item factor analysis discussed in the text. None of the
substantive results change with this modification of the dependent variable.

[12] The eigenvalue of the extracted factor was 1.25. The second factor had an eigvenvalue only slightly greater
than zero. An eigenvalue of greater than 1 is a common criteria for factor retention (Kim and Mueller 1978). The
factor scores were generated with regression scoring. We also found substantially the same results from a series

[Table 1 about here]

The Chicago study chose respondents from census tracts in eight selected Chicago community areas. As a result, the data are clustered, with individuals in census tracts and tracts in community areas. To account for this clustering, we use a multilevel model with variance components at both the individual and census tract levels (Bryk and Raudenbush 1992; Goldstein 1995).[13] We ran an additional set of models with a third level variance component for community area, but in most models the estimated variance at the community area level was zero. The models reported here, therefore, do not include this highest level variance component. We estimated the models using the program MLn (Rabash and Woodhouse 1996).

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of models estimated using a structural equation model that treats these variables as indicators of a latent construct, estimated in the program M-Plus.

[13] In other words, we allow the intercept to vary randomly at the individual and tract level. In some models we also allowed the coefficient of black race to vary randomly, but this alteration had no influence on the results. See the results section below for further discussion.

Both the Seattle and Baltimore studies included only one question that closely matched the questions we used with the Chicago study. For our analyses with the Seattle data, the dependent variable is the single survey question: "Is this neighborhood safe from crime?" The answers are coded from very unsafe (4) to very safe (1). In the Baltimore data, the question reads, "Now I'm going to read a list of things that are problems for some people in their neighborhood. For each item I'd like you to tell me if it's a big problem, somewhat of a problem, or not a problem in your neighborhood. How about . . . Crime?" Possible answers are a big problem (3), somewhat a problem (2), and not a problem (1). Because the dependent variables are measured on an ordinal scale, we use ordered logit models (proportional odds models) to estimate the effects of the neighborhood characteristics on neighborhood perceptions. We account for the nested nature of our data by correcting the standard errors for clustering of respondents within tracts using Taylor series linearization methods.[14]

Our primary objective in this study is to evaluate the association between the racial composition of neighborhoods and perceptions of the neighborhood's crime problem. An obvious objection to our study is that any association between these variables may reflect the spurious influence of some omitted variable correlated with both racial composition and perceptions of crime. In order to address these threats, we control for a wide variety of other factors that we expect, or past literature suggests, influence the perception of crime.

First among the variables that we consider important to control for is the actual rate of crime. Although we expect that perceptions will be influenced by more than just real crime, we have reason to believe that real crime is probably a major influence on perceptions of crime; past research has usually found a strong association between the two (McPherson 1978; Skogan 1990 ch. 4).

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[14] This correction was performed using Stata statistical analysis software. For more information on Taylor series

Measuring rates of neighborhood crime

In all three datasets we control for crime rates based on official statistics. We control for number of crimes (of types described below) per 1000 persons, calculated from crimes reported to the Chicago, Seattle, and Baltimore Police Departments, respectively. Data on 1978 crimes from the Chicago Police Department were matched to the tract of each respondent by the principal investigators of the Chicago study (for details see Taub, Taylor, and Dunham 1984). Data on crimes for Seattle were obtained from the Seattle Police Department and were matched to the Seattle study by the present authors. The Seattle crime rate is based on crimes reported for the years 1988-1990. Data on crimes for Baltimore were obtained by Taylor and his colleagues from the Baltimore police department and were statistically allocated by Taylor from police reporting units to the neighborhood units used in his study. The Baltimore crime rate is calculated based on crimes reported for the years 1990-1992. We logged the police reported crime rates because in raw form the variable was highly skewed.[15] The crimes included are homicide, rape, assault, robbery, burglary, and theft (and in Seattle, arson).

Crimes reported to the police have well-known shortcomings as measures of actual neighborhood crime. Many crimes that occur are not reported to the police. This may be, for instance, because people do not speak English, fear contact with the police, or resort to calling private security services. Less serious crimes are especially underreported.[16] Further, studies suggest that in some cases the police do not record crimes that are reported to them (Schneider and Wiersema 1990). Again, this is particularly likely for less serious crimes. Thus, official crime rates tend to underestimate the extent of actual crime.

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linearization methods to adjust standard errors, see Kish and Frankel (1974).

[15] All tracts had crime rates greater than zero.

[16] If the most serious crimes have the greatest influence on perceptions of crime, then the bias induced by this underreporting is not likely to be of great concern.

To reduce bias that may result from this problem, we also use a second measure of crime based on victimization questions available on the Chicago and Seattle surveys. We estimate the rate of victimization per 1000 tract residents based on the proportion of respondents in the Chicago and Seattle surveys who report having been the victim of a crime.[17] The limitation of this second measure is that it suffers from sampling variation in the estimate because it relies on reports from a small share of the residents from each tract to estimate the overall victimization rate.[18] It has the substantial advantage, however, that it is much less likely to underestimate the actual rate of crime.

These crime and victimization measures aggregate all forms of crime together to form single indicators. The Chicago data allows us to further break this down into personal and property crime; using these separate measures in place of a single measure has no influence on our results (not shown). In Baltimore and Seattle we can further break our aggregate measures down to specific crimes: aggravated assault, burglary, homicide, larceny, auto theft, rape, and robbery (and for Seattle, arson). There is a high correlation of rates of specific crimes across tracts; statistical power to separately estimate these effects is low. If we include these individual measures in our basic models, dropping the least significant indicators to reduce multicollinearity, we find the same basic results as we find using a single indicator (not shown).

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[17] In the Chicago data, the victimization variable was constructed by the principle investigators to reflect the proportion of residents reporting *any* victimization experience. In the Seattle data, we are able to better approximate the level of victimization occurring in each neighborhood by aggregating the *number* of victimization experiences (with some individuals contributing more than one incidence). Our individual level variables similarly reflect the somewhat different coding schemes. In Baltimore we do not have available measures of victimization experience that cover a wide variety of crimes, paralleling our measure from official statistics. Thus, we do not include a measure of neighborhood victimization in the models for this dataset.

[18] There are an average of 25.6 respondents per tract in the Chicago data, with the 1st and 3rd quartiles at 13 and 34 respondents, respectively. The victimization rate data is based on victimization experiences in the last 15 to 18 months. In the Seattle data, there are an average of 43 respondents per tract, with the 1st and 3rd quartiles at 41 and 47 respondents, respectively. This victimization rate data is based on victimization experiences at current home or within 4 blocks of home in the past two years.

Individual and neighborhood controls

Once we have controlled for reported levels of neighborhood crime, we expect perceptions of crime to be further influenced by a combination of individual and neighborhood characteristics. Past literature consistently finds that women tend to be more fearful of crime than men and the elderly to be more fearful of crime than the young (Stinchcombe et. al. 1980; Skogan and Maxfield 1981; Box, Hale and Andrews 1988). We suspect that these characteristics also influence perceptions of a neighborhood's crime problem. We additionally control for the family income of the survey respondent, the respondent's years of education, and the respondent's race.[19]

Our second set of predictors are measured at the neighborhood level. Most importantly, we expect that perceptions of crime will be greater when there are more blacks in a neighborhood. As discussed above, we believe that racial stereotypes are especially likely to be activated by the presence of young black men. Correspondingly, we include the percent of the neighborhood population young black men aged 12 to 29.[20] This is the key independent variable of interest in our models.

We also expect that other neighborhood characteristics may influence perceptions of crime. Thus, we control for several additional features of the neighborhood's demographic and economic composition. To make sure that it is really young *black* men that provoke perceived crime, rather than *young* men in general, we include percentage of the population of all races in the neighborhood that is 12 to 29 years old. We also include percent of the population Latino, since this group may well be subject to some of the same stereotypes as blacks.

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[19] In all three of our surveys, an income question was asked using response categories. We use dummy variables to represent these categories. Because nonresponse on the income question was more common than other items on the surveys, rather than discarding these case we included an additional category for respondents who are missing on the income question. All other missing values were handled by listwise deletion.

[20] This variable was extracted from the seldom-used 1980 Summary Tape File 4.

In the Baltimore data, we are constrained in the availability of census data to measures that were allocated from census tabulations by Taylor and his colleagues to the neighborhoods used in his study. In this case, the percent young black men is not available.[21] Instead, we use simply percent of the neighborhood population that is black. Although we expect that percent young black men will be a stronger predictor of perceived crime than percent black overall, in the Chicago and Seattle data these two measures correlate above .9, and behave nearly identically when we substitute one in the place of the other in statistical models. A similar constraint applies to our measure of the neighborhood age structure, where in place of the percent of the population young men 12-29, in Baltimore, we control for the percent of the population age 14-34.

