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Personal Violence by Strangers: An Extension and Test of the Opportunity Model of Predatory Victimization

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PERSONAL VIOLENCE BY STRANGERS: AN EXTENSION AND TEST OF THE OPPORTUNITY MODEL OF PREDATORY VICTIMIZATION*

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I. INTRODUCTION

In the past two decades, criminologists have witnessed a burgeoning research interest in the study of criminal victimization. With the advent of the National Crime Survey (NCS)[1] in the U.S. in the early 1970's, researchers for the first time had access to detailed empirical information on the correlates and consequences of victimization. One of the more interesting findings to emerge from this research was the surprisingly high proportion of personal victimizations[2] that involved strangers. While it has long been known that homicides occurred in disproportionate amounts among friends and acquaintances,[3] research derived from the NCS indicates that 50% to more than 90% of non-fatal personal victimizations involved attacks by strangers.[4]

As Silberman argues, personal victimization by strangers provokes much fear among urban residents.[5] Indeed, while homicides and assaults among friends and spouses result in serious physical harm and while the chances of suffering serious harm in an automo-

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[1] See Inter-University Consortium for Political and Social Research, National Crime Surveys: Cities, 1972-1975 [hereinafter ICPSR]; National Crime Surveys: National Sample, 1973-1983.

[2] See M. HINDELANG, CRIMINAL VICTIMIZATION IN EIGHT AMERICAN CITIES: A DESCRIPTIVE ANALYSIS OF COMMON THEFT AND ASSAULT 160 (1976). Personal victimizations include robbery, aggravated assault, rape, and larceny with contact.

[3] See M. WOLFGANG, PATTERNS IN CRIMINAL HOMICIDE 203-21 (1958).

[4] See M. HINDELANG, supra note 2.

[5] C. SILBERMAN, CRIMINAL VIOLENCE, CRIMINAL JUSTICE 3-26 (1978).

bile accident are much higher than the risk of suffering harm from victimization, it is the possibility of attack by strangers that seems to engender the most intense feelings of vulnerability and fear. Perhaps fueling this fear, Silberman notes, the number of stranger crimes rose at a faster rate in the 1960s and 1970s than did crime in general.[6] Not surprisingly, then, the general public tends to "equate strange with dangerous," thereby rating victimization by strangers as one of the most serious and pressing crime problems.[7]

Despite the seriousness of stranger violence there has been little systematic attention paid to its empirical and theoretical explanations. On the empirical side, previous examination of personal victimization has, for the most part, lumped together crimes by acquaintances and crimes by strangers, even though there is no *a priori* reason to expect that the patterns of stranger crime are necessarily the same as acquaintance crime. Indeed, Parker and Smith show that important differences emerge when U.S. homicide rates are disaggregated as a result of a prior relationship between victim and offender.[8] For example, poverty has strong effects on rates of primary homicide, which occurs among friends and family members, but poverty has no effect on stranger homicide rates.[9] Stranger homicide rates are primarily influenced by the extent of urbanization.[10] Parker and Smith's research,[11] in conjunction with the seminal study by Wolfgang,[12] demonstrate that for criminal homicide at least, researchers must empirically disaggregate by victim-offender relationship.

Most importantly, there are strong theoretical reasons for distinguishing stranger victimizations that derive from the lifestyle-routine activity and opportunity theories originated by Hindelang and colleagues[13] and by Cohen and Felson.[14] The explanatory constructs developed, such as routine daily activities, guardianship, target attractiveness, and lifestyle, lead to crucial hypotheses regarding

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6 *Id.* at 4-5.

7 *Id.* at 8.

8 Parker & Smith, *Deterrence, Poverty, and Type of Homicide*, 85 AM. J. SOC. 614, (1979).

9 *Id.* at 621.

10 *See* Parker & Smith, *supra* note 8, at 621.

11 *Id.*

12 *See* M. WOLFGANG, *supra* note 3.

13 M. HINDELANG, M. GOTTFREDSON & J. GAROFALO, VICTIMS OF PERSONAL CRIME (1978).

14 Cohen & Felson, *Social Change and Crime Rate Trends: A Routine Activities Approach*, 44 AM. SOC. REV. 588 (1979); Felson & Cohen, *Human Ecology and Crime: A Routine Activity Approach*, 8 HUMAN ECOL. 389 (1980); Cohen, Kluegel & Land, *Social Inequality and Predatory Criminal Victimization: An Exposition and Test of a Formal Theory*, 46 AM. SOC. REV. 505 (1981).

victimization by strangers. For example, the theories predict that an increase in routine activities away from the household increases contact with strangers, thereby decreasing guardianship and increasing stranger victimization risk. On the other hand, family violence and conflict with friends and acquaintances may be simultaneously decreased. Unfortunately, empirical tests of routine activity theory have, to date, used crime rates and victimization rates that aggregate and confound primary and stranger crimes, precluding further refinement of the opportunity model.

In addition, the limited range of variables available in traditional data bases hampers attempts to explain stranger violence. Even when stranger crimes are distinguished, researchers typically focus on individual-level characteristics and ignore community context. Hindelang, for example, analyzes in detail the trends in stranger victimization over time and its association with such factors as age and sex.[15] These analyses, however, which are descriptive in nature do not examine stranger violence in its full social and environmental context.[16]

Prior research, therefore, devotes inadequate attention to the theoretical and empirical study of personal victimization by strangers. This article attempts to redress this imbalance in a bi-level, multivariate investigation of the causes and consequences of stranger victimization involving personal theft and violence. Utilizing a recent data set that counteracts the major weaknesses of previous research, this article examines the British Crime Survey (BCS), a nationally representative sample of nearly 11,000 residents of England and Wales in 1982.[17] This survey provides for the first time a rich array of theoretically relevant variables at both the individual (micro) and community (macro) levels.