As controls for the income levels of neighborhood residents, we divide the neighborhood population into three categories: poor, middle, and affluent. Measures of the share of poor and affluent persons in the census tracts are included in our analysis; middle class persons are the excluded category. The percent poor measure is the percentage of persons living in families with income below the official U.S. government poverty needs standard. The percent affluent measure is the percentage of families with income above $30,000 in 1980 dollars in the Chicago data. For the Seattle data, we used percent of the families with income above $50,000 in 1990, a cutpoint roughly equivalent to $30,000 in 1980.[22] Our Baltimore neighborhood data lacks a similar measure. Instead, we use percent of employed persons who are in managerial or professional occupations.

Finally, we examine the effect of indicators of neighborhood physical deterioration and neighborhood incivilities. In many criminological accounts, these factors are thought to have an important role in influencing perceptions of crime (Wilson and Kelling 1982; Skogan 1990; Sampson and Raudenbush 1999).

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[21] Percent of the population Latino is also not available for the Baltimore data.

Both the Chicago and Baltimore studies include measures of neighborhood physical appearance. These measures were gathered by a trained staff of raters using block rating instruments, as described in Taub, Taylor, and Dunham (1982) and Taylor, Schumaker, and Gottfredson (1985). In both studies a randomly selected subsample of blocks within each neighborhood was rated. Block reports were then averaged to the Chicago tract or Baltimore neighborhood level.

From these block ratings, eight measures of neighborhood physical appearance are available in the Chicago data. We subjected these eight measures of neighborhood physical appearance to a factor analysis.[23] Only a single extracted factor had an eigenvalue of greater than one, and was thus retained. Again, we generated factor scores from the resulting factor using regression scoring as an indicator of neighborhood physical deterioration. As measures of neighborhood social incivilities, we use survey questions asking respondents to rate the extent to which noisy neighbors and insults among persons on the street are a problem.[24] These last two questions inject a subjective element into our controls that we would prefer to avoid, but there are no more objective measures of neighborhood social incivilities in our dataset. Fortunately, we expect any misspecification which may result from the use of these subjective measures as independent variables should have a conservative bias, as we explain in the results section below.

With respect to the Baltimore data, Taylor and his colleagues have performed extensive efforts to develop and validate measures of neighborhood physical appearance as measures of social disorder using an earlier 1982 survey of Baltimore neighborhoods (see Taylor, Schumaker, and Gottfredson

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[22] $50,000 in 1990 was equivalent to about $29,282 in 1980, CPI adjusted.

[23] The eight items were measures of the percent: broken windows, lawns showing neglect, lawns exhibiting litter, lawns with cans, lawns with large litter, parkways with litter, parkways with cans, and parkways with large litter. The denominator is the total number of each item on the rated block, e.g. the number of windows counted by the survey team.

[24] The exact question wording reads, "How big a problem do you have with noisy neighbors; people who play loud music, have late parties, or have noisy quarrels?" The second question reads, "How big a problem do you have with people who say insulting things or bother people as they walk down the street?" These questions

1985). Five indicator variables of neighborhood physical appearance developed in the 1982 survey are available in the 1994 data.[25] Following Taylor et al. (1985), we performed a factor analysis to create a single measure of neighborhood deterioration from these indicators. The five variables loaded on a single factor; we used regression scoring to generate a factor score as an indicator of neighborhood physical deterioration.

Results

The Chicago Study

Table 2 shows results based on the 1979 Chicago data, with perceived level of neighborhood crime as the dependent variable. Additional control variables are added across models. The multi-level models in table 2 include tract and individual-level error components. [26]

[Table 2 about here]

Model one serves as a baseline, with perceptions of neighborhood crime estimated as a function of neighborhood racial makeup, the age structure of the neighborhood population, and a set of individual-level controls. Respondent characteristics we control for are sex, race, age, highest year of education completed, income in 4 categories, and personal victimization experience.[27] Also included is a variable interacting race of the respondent and percent young black men, to allow the effect of neighborhood

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were rated: (3) big problem, (2) somewhat of a problem, or (1) not a problem at all.

[25] The five factors are measures of: proportion of units vacant or boarded up, proportion of units empty, average proportion of raters assigned to the block who noticed graffiti, proportion of houses with well-tended plants, and proportion of houses with well-maintained buildings.

[26] In models with an intercept only (not shown), the variance at the individual level is .613 and at the tract level is about .063. While slightly less than 10% of the variation is at the tract level, the "true" share of variation at the tract level is almost surely larger because the individual level variance component also captures measurement error.

racial composition to vary by race of respondent. Of these, sex and past victimization of the respondent or a household member are significantly associated with the perception of crime. Persons who have been victimized are about a half of a standard deviation higher in their perception of the neighborhood's level of crime.

With respect to neighborhood racial composition, there is a very strong association between percent of the population young black men (age 12-29) and perceptions of a neighborhood's crime problem. A one standard deviation increase in the percentage of the neighborhood's population young black men increases perceptions of crime by .3 of a standard deviation. In standardized terms, that is a larger effect than any of the other independent variables.[28] Without other neighborhood controls, however, this may just reflect an association between percent young black men and other nonracial characteristics of the neighborhood (e.g., economic composition, real crime rates, etc.).

The second model adds our two measures of crime rates: one based on crimes reported to the Chicago police department, the other based on victimization reports aggregated to the neighborhood level.[29] It also adds controls for the economic composition of the neighborhood population, percent poor and percent affluent. Only the measure of crime based on police reports is significantly related to the dependent variable. Controlling for two measures of crime rates and neighborhood economic composition does cause the effect of percent young black men on perceptions of crime to decline by about one-third (compared to model 1). Some of the association between neighborhood racial composition and fear of crime, then, is due to nonracial neighborhood conditions correlated with racial

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[27] A quadratic term for age was consistently nonsignificant.

[28] The second and third strongest standardized coefficients are for individual victimization (.25) and percent Hispanic (.15).

[29] A closely related procedure would be to first regress perceived crime on actual crime, then to regress the residuals from this regression on neighborhood racial composition and other variables. Mathematically, this procedure and the one we use are similar; if the other independent variables in the second stage regression were also first regressed on actual crime, this procedure would lead to estimates identical to those shown in our tables (Greene 1993, pp. 179-180). Our procedure is preferred because in the first-stage regression of perceived on actual crime, the coefficient of actual

makeup. Most of the effect, however, is not mediated by our individual and neighborhood controls.

The effect of young black men remains strong and statistically significant throughout. A one standard

deviation increase in the percent of a neighborhood's population young black men is associated with an

increase in perceptions of neighborhood crime by about .23 of a standard deviation. That is a larger

standardized association than the logged crime rate (.09) or any of the other neighborhood variables.[30]

As hypothesized, neighborhoods with a higher percentage of young black men do have higher

perceived rates of crime, even when controlling for actual measures of the crime rate. The effect of

percent young black men on perceptions of crime appears to hold for both black and white

respondents, with no significant difference by race of respondent.   Despite controls for several aspects

of neighborhood population structure and two measures of crime rates, we find that neighborhoods with

more young black men are perceived as having a higher rate of crime. This strong influence of

neighborhood racial composition on perceptions of crime, net of official crime rates and victimization

reports, suggests that neighborhood residents take strong cues from the race of their surrounding

neighbors, systematically inflating their perceptions of crime in the presence of blacks nearby.

A final variable that past studies suggest may be important for perceptions of neighborhood

crime are visible signs of neighborhood "disorder" or "incivility" (Wilson and Kelling 1982; Skogan

1990; Perkins and Taylor 1996). Signs of disorder may be present in the physical environment through

decrepit and poorly maintained private and public spaces, and in the social environment through

"disorderly" acts such as public rowdiness and threatening behaviors.   It is possible that neighborhoods

with many young black men tend to have visual cues suggesting disorder, and that it is this disorder,

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crime would be biased by failure to control for other neighborhood characteristics correlated with it.

[30] The standardized effect of percent of the population young black men in model 2 is not quite as strong as the standardized effect of individual victimization experience (.25).

rather than the correlated racial composition, which leads to the perception that these neighborhoods have high rates of crime.

We explore this possibility by introducing, as controls, measures of the social environment and physical appearance of the neighborhood. To control for aspects of the social environment, we include two subjective measures from the Chicago study. The questions ask about problems with noisy neighbors or with persons insulting other persons on the streets. Dummy variables were included for respondents who answered that these were a "big problem" or a "small problem," with "not a problem" as the omitted category. Because these are subjective measures, it is possible that they could act either as mediating variables between percentage young black men and perceptions of crime (if the perceptions of these problems is increased by the percentage young black men) or it might be that the direction of causation between these variables and the dependent variable is reversed. In either case, assuming these measures are positively correlated with racial composition, the effect of percent young black men on perceptions of crime should then be underestimated; including these controls biases the results conservatively.

Introducing these measures in model 3, we find that they are strongly related to evaluations of the severity of the neighborhood's level of crime, and their inclusion causes the size of the young black men effect to decline by about 15 percent. The effect of young black men on perceptions of crime, however, remains strong and statistically significant after these controls are added. Thus even in the presence of potentially endogenous measures of social disorder, the racial composition of one's neighborhood has a strong independent effect on perceptions of neighborhood crime.