The major theoretical goal of this Article is to extend and apply the lifestyle-routine activity and opportunity theory of criminal victimization to the phenomenon of stranger violence and stranger theft. To facilitate this task, part two briefly reviews the theory and its empirical hypotheses related to crime by strangers. Part three describes the data and methodology used, and part four begins the analysis by examining the distribution of stranger crimes in relation to individual-level social and demographic characteristics. Part four

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[15] M. HINDELANG, *supra* note 2, at 157-201; HINDELANG & MCDERMOTT, JUVENILE CRIMINAL BEHAVIOR: AN ANALYSIS OF RATES AND VICTIM CHARACTERISTICS (1981).

[16] In fact, most prior research on victimization generally neglects community and ecological context. For a more comprehensive review, see Sampson, *Neighborhood and Crime: The Structural Determinants of Personal Victimization*, 22 J. RES. CRIME & DEL. 7 (1985).

[17] *See* HOUGH & MAYHEW, THE BRITISH CRIME SURVEY: FIRST REPORT (1983).

also examines the circumstances (e.g., self-protection, influence of alcohol) and consequences (e.g., injury, police reporting) of stranger victimization that are related to the theoretical scheme. In part five, the bi-level, multivariate test of the determinants of personal violence and personal theft is analyzed. This section simultaneously examines the individual-level and contextual factors associated with the risk of suffering a victimization at the hands of strangers.

II. THEORETICAL BACKGROUND

The essential proposition of the lifestyle-routine activity (LRA) and criminal opportunity theory[18] is that the convergence in space and time of suitable targets and the absence of capable guardians lead to an increase in crime. This increase is independent of the structural conditions that motivate individuals to engage in crime,[19] such as poverty and unemployment. Based on this theoretical insight, the criminal opportunity perspective argues that the major shift in routine activities away from the family and home in the United States has been an important contributor to the post-World War II increase in crime rates. For example, persons living in single-adult households and persons employed outside the home are less obligated to confine their time to family and other activities within the household. From a routine activity perspective, these persons and their households should experience higher rates of victimization than those in households where guardianship potential is higher.

Other individual-level characteristics, such as gender and age, also are expected to influence lifestyle and routine activities. Younger persons, particularly males, are more likely to frequent bars, social clubs, and other public places outside the home where guardianship capacity is low and proximity to potential offenders is high. Cohen, Kluegel and Land argue that by their mid- to late-twenties people are more likely to adopt home-centered activities; this pattern leads to a positive correlation of age and guardian-

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[18] Cohen, Kluegel & Land, *supra* note 14, at 507, argue that the lifestyle-routine activity theory is subsumed under what they term the "opportunity model of predatory victimization." Specifically, opportunity theory includes a concern with both the micro-level lifestyle factors (e.g., marital status, age, leisure and routine activities) and the aggregate-level factors (e.g., community guardianship, proximity to offenders) related to victimization risk. This Article is concerned with both levels; for purposes of consistency, this study thus follows Cohen, Kluegel, and Land in using the terms "opportunity theory" to refer generally to the integrated lifestyle-routine activity and opportunity model.

[19] Cohen & Felson, *supra* note 14, at 589; Cohen, Kluegel & Land, *supra* note 14, at 507.

ship.[20] Consistent with these expectations, age, sex, and marital status are two of the most potent predictors of personal victimization, with males, younger persons, and single persons exhibiting disproportionately high levels of risk.[21]

Perhaps the most relevant tests of the LRA/opportunity model are analyses of direct indicators of lifestyle rather than indirect proxies such as age and marital status. For instance, Gottfredson shows that persons who spend evenings outside the home for their leisure time activities, such as attending movies and going to bars, suffer a higher risk of victimization than those who confine their leisure time to home activities.[22] An active lifestyle thus appears to influence victimization risk by increasing exposure to potential offenders in a context where guardianship is low.

In brief, previous examination of routine activities and crime focuses primarily on how micro-level factors such as age, sex, marital status, and leisure time activities relate to exposure to the risk of victimization. This article extends this focus with special reference to stranger victimization. Specifically, the opportunity model assumes that the risk of victimization is increased when people are exposed to criminal offenders in the absence of capable guardians who could potentially prevent the occurrence of a crime. This exposure would seem to be maximized in a context where strangers predominate. Cohen, Kluegel and Land argue that persons related by primary group ties will be more likely to have a mutual interest in each other's welfare.[23] Hence, the underlying theoretical structure of the LRA thesis rests on the assumption that routine activities outside the home increase the risk of crime by strangers, even though previous studies have not tested this notion.

The present study examines the opportunity model in a multivariate examination of the simultaneous influences of age, sex, marital status, and lifestyle on stranger theft and stranger violence. The general hypothesis is that younger persons, males, single/divorced people, and those who spend leisure time in public places suffer a higher risk of stranger victimization than do older persons, females, married persons, and those who confine their activity to home situations.

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[20] Cohen, Kluegel & Land, *supra* note 14, at 511.

[21] M. HINDELANG, *supra* note 2, at 111-16.

[22] M. GOTTFREDSON, VICTIMS OF CRIME: THE DIMENSIONS OF RISK (1984).

[23] Cohen, Kluegel & Land, *supra* note 12, at 511.

A.   COMMUNITY CONTEXT

One of the major weaknesses of prior tests of routine activity and opportunity theory is that the tests generally fail to consider macro-level factors related to victimization.[24] Regardless of one's lifestyle and home situation, the community and ecological context of everyday activities is an important theoretical factor in understanding victimization risk. Ironically, the LRA/opportunity theory is based on the macro-level assumption that the spatial and temporal structure of routine activities plays an important role in determining the rate at which motivated offenders encounter criminal opportunities.[25] The theoretical concepts derived from opportunity theory thus suggest that community context is crucial in predicting patterns of stranger victimization. Four general dimensions of community and ecological context are considered in this paper: family structure, urbanization, heterogeneity, and geographical mobility.

Felson and Cohen document the importance of family activity patterns in determining the opportunity structure of predatory criminal behavior.[26] They argue that the proportion of primary individual households, such as those containing singles or nonrelatives, is an overall indicator of community guardianship. Those who live alone are more likely to be out alone (going to work, restaurants, night clubs, etc.) than married persons and are thus more vulnerable to personal crimes such as rape or robbery. Also, leaving the home unguarded during the day and night increases the risk of household crimes and reduces the capacity of neighbors to engage in mutual guardianship behavior. Therefore, a community with a high proportion of primary individual households presents a more attractive environment for crime than an area with a strong family orientation.

In support of their theory, Felson and Cohen demonstrate that, independent of factors presumed to reflect the supply of motivated offenders, such as unemployment and age composition, primary individual households significantly and positively affected crime trends in the U.S. in the period 1950-1972.[27] They conclude that "the convergence in time and space of suitable targets and the absence of capable guardians can lead to large increases in crime rates without any increase or change in the structural conditions that mo-

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[24] *See* Sampson, *supra* note 16; Cohen, Kluegel & Land, *supra* note 14. *See also* Sampson & Wooldredge, Linking the Micro- and Macro-Level Foundations of Routine Activities Theory (1987)(unpublished manuscript).

[25] Cohen & Felson, *supra* note 14, at 589-91.

[26] Felson & Cohen, *supra* note 14, at 397.

[27] *Id.* at 400.

tivate individuals to engage in crime."[28]

Family disruption, such as divorce or separation, may also increase victimization risk by decreasing a community's informal social controls.[29] Examples of informal social controls include neighbors taking note of or questioning strangers, watching over each others' property, assuming responsibility for supervision of general youth activities, and intervening in local disturbances.[30] Two-parent households provide increased supervision and guardianship not only for their own children and household property, but for the group activities of juveniles often linked with more serious crime, such as vandalism and truancy. This lack of supervision over juvenile activities is important because most delinquents have delinquent friends and commit delinquent acts in groups.[31] Consequently, Felson[32] argues that awareness and supervision of peer group and gang activity is not simply dependent on one child's family, but rather on a network of control: "The single parent household gives the community only one parent to know and hence reduces the potential linkages that can be invoked for informal social control."[33] Hence, guardianship and supervision of community activities—especially the surveillance of suspicious persons and strangers—is likely to be lower in areas of pronounced family disruption.

This Article examines whether the prevalence of primary individuals in a community exerts an influence on an individual's risk of stranger victimization independent of area family disruption. Based on the theoretical framework, family disruption and primary individual households, although related, nonetheless represent conceptually distinct factors and hence should independently affect stranger victimization. In addition, both dimensions of family structure should increase stranger victimization risk independent of individual-level social and demographic characteristics, lifestyle, and other ecological conditions.

A second but surprisingly neglected ecological factor in ex-

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[28] Cohen & Felson, *supra* note 14, at 604.

[29] *See* Sampson, Urban Black Violence: The Impact of Male Joblessness and Family Disruption, 93 AM. J. Soc. (Sept. 1987)(forthcoming).

[30] *See* S. GREENBERG, W. ROHE, & J. WILLIAMS, INFORMAL CITIZEN ACTION AND CRIME PREVENTION AT THE NEIGHBORHOOD LEVEL: SYNTHESIS AND ASSESSMENT OF THE RESEARCH (1985).

[31] Zimring, *Kids, Groups, and Crime: Some Implications of A Well Known Secret*, 72 J. CRIM. L. & CRIMINOLOGY 867 (1981).

[32] Felson, *Linking Criminal Choices, Routine Activities, Informal Social Control, and Criminal Outcomes*, in R. CLARKE & D. CORNISH, THE REASONING CRIMINAL 119 (1986).

[33] *Id.* at 124.

plaining stranger crime is urbanization. Laub is one of the few researchers who empirically explores the theoretical consequences of urbanization for stranger victimization.[34] As he argues, "[p]erhaps more than anything else urban areas are characterized as containing a large proportion of people who are strangers to one another," a situation which leads to what is often termed the "world of strangers."[35] Since daily interactions in urban centers are more likely to occur between people who are strangers, one would then expect that crime in urban areas is more likely an event between strangers. Furthermore, the housing density found in highly urbanized areas inhibits effective means of surveillance and guardianship both through sheer physical barriers and by increasing anonymity. Roncek argues that as the number of households sharing common living space increases, residents are less able to recognize neighbors, be concerned for them, or engage in guardianship behavior.[36] Strangers can thus operate more freely in highly dense areas without risking intervention by local residents, thereby increasing the probability of victimization.[37]

This rather straightforward hypothesis, however, has not been rigorously examined in previous research. Indeed, aggregate crime rates are often correlated with urbanization factors such as population size and density, but these studies do not directly address the hypothesis concerning victimization by strangers.[38] And although Laub's analysis classifies crime by strangers, he does not examine the potential effects of factors which are intertwined with urbanization, such as heterogeneity and mobility.[39] This study, therefore, empirically tests the following hypothesis: regardless of micro-level factors, such as age, sex, and marital status, lifestyle (e.g., extent of social activity outside the home), and even other community factors, such as family disruption, urbanization will directly influence the risk of stranger crime.