Finally, we introduce controls for measures of the physical appearance of the neighborhood. These measures are from ratings by members of the Crime Factors and Neighborhood Decline staff

using a block rating instrument.[31] We chose eight items from the Chicago rating instrument that

measured physical deterioration, and from them created a factor score. Details are discussed above in

the methods section.

Unfortunately, the physical appearance ratings were conducted for only a randomly selected

subsample of less than half of the blocks containing survey respondents in the Chicago survey. To

maintain comparability of our models, we substituted the mean of the physical appearance rating for

these missing cases, and included a dummy variable control coded 1 for the cases where the mean was

substituted and zero otherwise.[32] The effect of percent young black is almost unchanged from model 3,

demonstrating the robust effect of racial composition on perceptions of neighborhood crime above and

beyond neighborhood physical deterioration and social incivilities.

Results: Seattle and Baltimore

The results from the Chicago data indicate that perceived crime is associated with the percentage young

black men in a neighborhood. Two potential problems in drawing conclusions from this result are that

the dataset is limited to Chicago, and the data are rather old (1978). Although the Seattle and

Baltimore data each have fewer measures of perceived crime than the Chicago study, they have the

advantages of covering two additional cities in different regions of the country and of surveying

respondents more contemporaneously (1990 and 1994, respectively). As discussed in the method

section, we have only a single question evaluating level of perceived crime for each survey; we thus use

ordinal logistic regression in the following analyses.

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[31] The housing and neighborhood appearance rating instrument is reproduced in Appendix C of Taub, Taylor, and Dunham (1984).

[32] Because the subsample of blocks rated was selected randomly we can be assured that there is no bias introduced by these missing data. We also estimated this model using listwise deletion rather than mean substitution, dropping statistically insignificant variables to increase statistical power with the smaller sample. The coefficient for percent young black men remains statistically significant but smaller than that in model 4 of

[Table 3 about here.]

Results for Seattle are shown in table 3. The first model controls for individual characteristics (race, age, education, gender, and economic status), neighborhood racial composition, neighborhood economic composition (percent poor and percent affluent), neighborhood crime rate, neighborhood victimization rate, and percentage of the total population aged 12 to 29. The results support our earlier findings that as the percentage of the population young black men increases, so does the perception of crime. In standardized terms, the percent young black men has a stronger effect on the dependent variable than any of the other neighborhood variables except for the total crime rate.[33]

As noted above, prior literature has consistently found a strong relationship between neighborhood disorder and perceptions of crime (Taub, Taylor, and Dunham 1981; Skogan 1990; Taylor and Perkins 1996). Unfortunately, the Seattle data contain no measures of physical deterioration or social incivilities based on external ratings. We do, however, have a subjective indicator of "groups of teenagers hanging around the streets [within three blocks of respondent's home]" which is likely related to perceptions of neighborhood disorder. Groups of teenagers "hanging out" are typically thought to be one of the cues to social disorder that trigger perceptions of crime (Skogan 1990). We include this measure, therefore, as a proxy for neighborhood incivilities. The drawback of this measure as an indicator of neighborhood conditions is that is suffers from the same endogeneity problems as were discussed in reference to the "noise" and "insults" items from the Chicago data. Respondents' perceptions of unruly teenagers could be affected by the racial composition of their neighborhood, in

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table 2.
[33] The standardized effect of the crime rate is .076, while the standardized effect of percent young black men is .057. The standardized effect of percent young black men is weaker than in Chicago largely because of the smaller standard deviation of percent young black men in the Seattle sample. Standardized effects are based on the standard

which case, the presence of both these terms in an equation predicting perceptions of crime would lead to understated estimates of the effect of racial composition. Again, however, the direction of bias in the coefficient of percent young black men induced by this problem is toward zero, which is conservative in terms of our conclusions.

Model 2 in Table 3 introduces the measure of teenagers on the streets, which indeed shows a sizeable effect on perceptions of neighborhood crime. At the same time, our estimates of the effect of percent young black men remains strong. Though we are unable to include objective measures of neighborhood disorder or deterioration, this model provides some evidence that the relationship between racial composition and perceptions of crime is largely independent of other neighborhood concerns.

Turning now to the results for Baltimore, shown in table 4, we see further verification of our findings. The first model controls for individual characteristics (race, age, education, gender, and economic status), neighborhood racial composition, neighborhood economic composition (percent managers and proprietors and percent poor), neighborhood crime rate, and percentage of the total population aged 14 to 34.[34] Given the rather small sample size in Baltimore (both in persons and neighborhoods), effects need to be large to be statistically significant. Despite the limited statistical power, the results are consistent with our earlier finding that as the percentage of the population black in the tract increases, so does the perception of crime.[35]

Model 2 for the Baltimore results (table 4) introduces the factor score created from measures of neighborhood housing upkeep and appearance based on trained raters from the survey team. The

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deviation of the unobserved dependent variable of the ordered logit model; see Long 1997 pp. 128-129.

[34] As mentioned above, that percent young black men is not available as an independent variable. We use percent of the population black instead. When we substitute percent black for percent young black men into the models using the Seattle and Chicago data, we find the same relationship that we find with percent young black men.

[35] An unusual result in the Baltimore data is that official measures of crime rates are not statistically significant predictors of perceived crime. This holds only in models that include our full set of predictor controls; if we eliminate

factor score is significantly related to perceptions of crime. More importantly, the effect of percent

black is not weakened by this control. Comparing standardized coefficients, a one standard deviation

increase in crime has a larger effect on the dependent variable than any of the other standardized

neighborhood level variables. Independent of external assessments of neighborhood deterioration,

therefore, neighborhood racial composition continues to exert a strong and direct effect on respondents'

perceptions of crime.

Further specification and spatial statistical issues

We have tested the results from each study under several alternative specifications. First, we

considered the possibility of non-linear effects in percent young black men (or percent black) on

perceptions of crime. Appendix B discusses analyses which investigate this problem as well as testing

for nonlinearities in the effects of other variables by race. Second, we were concerned that a fuller

accounting of the spatial nature of the data—including effects of the characteristics of adjacent tracts, or

accounting for spatial autocorrelation among tracts—might alter our results.   Appendix C discusses

these issues in greater depth and presents results of models accounting for spatial effects. None of this

supplementary analysis altered our basic conclusions. In all cases percent young black men remains a

strong and statistically significant predictor of perceptions of neighborhood crime.

Effects of the Race of the Perceiver

A notable difference between the Chicago results and those for Seattle and Baltimore is that in both the

latter datasets there is evidence of an interaction between race of the respondent and percent young

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percent poor then the crime rate measure is a significant predictor of the dependent variable.

black men in the neighborhood.[36] Though the presence of young black men in a neighborhood leads to perceptions of more crime among all respondents, evaluations by white respondents appear to be more strongly influenced than perceptions of blacks. We believe this is because racial stereotypes about blacks have a greater effect on the neighborhood evaluations of whites than blacks. Whites are less likely to have personal contact with blacks that might attenuate the impact of stereotypes, and are thus more likely to rely on abstract associations between race and crime in assessing the crime problem in their neighborhood. Ethnocentric tendencies in stereotypes could also explain this interaction. While stereotypes can often serve as "functional heuristics" in the face of incomplete information, in this case, it appears that whites may be systematically overestimating the association between race and crime.

Competing Explanations for Why Whites Perceive More Crime in Black Neighborhoods

While we consider stronger stereotypes among racial group members who are not the target of the stereotypes to represent the most plausible account of this interaction term, we can think of another plausible explanation.[37] Given that black neighborhoods, on average, have higher levels of crime than white neighborhoods, black and white residents may use different reference groups against which to judge the seriousness of their neighborhood's crime problem.[38] If white respondents use a "typical" predominately white neighborhood against which to judge the seriousness of their neighborhood's crime

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[36] This interaction is statistically significant at conventional levels in Seattle and is borderline (p=.083) in the full model for Baltimore. As mentioned above, in the Chicago data there was no such interaction, although the Chicago data had too few whites in black neighborhoods to allow precise estimation of the interaction. See also the discussion of selection issues, below.

[37] It might also be possible to argue that whites living in black neighborhoods tend to be targeted by criminals, in which case whites in black neighborhoods might experience more crime than blacks in black neighborhoods. We think this is unlikely to be a problem because the survey questions we use to form the dependent variable ask for evaluations of overall *neighborhood* crime, not for an assessment of individual risk. In any case, we were able to test for this possibility by examining victimization reports by race of respondent among blacks and whites living in neighborhoods in the top third of the neighborhood percentage black distribution. In two of our three studies there is no statistically significant difference by race in reports that one's self or one's family had been victimized by crime. More often, in fact, victims and offenders tend to be of the same race (Singer 1981).

problem, while blacks use a "typical" predominately black neighborhood against which to judge the seriousness of their neighborhood's crime problem, this could imply that blacks only consider neighborhood crime to be a "problem" at higher levels of real crime than whites. This could result in a spurious interaction between race and percentage young black men in rating the level of neighborhood crime.

Evidence from our studies, however, contradicts this interpretation. In all three of our data sets, we were able to test for an interaction between race of respondent and each of our measures of crime rates in our model of perceived crime. This model tests for the possibility that black respondents tend to evaluate neighborhoods as having less of a crime problem than white respondents, other factors held equal, and that the extent of the disparity between white and black evaluations increases as the crime rate of a neighborhood increases. In none of our three datasets did we find this pattern.[39]

Having considered the most plausible alternative interpretation, we view the Seattle and Baltimore results as highly suggestive of the role of stereotypes in activating associations between race and crime, and that these stereotypes more strongly influence the perceptions of neighborhood crime levels among members of racial groups who are not the target of the stereotype (in this case, whites). Because we did not find this result in the Chicago data, and because it was sensitive to aspects of model

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[38] See footnote 5.

[39] More exactly, this explanation implies (1) there should be an interaction between real crime rates and race, such that the slope of real crime is sharper for whites than for blacks and (2) blacks should on average always perceive less crime than whites in equivalent neighborhoods. In Chicago and Seattle we did not find any tendency for whites' perceptions of crime to increase more quickly than blacks' perceptions as our measures of neighborhood crime rates increase in these cities, thus violating implication #1. In Baltimore, we did find that blacks' perceptions were less sensitive to real crime rates in some specifications, but the model implied that in neighborhoods with low crime rates blacks perceived the neighborhood's crime problem as more severe than whites, contradicting implication #2. It is also possible to argue that racially specific neighborhood reference groups would only lead to an intercept difference between whites and blacks, not a difference in slopes, depending on exact assumptions that are made about the form of the relationship between the questions used to measure neighborhood crime and the unobserved "true" level of perceived neighborhood crime. In this case, racially specific neighborhood reference groups would pose no concern for our interpretation of the interaction.

specification in Baltimore, however, this remains a hypothesis in need of further verification.[40] We suspect there might be a larger difference between the black and white coefficients in all three datasets if not for the fact that selection into neighborhoods likely attenuates the association between percent young black men and perceptions of crime for whites, as discussed below.

Selection into Neighborhoods

A final issue that likely impacts our estimates is the process of self-selection into neighborhoods. Clearly, whites who live in black neighborhoods are not a random sample of all whites.[41] Whites who most strongly associate race and crime are likely to avoid racially mixed (or mostly black) neighborhoods by moving out of them or by refusing to move in. Indeed, results from surveys show that whites who live closer to blacks tend to score lower on scales designed to measure racial prejudice (Stinchcombe et. al. 1980). The movement of whites who most strongly associate race and crime away from racially mixed neighborhoods will result in selection that is positively associated with the error term in our equation; this will have the effect of flattening the regression line of racial composition on perceptions. Our estimates, therefore, of the effect of percent young black men on white respondents' neighborhood perceptions are likely to be conservative. Given that empirical studies find extensive white flight from even moderately integrated neighborhoods (Massey, Gross, and Shibuya 1994; Quillian 1999), they may be highly conservative.

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[40] In addition, we tried our models using data from the Multi-City Study of Urban Inequality (Bobo et. al. 2000) which includes samples from Los Angeles, Atlanta, Detroit, and Boston. We do not include the data here because we were not able to obtain small area crime rate data to match to this study, thus we lack a key control variable. But using these data, we found both a significant effect of percent young black men and a significant interaction between race of the respondent and percent young black men. A table showing these results are available from the authors upon request.

[41] The blacks who live in white neighborhoods may also be selected based in part on racial attitudes, although we suspect that the barriers of limited economic resources and discrimination in housing markets makes selection less of a factor for blacks than whites (Yinger 1995).

We believe the bias induced by selection will be especially pronounced in the Chicago and Baltimore data because these datasets contain only central-city neighborhoods with, relative to Seattle, a lower share of predominately white neighborhoods. Among our Seattle sample, the average tract in the city is 7.6 percent black with over 50 percent of whites living in neighborhoods with less than 3 percent blacks (compared to averages of 11.5 and 21.6 percent black in Chicago and Baltimore, respectively). The lower share minority of the city of Seattle overall makes us believe that white flight is more likely to be to other urban tracts than to suburban tracts (and thereby retained in our sample), whereas in the other two cities white flight is more likely to remove these residents from our samples altogether.

Conclusion

Our research uses attitude indicators merged with neighborhood data from the census and official statistics to investigate how racial and nonracial neighborhood characteristics influence perceptions of neighborhood crime. Our results indicate that the percentage of young black men in a neighborhood is positively associated with perceived crime among neighborhood residents. This association remains strong even when we statistically control for many other neighborhood characteristics, including two measures of crime rates and measures of neighborhood disorder. In all three surveys, the standardized effect of percent young black men is one of the best predictors of the perceived severity of neighborhood crime. These results suggest that the strong mental association between race and crime has a powerful influence on perceptions of neighborhood crime levels, beyond any actual association between race and crime.

We find evidence consistent with Harris' (1999) and Taub, Taylor, and Dunham's (1984) argument that whites are averse to black neighbors in part because certain neighborhood problems, namely crime, are perceived to be worse in black neighborhoods. Our results, however, contradict the assumption that this perception simply reflects actual differences in neighborhood crime levels. We find that controls for neighborhood social and economic characteristics, including measures of crime based on official reports and victimization statistics, cannot explain all, or even most, of the influence of racial composition on perceptions of neighborhood crime. Thus while nonracial factors like considerations of neighborhood crime may largely mediate the decision to move, the influence of race even on these processes cannot be dismissed.

It is impossible, of course, for us to definitively prove that the association we find between percent young black men and perceptions of crime is not, at least in part, capturing the influence of some omitted or mismeasured neighborhood characteristic. Yet the extensive controls we are able to include for crime and victimization rates, demographic composition, and neighborhood disorder make us skeptical of this argument. We find it more plausible that stereotypical pictures associating race and crime are responsible for the observed effects.

Using the more recent Seattle and Baltimore surveys we find the same basic relationship between percent young black men and perceptions of neighborhood crime. Further, we also find evidence that the association between percent young black men and crime may be stronger for white and Latino respondents than for blacks. This is what we would expect if perceptions are more strongly influenced by stereotypes about race and crime for members of groups that are not the target of the stereotype. We suspect that this interaction would be stronger and would probably appear in the

Chicago results if neighborhood residence were exogenously assigned; the strength of the association is

likely suppressed, however, by the flight of whites who most strongly associate race and crime away

from black neighborhoods. Without better data we can only speculate as to how much stronger the

association would be if persons were randomly assigned to neighborhoods (rather than selecting where

to live themselves). The fact that studies of migration find such high exit rates among whites, however,

makes us suspect that the effect of young black men on perceptions of neighborhood crime may be

much more powerful than what we find here.

Discussion

We believe that these results are illuminating about the sources of residential segregation by race.

Research suggests that a primary reason whites avoid black neighbors is because of their perception

that neighborhoods with more blacks have higher crime rates (Taub, Taylor, and Dunham 1984; Harris,

1997b). Crime rates are positively correlated (zero-order) with the percentage of blacks in a

neighborhood, so these perceptions are in part reflection of an objective reality. But our results suggest

that whites (and Latinos) systematically overestimate the extent to which percentage black and

neighborhood crime rates are associated; this association persists even when official crime rates are

controlled. In fact, in Chicago and Baltimore, we find that the influence of racial composition on

perceptions of crime is larger than the influence of either of our measures of real crime rates.[42] Given

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[42] The relative weakness of our official measures of neighborhood crime in predicting perceived crime is not surprising in light of studies that show that the risk of criminal victimization tends to be substantially overestimated. Dominitz and Manski (1997) show that risk of burglary victimization is estimated much less accurately than negative economic events such as job loss.

the importance of crime concerns in neighborhood mobility decisions, stereotypes associating race and crime may then be an important factor that contributes to racial segregation in the United States.

These results are particularly troubling in that they represent the assessments of residents about their own neighborhoods, rather than those of persons who do not live there, or evaluations of hypothetical neighborhoods that exist only on survey cards. While we believe that in some cases stereotypes may serve as "functional heuristics," enabling individuals to estimate an unobserved characteristic for which it is too difficult or costly to gain individual information, these respondents should have reasonably good knowledge of actual crime committed in their own neighborhood. Instead, stereotypes appear to be leading to a systematic distortion in the perception of a neighborhood's crime rate even among persons with easy access to more complete information. If basic ideas about the operation of stereotypes are correct, then neighborhood racial composition would probably have an even larger influence on the perceptions of persons who know the neighborhood less well, such as prospective residents considering a neighborhood as a possible place to live.