Since crimes of theft presumably have a larger component of utilitarian planning and assessment of opportunity attached to them as compared with the more expressive crimes of violence, it is likely that urbanization will have a greater positive effect on personal theft by strangers than on personal violence by strangers. Also, robbery,

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[34] Laub, Criminal Behavior And the Urban-Rural Dimension (1980)(unpublished manuscript).

[35] Id. at 87.

[36] Roncek, *Dangerous Places: Crime and Residential Environment*, 60 Soc. Forces 74, 88 (1981).

[37] Sampson, *Structural Density and Criminal Victimization*, 21 Crim. 276, 279 (1983).

[38] *See id. See also* Laub, *supra* note 34.

[39] Laub, *supra* note 34.

unlike assault, is disproportionately concentrated in cities; hence, urbanization reflects proximity to potential robbers.

A third dimension of community context is racial heterogeneity, which reflects the distribution of the population among various racial and ethnic groups. Heterogeneous areas are characterized by a greater diversity and mix of groups, whereas homogeneity reflects the segregation of racial groups. Not surprisingly, previous research demonstrates that people associate and interact disproportionately with persons of similar backgrounds, resulting in a tendency for criminal victimizations to involve persons of similar backgrounds.[40] Personal victimization, for example, is intraracial to a much greater degree than if encounters were based on chance expectations.[41]

Population heterogeneity, however, counteracts this tendency by increasing the probability that dyadic encounters will involve persons of different backgrounds. Heterogeneity thus increases the probability of intergroup relations, which, in turn, increases the probability of interracial victimization.[42] Because interracial crimes more likely involve strangers than intraracial crimes, racial heterogeneity should also increase stranger victimization. This hypothesis is directly tested by examining the effect of racial heterogeneity on personal victimization by strangers. Because urbanized areas are typically characterized by racial heterogeneity,[43] the crucial test is estimating the independent effects of both racial heterogeneity and urbanization on stranger victimization.

A final dimension of community structure that is theoretically connected to the phenomenon of crime by strangers is mobility. Beginning with the classic work of Shaw and McKay,[44] theorists have long viewed geographical mobility as an important indicator of community social integration. In general, social integration is defined in terms of interpersonal networks: the greater the density and intensity of interpersonal attachments, the greater the cohesiveness and solidarity among members of a community. Geographical mobility affects this relational structure by decreasing permanence

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[40] Sampson, *Group Size, Heterogeneity, and Intergroup Conflict: A Test of Blau's Inequality and Heterogeneity*, 62 Soc. FORCES 618, 620 (1984).

[41] O'Brien, *The Interracial Nature of Violent Crimes: A Reexamination*, 92 AM. J. Soc. 817, 818 (1987). For example, O'Brien shows that victimizations are more intraracial than one would expect statistically given the marginal distributions of blacks and whites in both the victim and the offender populations. *Id.* at 822.

[42] Sampson, *supra* note 40, at 625.

[43] Sampson, *Effects of Inequality, Heterogeneity, and Urbanization on Intergroup Victimization*, 67 Soc. SCI. QUAR. 751, 754 (1986).

[44] C. SHAW & H. McKAY, JUVENILE DELINQUENCY AND URBAN AREAS (1942).

and stability in personal relationships. In addition, high levels of residential mobility provide a context of anonymity that serves to decrease the chance that motivated stranger offenders will be confronted by community informal social control. By thus weakening community social integration, mobility increases rates of crime and deviance, especially by strangers.[45] To test this prediction, this study examines the relationship between community geographical mobility and the likelihood of residents suffering a personal attack by strangers.

In short, the human ecological foundation of the opportunity theory suggests that both micro-level activity patterns and community structure affect the risk of victimization by strangers. Felson and Cohen clearly argue that "as activities take people away from their households or their primary groups, the circumstances favorable for direct-contact predatory violations, *especially involving strangers*, will probably occur with greater frequency."[46] Unfortunately, prior research adopts the routine activity and opportunity framework but does not test this important theoretical implication.

This Article, therefore, applies a bi-level conception of the opportunity theory to the phenomenon of victimization by strangers. The major theoretical goal is to examine how individual-level factors and community context simultaneously increase or decrease the risk of personal stranger victimization. The central variables at the micro-level include age, sex, marital status, and lifestyle. At the ecological or community level, the theoretically relevant variables are urbanization, family structure (the proportion of primary individual households and the presence of family disruption), residential mobility, and racial heterogeneity. These dimensions have not previously been analyzed simultaneously in one study to predict even total personal victimization, let alone victimization by strangers.[47]

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[45] For further theoretical discussion of the relationship between mobility and crime, see Sampson, *supra* note 16, at 11; Crutchfield, Geerken & Gove, *Crime Rates and Social Integration: The Impact of Metropolitan Mobility*, 20 CRIM. 467 (1982).

[46] Felson & Cohen, *supra* note 14, at 397 (emphasis added).

[47] One should note that analysis of only one set of factors may potentially confound and incorrectly specify the nature of the true relationship. For example, the effect of an individual's marital status on victimization may simply reflect the ecological processes of community guardianship. In this case, the higher victimization rates of singles may be tied to the fact that single individuals are more likely to live in communities with a single-adult housing setting and low guardianship than married persons. By contrast, an aggregate-level association between neighborhood family structure and victimization rates may simply arise from micro-level household activity patterns. A linkage of micro and macro models is clearly necessary to distinguish these possibilities.

III. DATA AND RESEARCH PROCEDURES

The data analyzed in this study come from the British Crime Survey (BCS), a nationally representative survey of England and Wales conducted in 1982.[48] One respondent per household aged 16 or older was randomly selected and interviewed, resulting in a final sample of 10,905.[49] Each respondent interviewed was asked about victimizations that occurred to them in the year prior to the interview and about any prior relationship with the offender(s).[50] The resulting victimization data were collected independent of the selection mechanisms of the criminal justice system and consequently provide a rich data base in which to examine stranger crime.[51]

The BCS is also utilized because it holds several key advantages over previous victimization surveys, especially the American National Crime Survey (NCS).[52] First, the BCS was stratified, resulting in an over-sampling of inner city residents. Urbanization is one of the strongest predictors of victimization;[53] therefore a decision to stratify by inner city residence is important given the low levels of victimization prevalence. Over-sampling inner city residents, therefore, increases the likelihood of yielding persons at higher risk for victimization. Urbanization is also a variable of considerable importance in the present theoretical framework.

The BCS also contains a wealth of personal and lifestyle information not included in the NCS. For example, respondents were asked numerous questions about how often they went out of the house at night, where they went for leisure time activities, how many friends they had in the neighborhood, and how many hours their homes were left unguarded during the day. These variables— especially the indicator of leisure activities outside the home—are essential in testing a lifestyle-routine activity model.

Most importantly for the present study, the BCS contains geographical area identifiers for each household. In all, the sample was distributed across 238 electoral wards in England and Wales. These areas are comparable to urban communities or large neighborhoods, and each area contains approximately 50 sample respon-

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[48] *See* HOUGH & MAYHEW, *supra* note 17.

[49] *Id.* at 37-41.

[50] *Id.*

[51] *Id.*

[52] *See* ICPSR, *supra* note 1.

[53] Sampson, *The Effects of Urbanization and Neighborhood Characteristics on Criminal Victimization*, in METROPOLITAN CRIME PATTERNS 3 (R. Figlio, S. Hakim & G. Rengert eds. 1986).

dents.[54] Previous victimization research has tended to ignore neighborhood context in attempts to understand victimization in general, and there have been no studies of neighborhood influences on stranger violence in particular. In contrast, the design and comprehensiveness of the BCS allows one to construct community context variables that are theoretically relevant to the question of personal victimization by strangers.

Therefore, based on prior research and theoretical concerns, measures are constructed for both individual-level social and demographic characteristics, lifestyle, and community context. The social and demographic characteristics analyzed are age, sex, marital status, and educational status.[55] Age is an interval variable, whereas sex and marital status are categorical in nature. The categorical variables are indexed by dummy variables (1= male, 0=female; 1=married, 0=single, divorced, separated, and widowed). Income is poorly measured in the BCS,[56] and, hence, college education is used instead as a general proxy for individual socioeconomic status. Because of its skewed distribution, educational status is treated as categorical (1=college education, 0=high school or less).

Lifestyle is a very important concept in the routine activity theory of victimization. The most direct indicator of lifestyle relevant to personal victimization is the number of nights per week the respondent reported going outside of the home for leisure activities to places such as bars, restaurants, and the movies. The indicator ranges from zero nights to a maximum of seven nights.[57] Based on

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[54] It is not possible to determine exactly how representative the samples within each of the 238 areas are of the wider community. However, two features of the sampling design suggest that non-representativeness is unlikely to be a problem: (1) within each of the selected 238 parliamentary constituencies, the wards and polling districts were selected with probability proportional to the electorate; (2) within each ward and polling district, addresses were chosen with probability proportional to the number of electors listed therein. HOUGH & MAYHEW, *supra* note 17, at 38. Hence, the samples within each of the 238 areas appear representative of the community.

[55] There are too few non-whites in the sample (< 5%) to allow reliable analysis of ethnic group variations in victimization. In conjunction with the fact that prior research shows little or no direct effect of race on criminal assault and personal theft, Cohen, Kluegel & Land, *supra* note 14, at 506, race is thus not included as an individual-level predictor of victimization.

[56] The income question about weekly take- home pay was asked only of respondents currently in paid work; inquiry into average family or household yearly income was not made. Consequently, almost half of the sample (43%) has missing data on income and the sample that has complete data, the current employees, is not representative of the population.

[57] The BCS interview was conducted in three parts: (1) a main interview of all 10,905 respondents; (2) victim interviews with all those reporting victimization(s) in the main interview; (3) a follow-up interview of all victims and a random selection (40%) of non-victims, yielding an unweighted N of 6,329. The lifestyle questions were asked only in

the opportunity theory, one would expect that persons who go out often will occasionally expose themselves to a heightened risk of victimization. This risk is particularly likely to result in stranger crime, as one is more apt to meet strangers in public places than in home-centered situations.

Four measures of local community context were constructed by aggregating individual responses from all respondents within each of the 238 communities, computing global measures, such as mean and percentages, and adding the community indicators back into the individual-level file. Following Felson and Cohen, the measure of neighborhood guardianship is defined as the percent of primary (single-adult) households in the community.[58] In the present data, this variable has a mean of 14%, with the distribution ranging from a mimimum value of 2% to a maximum value of 36%. Family disruption is measured by the percentage of female-headed households with children. This definition is taken from previous research on family disruption and victimization.[59] The mean level of family disruption is low (2%), but there is still considerable variation—from 0% to over 10%—in all households.

The percentage of persons in a community residing at their current address less than one year was computed and used as an indicator of residential mobility. On average, 13% of residents were newcomers, ranging from 0% (no mobility) to a high of 40% of all households.

Racial heterogeneity was measured in terms of the distribution of white and non-white households in a community. When two groups are studied, heterogeneity is maximized when each group represents 50% of the population. This theoretical conception is measured by taking the sum of proportion black squared and proportion white squared and subtracting the sum from one. This measure is derived from Blau's theory of heterogeneity[60] and previous research applying it to interracial victimization.[61] The measure reflects the extent to which a community has a racially mixed population; it can take on any value from 0 to .5, with the former representing maximum homogeneity and the latter representing maximum heterogeneity. Non-whites in England are not a large

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the follow-up interview and hence the multivariate analyses are based on the sample of 6,329 persons. HOUGH & MAYHEW, *supra* note 17, at 37-41.