In contrast to Harris's research, these results do not lead to optimistic conclusions about the possibilities for neighborhood integration. If whites systematically overestimate the relationship between black neighbors and crime, then even integrated neighborhoods with affluent minority residents may be difficult to sustain. This may be reason to rethink whether policies to promote neighborhood integration can work without significant attitude change among whites, or whether we should consider other approaches to dealing with the problems resulting from racial segregation.

To speculate beyond our results, we suspect that the distorted perceptions induced by stereotypes may be an important source of racial discrimination in many areas of life other than

neighborhood selection. The influence of stereotypes on judgments about job qualifications or criminal propensities may well be a more important source of black disenfranchisement in contemporary America than direct racial prejudice or taste discrimination (i.e., beliefs that blacks are inherently inferior or should be kept separate from whites). To consider this possibility, future research needs to compare measures of perceptions with objective measures in considering how perceptions may be structured by racial categories.

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Table 1: Neighborhood Crime Survey Questions

Crime Factors and Neighborhood Decline in Chicago Study	Factor Loading
"How satisfied are you right now with the safety of the neighborhood?" Coded (4) very dissatisfied, (3) somewhat dissatisfied, (2) somewhat satisfied, (1) very satisfied.	.667
"How big a problem do you have with purse snatching and other street crime problems?" Coded (3) Big problem, (2) Somewhat a problem, (1) not a problem.	.673
"Now I'd like to ask you some questions about crime. How much crime would you say there is in your own immediate neighborhood - a lot, some, or only a little?" Coded (4) A lot, (3) some, (2) only a little, (1) none.	.585

Testing Theories of Victimization in Seattle Study	
"Is this neighborhood safe from crime?" Coded (4) very unsafe, (3) somewhat unsafe, (2) somewhat safe, (1) very safe.	NA

Crime Changes in Baltimore Study	
"Now I'm going to read a list of things that are problems for some people in their neighborhood. For each item I'd like you to tell me if it's a big problem, somewhat of a problem, or not a problem in your neighborhood. How about . . . Crime?" Coded (3) Big problem, (2) somewhat a problem, (1) not a problem.	NA

Table 2. Individual and Neighborhood Predictors of Perceived Neighborhood Crime in Chicago (multi-level model)

	Model 1		Model 2		Model 3		Model 4	
	Coef.	Std. Error	Coef.	Std. Error	Coef.	Std. Error	Coef.	Std. Error
Race and Neighborhood-level characteristics								
Percent young black men	0.034	0.004 ***	0.025	0.005 ***	0.021	0.005 ***	0.022	0.005 ***
Respondent black	-0.248	0.078 **	-0.255	0.078 **	-0.224	0.073 **	-0.211	0.073 **
Black*percent young black men	0.002	0.006	0.002	0.006	0.002	0.005	0.000	0.005
Crime rate (logged)			0.146	0.048 **	0.159	0.043 ***	0.158	0.043 ***
Victimization rate			0.002	0.188	-0.036	0.172	-0.019	0.170
Percent Latino	0.008	0.002 ***	0.006	0.002 **	0.004	0.002 *	0.003	0.002
Respondent Latino	0.004	0.109	-0.006	0.108	-0.008	0.101	-0.245	0.063 ***
Latino*percent Latino	-0.009	0.003 **	-0.009	0.003 **	-0.008	0.003 **	-0.004	0.003
Percent young men	0.007	0.005	0.001	0.006	0.004	0.005	0.004	0.005
Percent poor			-0.002	0.002	-0.002	0.004	-0.002	0.004
Percent affluent			0.002	0.004	-0.002	0.002	-0.002	0.002
Neighborhood noise (not a problem)					(ref.)		(ref.)	
Neighborhood noise (small problem)					0.202	0.036 ***	0.202	0.036 ***
Neighborhood noise (big problem)					0.380	0.056 ***	0.440	0.069 ***
Neighborhood insults (not a problem)					(ref.)		(ref.)	
Neighborhood insults (small problem)					0.432	0.041 ***	0.435	0.041 ***
Neighborhood insults (big problem)					1.040	0.072 ***	1.036	0.072 ***
Neighborhood appearance rating							-0.002	0.200
Neighborhood appearance rating missing							-0.032	0.027
Individual-level characteristics								
Male	-0.133	0.030 ***	-0.134	0.030 ***	-0.119	0.028 ***	-0.118	0.028 ***
Age	0.001	0.001	0.001	0.001	0.004	0.001 ***	0.004	0.001 ***
Education (yrs)	0.004	0.005	0.004	0.005	0.007	0.004	0.007	0.004
Family income (< $10,000)	-0.027	0.038	-0.030	0.038	-0.049	0.036	-0.047	0.036
Family income ($10,000-20,000)	(ref.)		(ref.)		(ref.)		(ref.)	
Family income ($20,000-30,000)	-0.030	0.042	-0.028	0.042	-0.011	0.039	-0.015	0.039
Family income (> $30,000)	-0.016	0.047	-0.014	0.047	-0.018	0.044	-0.020	0.044
Family income (missing)	-0.036	0.054	-0.036	0.054	-0.031	0.050	-0.036	0.050
Personal victimization experience	0.435	0.030 ***	0.431	0.030 ***	0.334	0.028 ***	0.305	0.040 ***
Variance (tract)	0.017	0.005 ***	0.013	0.005 **	0.009	0.004 *	0.008	0.004 *
Variance (individual)	0.547	0.015 ***	0.547	0.015 ***	0.476	0.013 ***	0.478	0.013 ***
-2(Log likelihood)	6306.6		6294.0		5895.9		5901.7	
Sample size	2796		2796		2793		2793	

Source: Crime Factors and Neighborhood Decline in Chicago. All models are estimated with an intercept, but the intercept is not shown.
* p<.05 ** p<.01 *** p<.001

Table 3. Individual and Neighborhood Predictors of Perceived Neighborhood Crime in Seattle (ordered logit)

"Is this neighborhood safe from crime?" (Source: Testing Theories of Criminality and Victimization in Seattle)
(1="Very safe", 2="Somewhat safe", 3="Somewhat unsafe", 4="Very unsafe")

Variables	Model 1		Model 2	
	Coef.	Std. Error	Coef.	Std. Error
Race and Neighborhood-level characteristics				
Percent young black men	0.107	0.039 **	0.081	0.033 *
Respondent black	-0.327	0.251	-0.393	0.239
Black*percent young black men	-0.091	0.040 *	-0.077	0.037 *
Total Crime Rate, 1988-90 (logged)	0.471	0.091 ***	0.464	0.087 ***
Victimization rate (logged)	0.200	0.079 *	0.199	0.074 **
Percent young men (age 12-29)	0.002	0.017	0.008	0.015
Percent Latino	0.021	0.027	0.024	0.024
Percent poor	0.024	0.008 **	0.022	0.007 **
Percent affluent	-0.007	0.004	-0.004	0.004
Teenagers hanging out in the street			1.023	0.079 ***
Individual-level characteristics				
Age	-0.003	0.002	0.000	0.002
Personal victimization experiences	0.487	0.035 ***	0.441	0.037 ***
Female	0.268	0.064 ***	0.252	0.065 ***
Education (less than high school)	(ref.)		(ref.)	
Education (high school)	-0.159	0.165	-0.108	0.169
Education (college)	-0.046	0.155	-0.009	0.158
Household income (< $10,000)	(ref.)		(ref.)	
Household income ($10,000-$20,000)	0.058	0.119	0.085	0.117
Household Income($20,000-$30,000)	0.007	0.130	0.023	0.125
Household Income($30,000-$50,000)	-0.109	0.133	-0.105	0.134
Household Income($50,000-$75,000)	-0.258	0.155	-0.218	0.155
Household Income($75,000-$100,000)	-0.335	0.211	-0.238	0.217
Household Income(> $100,000)	-0.397	0.218	-0.312	0.220
Household Income missing	-0.106	0.156	-0.044	0.160
Threshold 1	-0.247	0.842	0.257	0.760
Threshold 2	2.801	0.839	3.413	0.755
Threshold 3	4.991	0.844	5.670	0.761
N	4494		4494	

Note: Standard Errors are adjusted for the clustered sample.
     Models are estimated using pseudo-maximum likelihood methods and thus standard likelihood ratio tests are not valid.
* p<.05 ** p<.01 *** p<.001

Table 4. Individual and Neighborhood Predictors of Perceived Neighborhood Crime in Baltimore (ordered logit)

"Is Crime a Problem In Your Neighborhood" (Source: Crime Changes in Baltimore Study)
(1="Not a Problem", 2="Somewhat a Problem", 3="A big Problem")