[58] Felson & Cohen, *supra* note 14, at 400.

[59] Sampson, *supra* note 16.

[60] P. BLAU, INEQUALITY AND HETEROGENEITY 78 (1977).

[61] Sampson, *supra* note 40.

percentage of the population[62], and this fact is reflected in the low mean heterogeneity value of .06. There is, however, surprising variation from a low of 0 to a maximum of .50.

Finally, urbanization is measured with a combined indicator of inner city residence and housing density. All residents of inner-city areas are assigned a value of one, while those living in the outer residential districts of cities and in suburbs are assigned a value of zero. Eighteen percent of the unweighted sample lived in inner city areas.[63] The theoretical framework developed above also suggests the need to take into account housing density.[64] A measure of structural housing density (% apartments) is thus constructed, yielding a mean of 16% (ranging from 0 to 94%). The indicator of inner-city residence and housing density were highly correlated (.6); hence, an overall measure of urbanization was constructed by taking the product or interaction of the two. The resulting measure taps both inner-city residence ($r = .86$) and high housing density ($r = .75$).

This Article is primarily concerned with personal victimizations by strangers that involve assaultive violence, taking of property, such as robbery or purse snatching, or the threat thereof. Personal victimizations are classified into two general types—crimes of *personal theft* such as robbery and larceny with contact, and *personal violence*, such as rape, aggravated assault, and simple assault. Victimization is sufficiently rare, as there were less than fifty reported robberies. It is impossible, therefore, to reliably examine individual crime types, at least in Great Britain. Hence, the typology of personal theft and personal violence is used to increase reliability and also to provide general comparability with previous victimization research.[65]

For each personal victimization the victim was asked about their familiarity with the offender or offenders. The possible responses included: (a) lone stranger offender; (b) lone non-stranger offender; (c) multiple stranger offenders; (d) multiple offenders known to the victim. In the presentation of some descriptive statistics stranger offending is categorized by multiple or lone offenders. The patterns, however, are very similar for lone and multiple offenders. More importantly, because of the low prevalence of victimization in

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[62] *See* M. GOTTFREDSON, *supra* note 22.

[63] *See* HOUGH & MAYLEW, *supra* note 17.

[64] *See* Sampson, *supra* note 37.

[65] *See, e.g.*, Sampson, *supra* note 16, at 13. Personal theft includes robbery and purse snatching—both of which might be thought of as a violent crime. Indeed, robberies often result in injury to the victim. However, robberies, purse snatching, and pocket-picking are classified as personal thefts because the primary ingredient in the crime is the taking of property from the person.

general, the sample size is greatly reduced when the number of offenders is simultaneously considered. Overall, less than 5% of respondents reported a personal victimization.

In fact, personal victimization is so rare that it is essentially dichotomous in nature, with most people experiencing no victimizations and a small percentage experiencing one. Multiple or repeat victimizations are even more rare.[66] Therefore, in the main analysis of stranger victimization risk in the general population, the study utilizes a simple dichotomy whereby persons attacked by either a lone stranger or multiple stranger offenders are assigned a value of one; non-victims and victims of acquaintances are assigned a zero. This procedure is followed for both personal theft and personal violence. The resulting unconditional risk measure is directly related to the theoretical goal, as it treats victimization by strangers as a unique and qualitatively different outcome from acquaintance-crime and non-victim statuses.[67] When conditional probabilities of stranger victimization are examined and given a victimization, victims of strangers are assigned a value of one and victims of non-strangers are assigned a value of zero.

Because of the extremely skewed and dichotomous nature of victimization risk, the assumptions of OLS regression are violated. To address this issue, this study uses logistic regression; the criterion is assumed to take the form $[\ln (p_i/(1 - p_i))]$, where p_i refers to the probability of suffering a stranger victimization. The logistic form is chosen because it allows easy interpretation of coefficients analogous to OLS regression. Logistic regression, unlike log-linear analysis, preserves the interval nature of predictor variables.[68]

One final analytical issue should be mentioned. Research on the spatial dynamics of crime indicates that a large proportion of serious personal crimes, such as robbery, rape, and aggravated assault, occur near the residences of both victims and offenders.[69] Hence, since the community characteristics in this study refer to large areas, a reasonable assumption is that most victimizations occur in or near community boundaries. Furthermore, many of the

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[66] M. GOTTFREDSON, *supra* note 22, at 41-42.

[67] The difficulty encountered in counting repetitive victimizations in victimization surveys suggests that it is more analytically useful to study risks via proportions victimized rather than using frequencies. Indeed, given potential response biases in the measurement of multiple and "series" victimizations, there is probably less error in such a dichotomy than in a mean rate. *Id.* at 43.

[68] J. ALDRICH & F. NELSON, LINEAR PROBABILITY, LOGIT, AND PROBIT MODELS (1984). Aldrich and Nelson provide a detailed explanation of logistic regression models and compare OLS regression to logistic regression.

[69] G. PYLE, THE SPATIAL DYNAMICS OF CRIME (1974).

causal factors under consideration, including lifestyle, age, and education, are important regardless of where the crime occurs. Therefore, to avoid unnecessary reduction in the sample size, all personal victimizations are analyzed.

IV. DESCRIPTIVE STATISTICS OF STRANGER VICTIMIZATION

Table 1 presents basic descriptive statistics on the prevalence of personal theft and violence victimization by strangers across categories of individual-level variables.[70] The most obvious feature of these data is the extremely low prevalence of stranger victimization in the general population. Only about 2% of residents in Great Britain reported being assaulted by a stranger, and less than 1% were robbed, pick-pocketed, or had their purse snatched by a stranger. The probability of suffering a serious personal crime by strangers is, therefore, very low.

Nevertheless, there is still considerable variation in this risk by social/demographic characteristics, at least for personal violence. Note, for example, that males suffer a risk of violent victimization by strangers over three times greater than females (3.6% of males vs. 1.1% of females). Single and divorced or separated persons have a stranger violence risk roughly 2.5 times higher than married persons. As for lifestyle, stranger victimization risk increases as the number of nights out for leisure activities increases. In fact, the risk of stranger violence is almost four times higher for those who go out five to seven nights (8.7%) than for those who confine their activities to home (2.3%).

Despite the impressive predictive power of lifestyle, the strongest determinant of stranger violence is age.[71] There is a strong monotonic decline in the prevalence of stranger violence as age increases. Indeed, the risk of stranger violence for young persons is

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[70] As noted earlier, the BCS sample was stratified so that metropolitan inner-city areas were sampled at three times the level at which their electorate would have justified. HOUGH & MAYHEW, *supra* note 17, at 39. The descriptive statistics are weighted to correct for this imbalance in sampling design. Other possible weighting schemes, such as household crimes, series offenses, follow-up interview, and victim damage forms, are not used either because they are not directly relevant to the model being examined, or the weights were in most cases one (e.g., weight to correct for electors vs. persons at each address) and hence no differences in patterns resulted. Also, the main purpose of this Article is estimation of structural parameters—not descriptive statistics. The logistic regression estimates of structural parameters are, thus, based on unweighted data. Furthermore, the follow-up interview over-represents victims, and hence the absolute values of percentage victimized in Tables 1 and 2 are higher for lifestyle, which was asked only in the follow-up, than the demographic characteristics.

[71] Although age is inherently a continuous variable, it is categorized here for tabular presentation.

TABLE 1
DISTRIBUTION OF THE PREVALENCE OF PERSONAL VIOLENCE AND THEFT VICTIMIZATION BY STRANGERS ACROSS SOCIAL/DEMOGRAPHIC CHARACTERISTICS, BRITISH CRIME SURVEY (1982)

	PERSONAL VIOLENCE % VICTIMIZED BY STRANGER	PERSONAL THEFT % VICTIMIZED BY STRANGER
Sex		
Male	3.6	0.6
Female	1.1	1.0
Age		
16-29	5.4	0.9
30-45	2.3	0.8
46+	0.7	0.8
Marital status:		
Married	1.5	0.6
Single/div./sep.	3.7	1.3
Education:		
High school	2.1	0.7
College education	3.3	1.2
Lifestyle (nights out for leisure):		
No nights out	2.3	1.3
1-2 nights out	3.7	1.3
3-4 nights out	4.9	1.6
5-7 nights out	8.7	2.0
Total percent:	2.2	0.8
Weighted N of cases:	(11,067)	(10,977)

7.7 times higher than the corresponding risk for older adults. Overall, then, younger persons, non-married persons, males, and those who spend a significant portion of time away from home have the highest risk of assault by strangers. These initial results generally accord quite well with predictions derived from the opportunity model.

Turning to the second column of Table 1, stranger theft shows much less systematic variation across individual characteristics than does violence. For example, there is little variation by age and lifestyle. Still, married persons and those with a high school education do suffer a lower risk than single or divorced persons and college graduates. Interestingly, females exhibit an overall higher prevalence of stranger theft than males, apparently because the biggest component of stranger theft is purse-snatching. Since the prevalence of robbery is so low (less than 25% of total personal thefts), personal theft essentially becomes a proxy for purse-snatching. It is

not surprising, therefore, that females show a higher prevalence estimate for this type of offense. In any event, the overall risk of theft victimization risk by strangers is clearly much lower than the risk of stranger violence.

Table 2 displays the conditional distribution of victimization events by victim-offender relationship. The sample here is of victimizations, not the general population. There are very few personal theft victimizations on which the percent distribution is based (110) because the prevalence rate of total personal theft is very low (1.1%). There is also considerable missing data for personal theft classified by prior relationship between victim and offender. Specifically, about half of the personal theft victims (51%) had no information about their offenders,[72] largely because purse snatching and pocket-picking are fleeting events during which the victim does not get a good look at the offender. On the other hand, victims of violence almost always have a face to face confrontation with their offender; 93% of these victims reported details on prior relationship.

Table 2 reveals that the vast majority (86%) of the 110 personal theft victimizations involved strangers, compared to only 45% of the 646 personal violence crimes. Hence, the data suggest that the determinants of stranger theft are quite similar to the determinants of total theft in the general population. This is not the case for violence, though, as less than half of all attacks involved strangers. The data also show that stranger violence occurred more often to male victims than female victims and more often to younger victims than older victims. For personal theft, older victims showed a slightly greater tendency to experience stranger offenses than younger victims. There is little variation among other factors. Given the very small number of personal theft victimizations and the fact that almost all such victimizations are committed by strangers, the remainder of the analysis of the correlates and consequences of victimization experiences focuses on violence.

Age was the strongest predictor of the risk of stranger violence, and hence it is of interest to examine in more detail its underlying structure. Therefore, Table 3 displays the percentage of violence victimizations perpetrated by strangers, cross-classified with age of victim and perceived age of offender. There are very marked variations in the data that help explain the patterns in Tables 1 and 2. For example, for younger victims (age 16-29), the percent of stran-

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[72] In constructing the stranger-victimization risk measures, those victims who could not answer any questions about the offender are excluded from analysis. This exclusion comprises less than 2% of the total sample of victims and nonvictims. Still, there is proportionately more missing data for personal theft than for personal violence.