Variables	Model 1 Coef.	Std. Error	Model 2 Coef.	Std. Error
Race and Neighborhood-level characteristics				
Percent of population black	0.015	0.007 *	0.017	0.006 **
Respondent black	-1.068	0.422 *	-0.926	0.402 *
Black*percent black	-0.009	0.009	-0.013	0.007
Total Crime Rate, 1990-92 (logged)	-0.012	0.289	-0.061	0.303
Percent Employed as Managers, Professionals	-0.005	0.008	-0.006	0.010
Percent young persons (age 14-34)	-0.001	0.013	-0.014	0.018
Percent poor	0.056	0.017 ***	0.032	0.020
Neighborhood Deterioration Factor			0.446	0.224 *
Individual-level characteristics				
Age	-0.020	0.008	-0.019	0.008 *
Respondent Latino	-0.916	1.931	-0.987	1.698
Burglary Victim (1=yes)	0.639	0.186	0.574	0.193 **
Car Theft Victim (1=yes)	0.819	0.209 ***	0.825	0.209 ***
Female	0.265	0.191	0.284	0.193
Years of Education	0.027	0.032	0.031	0.032
Household income (< $5,000)	0.762	0.892	0.757	0.912
Household income ($5,000-$10,000)	(ref.)		(ref.)	
Household income ($10,000-$15,000)	0.038	0.674	0.133	0.681
Household income ($15,000-$20,000)	0.698	0.564	0.779	0.576
Household Income($15,000-$20,000)	0.983	0.520	1.069	0.538 *
Household Income($20,000-$25,000)	0.502	0.602	0.653	0.634
Household Income($25,000-$30,000)	0.542	0.560	0.638	0.570
Household Income($35,000-$40,000)	0.336	0.564	0.421	0.579
Household Income(> $40,000)	0.483	0.487	0.600	0.501
Household Income (missing)	0.828	0.443	0.847	0.434
Threshold 1	-0.133	1.423	-1.099	1.669
Threshold 2	2.411	1.474	1.469	1.718
N	609		609	

Note: Standard Errors are adjusted for the clustered sample.

   Models are estimated using pseudo-maximum likelihood methods and thus standard likelihood ratio tests are not valid.

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

Appendix A. Descriptive Statistics

Crime Factors and Neighborhood Decline in Chicago (n=2796)

Variable	Mean	Std. Dev.	Min	Max
Perception of neighborhood crime (factor score)	0.01	0.83	-1.34	2.19
Respondent black	0.31	0.46	0.00	1.00
Respondent Latino	0.06	0.24	0.00	1.00
Male	0.34	0.47	0.00	1.00
Age	42.13	15.73	17.00	91.00
Education (yrs)	12.45	3.78	0.00	20.00
Family income (< $10,000)	0.26	0.44	0.00	1.00
Family income ($10,000-20,000)	0.35	0.48	0.00	1.00
Family income ($20,000-30,000)	0.18	0.38	0.00	1.00
Family income (> $30,000)	0.13	0.34	0.00	1.00
Family income (missing)	0.09	0.28	0.00	1.00
Personal victimization experience	0.38	0.49	0.00	1.00
Crime rate (logged)	4.60	0.53	3.30	7.17
Victimization rate	0.37	0.13	0.00	0.88
Percent young black men (12-29)	7.42	9.11	0.00	25.41
Percent young men (12-29)	21.93	3.97	14.07	57.36
Percent affluent	31.94	15.65	0.00	67.62
Percent poor	13.75	9.99	1.00	43.00
Percent black	32.21	38.90	0.00	100.00
Percent Latino	9.61	14.92	0.00	91.00

Testing Theories of Criminality and Victimization in Seattle (n=4494)

Variable	Mean	Std. Dev.	Min	Max
Perceptions of neighborhood crime	2.10	0.75	1.00	4.00
Respondent black	0.07	0.26	0.00	1.00
Age	49.04	17.90	17.00	97.00
Female	0.50	0.50	0.00	1.00
Education (less than high school)	0.06	0.24	0.00	1.00
Education (high school)	0.23	0.42	0.00	1.00
Education (college)	0.70	0.46	0.00	1.00
Household income (< $10,000)	0.08	0.28	0.00	1.00
Household income ($10,000-$20,000)	0.19	0.39	0.00	1.00
Household Income($20,000-$30,000)	0.20	0.40	0.00	1.00
Household Income($30,000-$50,000)	0.26	0.44	0.00	1.00
Household Income($50,000-$75,000)	0.11	0.31	0.00	1.00
Household Income($75,000-$100,000)	0.04	0.19	0.00	1.00
Household Income(> $100,000)	0.02	0.15	0.00	1.00
Household Income missing	0.10	0.30	0.00	1.00
Personal victimization experiences	0.53	0.85	0.00	6.00
Percent young black men	1.45	2.27	0.00	13.46
Total Crime Rate, 1988-90 (logged)	4.57	0.69	3.10	6.89
Victimization rate (logged)	-5.03	0.63	-6.71	-3.25
Percent young men (age 12-29)	13.35	4.82	6.43	36.16
Percent Latino	3.41	2.41	0.72	17.64
Percent poor	12.34	9.40	1.90	56.76
Percent affluent	35.26	15.56	0.00	65.76
Teenagers hanging out in the street	0.28	0.45	0.00	1.00

Crime Changes in Baltimore Study (n=609)

Variable	Mean	Std. Dev.	Min	Max
Perception of neighborhood crime	1.96	0.72	0.00	2.00
Respondent black	0.34	0.48	0.00	1.00
Respondent Latino	0.00	0.06	0.00	1.00
Female	0.60	0.49	0.00	1.00
Age	50.51	16.17	20.00	91.00
Education (yrs)	13.33	3.14	1.00	20.00
Burglary Victim (1=yes)	0.41	0.49	0.00	1.00
Car Theft Victim (1=yes)	0.20	0.40	0.00	1.00
Female	0.60	0.49	0.00	1.00
Household income (< $5,000)	0.01	0.12	0.00	1.00
Household income ($5,000-$10,000)	0.04	0.19	0.00	1.00
Household income ($10,000-$15,000)	0.05	0.22	0.00	1.00
Household income ($15,000-$20,000)	0.06	0.23	0.00	1.00
Household Income($15,000-$20,000)	0.09	0.29	0.00	1.00
Household Income($20,000-$25,000)	0.10	0.30	0.00	1.00
Household Income($25,000-$30,000)	0.08	0.27	0.00	1.00
Household Income($35,000-$40,000)	0.06	0.24	0.00	1.00
Household Income(> $40,000)	0.37	0.48	0.00	1.00
Household Income (missing)	0.13	0.34	0.00	1.00
Total Crime Rate, 1990-92 (logged)	4.48	0.65	3.26	6.03
Percent black	40.57	36.25	1.13	99.42
Percent young persons (age 14-34)	43.22	8.64	23.77	68.19
Percent Employed as Managers, Professionals	27.73	15.16	6.40	58.21
Percent poor	15.00	10.48	0.00	43.08
Neighborhood deterioration factor score	-0.06	0.90	-1.51	2.43

Appendix B. Alternative Specifications

The tables in this appendix address three specification issues for our basic models. In exploring the effects of alternative specifications, we use as a baseline the model that we consider our "best" specification for each data set. For example, we do not include the deterioration measures from our Chicago data in our "best" model because this measure is missing for about half the sample. Further, we do not use models that include subjective measures of neighborhood social environment, because (as discussed in the text) these subjective control variables are likely to suffer from problems of endogeneity.

Several of the models in the tables that follow examine whether or not there are nonlinear effects of percent young black men (or percent black) on perceptions of crime. We tried both a squared term for percent young black men, and a specification with dummy variables representing the percent young black men distribution broken into 3 parts. These models produced no evidence of nonlinearities in Chicago and Baltimore. There is some evidence of a nonlinear effect of percent young black men in Seattle, although in all cases our basic results hold.

Models to address two other specification issues are also included in the appendix. First, we allowed the slopes of all variables to vary by race of respondent. Our basic results are consistent under this specification. Second, in Chicago we estimated a model allowing the effect of the slope of race to vary randomly across tracts. This had no influence on the results. The results of each model are shown in the following tables.

Appendix B. Alternative Specifications of Percent Young Black Men on Perceptions of Neighborhood Crime (multi-level model)

	Quadratic Percent Black		Categorical Percent Black		Variance Component for Black		Whites only		Blacks only	
	Coef.	Std. Error	Coef.	Std. Error	Coef.	Std. Error	Coef.	Std. Error	Coef.	Std. Error
Respondent black	-0.178	0.109	-0.183	0.174	-0.249	0.083 **				
Percent young black men	0.036	0.012 **			0.025	0.005 ***	0.028	0.006 ***	0.027	0.008 ***
Black*percent young black men	-0.022	0.021			0.002	0.006				
Percent young black men squared	-0.001	0.001								
Black*percent young black men squared	0.001	0.001								
Percent young black men (< 1%)			(ref.)							
Percent young black men (1-10%)			0.155	0.068 *						
Percent young black men (> 10%)			0.343	0.090 ***						
Black*percent young black men (1-10%)			-0.084	0.191						
Black*percent young black men (> 10%)			0.029	0.187						
Percent young men (< 20%)			(ref.)							
Percent young men (20-23%)			0.075	0.060						
Percent young men (> 23%)			0.019	0.071						
Respondent Latino	0.004	0.109	-0.007	0.108	-0.010	0.108				
Percent Latino	0.006	0.002 **	0.003	0.002	0.006	0.002 **	0.008	0.002 ***	0.006	0.005
Latino*percent Latino	-0.009	0.003 **	-0.008	0.003	-0.008	0.003 **				
Percent young men	0.000	0.006			0.001	0.005	0.004	0.006	0.005	0.012
Percent poor	0.002	0.004	0.007	0.004	0.003	0.004	-0.004	0.007	0.002	0.006
Percent affluent	-0.003	0.002	-0.005	0.002 *	-0.002	0.002	-0.002	0.002	-0.001	0.005
Male	-0.136	0.03 ***	-0.138	0.030 ***	-0.135	0.030 ***	-0.168	0.036 ***	-0.042	0.060
Age	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	-0.001	0.002
Education (yrs)	0.004	0.005	0.002	0.005	0.004	0.005	0.003	0.006	0.001	0.009
Family income (< $10,000)	-0.033	0.038	-0.031	0.038	-0.031	0.038	0.024	0.048	-0.076	0.071
Family income ($10,000-20,000)	(ref.)		(ref.)		(ref.)					
Family income ($20,000-30,000)	-0.028	0.042	-0.028	0.042	-0.028	0.042	0.006	0.049	-0.041	0.086
Family income (> $30,000)	-0.014	0.047	-0.015	0.047	-0.014	0.047	-0.026	0.056	0.064	0.094
Family income (missing)	-0.037	0.054	-0.034	0.054	-0.034	0.054	-0.002	0.064	-0.060	0.110
Personal victimization experience	0.432	0.03 ***	0.432	0.030 ***	0.431	0.030 ***	0.399	0.037 ***	0.522	0.056 ***
Crime rate (logged)	0.145	0.049 **	0.102	0.050 *	0.153	0.047 **	0.247	0.056 ***	0.063	0.083
Victimization rate	0.004	0.19	0.027	0.190	-0.033	0.187	-0.328	0.226	0.510	0.345
Variance (tract)	0.013	0.005 **	0.013	0.005 **	0.001	0.005	0.011	0.005 *	0.009	0.009
Variance (individual)	0.546	0.015 ***	0.547	0.015 ***	0.546	0.015 ***	0.501	0.017 ***	0.625	0.031 ***
Variance (race coefficient)					0.015	0.021				
Covariance (race x tract)					-0.003	0.010				
-2(Log likelihood)	6292.475		6296.234		6293.208		3809.575		2053.784	
Sample size	2796		2796		2796		1750		863	

Source: Crime Factors and Neighborhood Decline in Chicago

Note: All models are estimated with an intercept, although intercept is not shown.

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

Appendix B Continued. Individual and Neighborhood Predictors of Perceived Neighborhood Crime in Seattle (ordered logit)

Variables	Quadratic Percent Black Coef.	Std. Error	Categorical Percent Black Coef.	Std. Error	Whites only Coef.	Std. Error	Blacks only Coef.	Std. Error
Percent young black men	0.284	0.066 ***			0.113	0.041 **	0.000	0.049
Black*percent young black men	-0.225	0.121						
Respondent black	-0.245	0.362	-0.401	0.418				
Percent young black men squared	-0.019	0.005 ***						
Black*percent young black men squared	0.016	0.009						
Percent Black (1)			(ref.)					
Percent Black (2)			0.351	0.150 *				
Percent Black (3)			0.718	0.517				
Black*Percent Black (2)			-0.239	0.442				
Black*Percent Black (3)			-0.332	0.488				
Total Crime Rate, 1988-90 (logged)	0.419	0.089 ***	0.393	0.094 ***	0.476	0.094 ***	0.796	0.292 **
Victimization Rate (logged)	0.198	0.076 **	0.211	0.078 **	0.206	0.081 *	0.063	0.291
Percent young men (age 12-29)	0.012	0.017			0.003	0.018	-0.004	0.024
Percent young men (1)			(ref.)					
Percent young men (2)			0.615	0.111 ***				
Percent young men (3)			-0.075	0.367				
Percent Latino	0.025	0.025	0.013	0.024	0.019	0.027	0.059	0.065
Percent poor	0.020	0.009 *	0.028	0.010 **	0.021	0.009 *	0.036	0.018 *
Percent affluent	-0.006	0.004	-0.009	0.004 *	-0.008	0.004	-0.001	0.014
Age	-0.003	0.002	-0.003	0.002	-0.003	0.002	-0.010	0.008
Personal victimization experiences	0.478	0.035 ***	0.489	0.035 ***	0.493	0.036 ***	0.558	0.171 **
Female	0.268	0.064 ***	0.274	0.064 ***	0.255	0.066 ***	0.405	0.236
Education (less than high school)	(ref.)		(ref.)		(ref.)		(ref.)	
Education (high school)	-0.156	0.167	-0.172	0.166	-0.082	0.169	-0.433	0.430
Education (college)	-0.039	0.157	-0.038	0.156	0.056	0.165	-0.754	0.312 *
Household income (< $10,000)	(ref.)		(ref.)		(ref.)		(ref.)	
Household income ($10,000-$20,000)	0.039	0.121	0.045	0.121	0.071	0.129	0.005	0.295
Household Income($20,000-$30,000)	-0.009	0.133	0.017	0.133	-0.002	0.136	0.311	0.460
Household Income($30,000-$50,000)	-0.130	0.134	-0.094	0.134	-0.115	0.134	0.175	0.529
Household Income($50,000-$75,000)	-0.266	0.155	-0.212	0.156	-0.268	0.167	0.086	0.498
Household Income($75,000-$100,000)	-0.370	0.213	-0.302	0.213	-0.392	0.211	1.920	0.743 **
Household Income(> $100,000)	-0.411	0.221	-0.381	0.219	-0.373	0.221	-0.805	1.287
Household Income missing	-0.126	0.158	-0.101	0.159	-0.128	0.160	0.228	0.547
Threshold 1	-0.251	0.820	-0.719	0.800	-0.176	0.881	2.232	2.885
Threshold 2	2.813	0.816	2.335	0.796	2.869	0.876	5.426	2.886
Threshold 3	5.000	0.825	4.517	0.796	5.122	0.882	7.042	2.919
N	4494		4494		4183		311	

Note: Standard Errors are adjusted for the clustered sample.

Models are estimated using pseudo-maximum likelihood methods and thus standard likelihood ratio tests are not valid.

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

Appendix B Continued. Individual and Neighborhood Predictors of Perceived Neighborhood Crime in Baltimore (ordered logit)

Variables	Quadratic Percent Black		Categorical Percent Black		Whites only		Blacks only	
	Coef.	Std. Error	Coef.	Std. Error	Coef.	Std. Error	Coef.	Std. Error
Percent of population black	0.019	0.024			0.016	0.006 *	0.011	0.007
Black*percent black	0.017	0.032						
Respondent black	-1.647	0.621 **	-0.630	0.991				
Percent black squared	0.000	0.000						
Black*percent black squared	0.000	0.000						
Percent Black (1)			(ref.)					
Percent Black (2)			0.382	0.284				
Percent Black (3)			1.613	0.451 ***				
Black*Percent Black(2)			-1.018	1.013				
Black*Percent Black(3)			-1.479	1.054				
Neighborhood Deterioration Factor	0.459	0.220 *	0.424	0.229	0.407	0.272	0.486	0.435
Total Crime Rate, 1990-92 (logged)	-0.050	0.296	0.073	0.311	0.470	0.255	-0.996	0.351 **
Percent Employed as Managers, Professionals	-0.007	0.010	-0.004	0.009	-0.007	0.011	-0.026	0.024
Percent young men (age 14-34)	-0.017	0.017	-0.015	0.018	-0.021	0.020	0.042	0.030
Percent poor	0.034	0.019	0.025	0.022	0.016	0.016	0.044	0.035
Age	-0.019	0.008 *	-0.019	0.008 *	-0.017	0.007 *	-0.027	0.017
Respondent Latino	-0.993	1.658	-0.739	1.600	-0.796	1.715		
Burglary Victim (1=yes)	0.581	0.200 **	0.579	0.199 **	0.622	0.245 *	0.695	0.338 *
Car Theft Victim (1=yes)	0.820	0.207 ***	0.801	0.205 ***	0.961	0.258 ***	0.867	0.381 *
Female	0.288	0.193	0.270	0.192	0.243	0.210	0.114	0.510
Years of Education	0.032	0.032	0.028	0.033	0.006	0.046	0.030	0.072
Household income (< $5,000)	0.712	0.893	0.672	0.906	-1.248	1.085	-0.108	1.485
Household income ($5,000-$10,000)	(ref.)		(ref.)		(ref.)		(ref.)	
Household income ($10,000-$15,000)	0.147	0.680	0.014	0.693	-1.012	1.076	0.342	1.314
Household income ($15,000-$20,000)	0.805	0.577	0.680	0.597	-0.539	1.185	1.289	1.117
Household Income($15,000-$20,000)	1.083	0.540 *	1.086	0.537 *	0.322	0.922	0.874	0.847
Household Income($20,000-$25,000)	0.652	0.642	0.612	0.642	-0.387	1.119	1.251	1.208
Household Income($25,000-$30,000)	0.631	0.580	0.650	0.572	-0.757	1.157	1.508	1.165
Household Income($35,000-$40,000)	0.403	0.583	0.442	0.577	-0.855	1.147	0.734	0.963
Household Income(> $40,000)	0.589	0.504	0.617	0.503	-0.576	1.003	1.098	1.020
Household Income (missing)	0.847	0.446	0.796	0.439	-0.424	0.975	1.555	0.740 *
Threshold 1	-1.362	2.688	-0.359	2.653	1.293	3.009	-6.276	1.897
Threshold 2	1.210	2.720	2.220	2.697	4.166	3.051	-4.011	1.923
N	609		609		399		210	

Note: Standard Errors are adjusted for the clustered sample.

　　　Models are estimated using pseudo-maximum likelihood methods and thus standard likelihood ratio tests are not valid.

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

Appendix C. Spatial Autocorrelation and Alternative Spatial Specifications

As discussed in the text, many of the tracts in the Chicago and Seattle data are spatially

contiguous. In our analysis, we consider two ways in which this may affect our results.

The first approach considers the possibility that perceptions of crime may be influenced

not only by the characteristics of one's own census tract, but also by those of nearby

tracts. In this case, we treat space as a measureable effect to be considered as part of the

model—an additional influence on perceptions of crime. The second approach addresses

the concern that, net of our observed predictors, contigous tracts may be more similar in

their perceived level of crime than randomly chosen tracts. In this case, spatial

correlation is treated as a nuisance parameter to be corrected.

   To investigate these issues, we created a boundary matrix that indicated when

tracts were adjacent by using maps found in the 1980 Community Fact Book of Chicago

(Chicago Fact Book Consortium 1984) and 1990 census tract maps for Seattle which we

created from the Census Bureau's Tiger/Line computer files.[1] We coded neighborhoods

as contiguous if they shared a common border, but not if they only had corners touching

(the rook's definition of contiguity). We then used the matrix to create variables for each

respondent representing the average characteristics of all neighboring tracts for the

neighborhood-level independent variables used in text tables 2 (Chicago) and 3 (Seattle).

   We then estimated models that included both the tract measures and separate

measures for the surrounding tracts. The results of these models are shown in table C1.

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[1] Spatial autocorrelation is not likely to be a significant problem in the Baltimore data because the 30
neighborhoods in the study are widely scattered throughout the city. We located 22 of the neighborhoods
using a map of Baltimore neighborhoods, and only two sets of two neighborhoods (four overall) are
spatially contiguous. We were correspondingly unable to model spatial effects for Baltimore because we
did not have data on contiguous tracts for the Baltimore neighborhood units.

In Chicago, we find little evidence of effects of the characteristics of the tracts

surrounding the respondent's tract; the indicators for surrounding tract characteristics are

insignificant and their addition has no effect on our primary indicator of percent young

black men. In Seattle, on the other hand, we do find some evidence that characteristics of

surrounding tracts are important. Consistent with our theory, however, percent young

black men continues to be a key predictor—only it is of the surrounding tract rather than

the respondent's tract.

As noted above, spatially contiguous tracts also lead to the possibility that the

second-level (tract-level) errors from the model may be correlated with errors for

adjacent tracts, or spatial autocorrelation (Upton and Fingleton 1985). This would bias

our standard errors and lead to model inefficiencies.

Models of spatial autocorrelation and effects have not yet been integrated in

multilevel modeling packages or programs for ordinal outcomes. We were, however,

able to investigate the issue of spatial autocorrelation in Chicago (where we have a

continuous dependent variable) by using a more ad hoc procedure based on the residuals

from our models. Our procedure is similar to that used by Sampson, Morenoff, and Earls

(1999).

From the multilevel models in table 2, we estimated second level residuals. We

then used these residuals and our boundary matrix to calculate Moran's I, a statistic to

test for spatial autocorrelation (Upton and Fingleton 1985). Ideally, we would first

adjust the second-level residuals for correlation caused by the independent variables of

the model. But Upton and Fingleton (1985, p. 337) report that this adjustment makes

little difference as long as the number of observation is substantially larger than the

number of estimated parameters; in any case, the bias will be toward rejection of the null

of no spatial autocorrelation. While there was clear evidence of autocorrelation in the

raw data, in the models with sufficient controls (such as model 2 and 3) Moran's I was

not statistically significant. To get a more intuitive estimate of the extent of

autocorrelation, we also calculated the Pearson correlation between the residual for each

tract and the average residual for contiguous tracts. The estimates of spatial

autocorrelation are shown in table C2.

Table C1. The Effects of Adjacent Neighborhood Characteristics on Perceptions of Crime

	Chicago		
Race and Neighborhood-level characteristics			
Percent young black men	0.023	0.009	*
Respondent black	-0.266	0.079	***
Black*percent young black men	-0.024	0.013	
Average % young black men, adjacent tracts	-0.002	0.010	
Crime rate (logged)	0.106	0.051	*
Logged average crime rate, adjacent tracts	0.068	0.074	
Victimization rate	-0.043	0.186	
Average victimization rate, adjacent tracts	0.086	0.249	
Percent Latino	-0.013	0.006	*
Respondent Latino	-0.063	0.111	
Latino*percent Latino	-0.013	0.006	*
Average percent Latino, adjacent tracts	0.004	0.004	
Percent young men	0.001	0.006	
Average percent young men, adjacent tracts	-0.004	0.009	
Percent poor	0.002	0.004	
Average percent poor, adjacent tracts	0.006	0.007	
Percent affluent	-0.002	0.002	
Average percent affluent, adjacent tracts	0.000	0.003	
Individual-level characteristics			
Male	-0.135	0.030	***
Age	0.001	0.001	
Education (yrs)	0.004	0.005	
Family income (< $10,000)	-0.031	0.038	
Family income ($10,000-20,000)	(ref.)		
Family income ($20,000-30,000)	-0.025	0.042	
Family income (> $30,000)	-0.008	0.047	
Family income (missing)	-0.032	0.054	
Personal victimization experience	0.432	0.030	***
Variance (tract)	0.007	0.004	
Variance (individual)	0.548	0.015	***
-2(Log likelihood)	6274.4		
Sample size	2792		

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

Table C1, cont'd. The Effects of Adjacent Neighborhood Characteristics on Perceptions of Crime

	Seattle		
Race and Neighborhood-level characteristics			
Percent young black men	0.030	0.037	
Respondent black	-0.645	0.281	*
Black*percent young black men	-0.049	0.040	
Average % young black men, adjacent tracts	0.158	0.038	***
Total Crime Rate, 1988-90 (logged)	0.448	0.094	***
Logged average crime rate, adjacent tracts	-0.182	0.109	
Victimization rate (logged)	0.116	0.075	
Average victimization rate, adjacent tracts	0.275	0.121	*
Percent young men (age 12-29)	0.022	0.019	
Average percent young men, adjacent tracts	-0.018	0.015	
Percent Latino	0.027	0.025	
Average percent Latino, adjacent tracts	0.023	0.031	
Percent poor	0.020	0.008	**
Average percent poor, adjacent tracts	-0.002	0.014	
Percent affluent	-0.004	0.004	
Average percent affluent, adjacent tracts	-0.003	0.006	
Individual-level characteristics			
Age	-0.003	0.002	
Female	0.258	0.064	***
Personal victimization experiences	0.480	0.035	***
Education (less than high school)			
Education (high school)	-0.123	0.167	
Education (college)	0.002	0.160	
Household income (< $10,000)			
Household income ($10,000-$20,000)	0.085	0.118	
Household Income($20,000-$30,000)	0.024	0.127	
Household Income($30,000-$50,000)	-0.117	0.132	
Household Income($50,000-$75,000)	-0.256	0.155	
Household Income($75,000-$100,000)	-0.363	0.212	
Household Income(> $100,000)	-0.412	0.223	
Household Income missing	-0.096	0.155	
Threshold 1	-1.957	1.071	
Threshold 2	1.122	1.065	
Threshold 3	3.327	1.060	
Sample size	4494		

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

Table C2. Tests for Spatial Autocorrelation, Chicago

Model	Correlation	Moran's I	z-score
No controls	0.572	0.438	5.850
Model 1	0.163	0.091	1.330
Model 2 (full model)	0.035	0.020	0.388

Source: Crime Factors and Neighborhood Decline in Chicago