TABLE 2
DISTRIBUTION OF PERSONAL VIOLENCE AND THEFT VICTIMIZATION EVENTS BY SOCIAL/DEMOGRAPHIC CHARACTERISTICS AND STRANGER-OFFENDING, BRITISH CRIME SURVEY (1982)

	VIOLENCE VICTIMIZATIONS % STRANGER-OFFENDERS	THEFT VICTIMIZATIONS % STRANGER-OFFENDERS
Sex		
Male	52	86
Female	30	85
Age		
16-29	48	79
30-45	40	88
46+	40	90
Marital status:		
Married	44	82
Single/div./sep.	43	91
Education:		
High school	43	85
College education	45	88
Lifestyle (nights out for leisure):		
No nights out	42	94
One or more nights out	44	85
Total percent:	45	86
Weighted N of cases:	(646)[a]	(110)[a]

[a] These are the number of victimizations in which the victim was able to provide information on the offender as a stranger or acquaintance. In 51% of the theft victimizations victims did not see the offender (e.g., offender grabbed purse from behind). In contrast, only 7% of assault victims had missing data on this item.

ger offending rises dramatically as the age of offender increases. This correlation accords with the element of prior knowledge, in which persons disproportionally associate with others of their own age.[73] Inter-age contacts are thus more likely to involve strangers than are intra-age contacts. Hence, a young victim of an adult offender encounters a stranger adult in 74% of all events. Similarly, adult victims assaulted by juvenile offenders are also usually confronted by strangers. Adult offenders and adult victims, in contrast, are strangers to each other in only about one-fourth (27%) of the events. In short, the tendency of people to associate with others of the same age, combined with the overall low risk of adult victimization, accounts for the fact that the prevalence of stranger violence declines markedly with age.

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[73] Sampson, *supra* note 40, at 627.

TABLE 3
PERCENT OF PERSONAL VIOLENCE VICTIMIZATIONS ATTRIBUTED TO STRANGERS, BY AGE OF VICTIM AND AGE OF OFFENDER, BRITISH CRIME SURVEY (1982)

	AGE OF OFFENDER		
AGE OF VICTIM	0-16	16-25	25+
16-29	10%	51%	74%
30-45	40%	58%	29%
46+	75%	58%	27%
Weighted victimizations:	47	326	255

Before exploring the causal structure of stranger victimization, a brief examination of the circumstances and consequences of the event itself is useful. The BCS data are particularly helpful in this regard, as victims polled in that study were asked a series of questions about injuries received, self-protection, offender weapon use, and other details of the assault. The question that naturally arises is: do stranger assaults differ systematically from non-stranger assaults along these dimensions?

Table 4 explores the circumstances of personal violence victimization in relation to both stranger offending and number of offenders. For the most part, the elements of victimization events do not differ much by victim-offender relationship. For example, weapon use, injury, and victim self-protection do not vary at all by stranger offending when there was only one offender, while for multiple offenders, there are slight variations. In particular, victims of non-stranger offenders required medical attention at more than twice the rate of victims of stranger offenders, and the former reported victimizations to the police at a higher rate than the latter. Another noticeable pattern is that multiple offenders, regardless of whether they are strangers, are more likely to use weapons.

The only consistent pattern in the data is that stranger offenses involve alcohol use. For example, 59% of lone stranger offenders were drinking as compared with 43% of lone acquaintance offenders, representing a difference of 16% (p < .01). The corresponding difference for multiple offenders is 13%. This finding is consistent with the lifestyle and routine activity notion that stranger assaults often stem from confrontations in public settings such as bars and taverns in which strangers congregate and consume alcohol. Such settings are particularly conducive to fights and brawls. Thus, stran-

TABLE 4

DISTRIBUTION OF THE ELEMENTS OF PERSONAL VICTIMIZATION BY
VIOLENCE BY STRANGER-OFFENDING AND GROUP OFFENDING,
BRITISH CRIME SURVEY (1982)

| | LONE OFFENDER | | MULTIPLE OFFENDERS | |
	NON-STRANGER	STRANGER	NON-STRANGERS	STRANGERS
% Offender drinking	43	59	49	62
% Victim needed medical care by doctor	10	9	12	5
% Offender used weapon (e.g., gun, knife)	14	15	24	23
% Victim attempted self-protection	60	62	61	71
% Victimization known to police	23	32	39	30
Weighted victimizations:	284	148	66	124

ger offending is more likely to involve drinking, regardless of the
number of offenders. On the other hand, the factors of self-protec-
tion, weapon use, injury, and reporting to the police do not vary
systematically across the stranger/non-stranger dimension.

V. MULTIVARIATE TEST OF THE THEORETICAL MODEL

This section of analysis turns to the central theoretical question
posed at the beginning: what individual-level, lifestyle, and commu-
nity contextual factors explain the risk of stranger victimization? As
described earlier, logistic regression is used to estimate the maxi-
mum-likelihood parameters of the unconditional probability of suf-
fering an attack by strangers. Logistic regression allows the
introduction of interval-level measures of community context (het-
erogeneity, urbanization, mobility, family disruption, and primary
individual households). It also permits an estimate of the independ-
ent contribution that each variable makes to the prediction of stran-
ger victimization. For example, do the effects of individual
background factors and lifestyle continue to exert effects on stran-
ger victimization when community context is controlled? Are com-
munity effects rendered unimportant once a persons' lifestyle is
accounted for? This section examines these questions from the the-
oretical vantage point of the opportunity model of predatory
victimization.

Panel A in Table 5 presents the maximum-likelihood logistic
coefficients and the ratios of coefficients to standard errors for the

TABLE 5
LOGISTIC REGRESSION PREDICTING RISK OF PERSONAL STRANGER VIOLENCE AND PERSONAL STRANGER THEFT BY INDIVIDUAL CHARACTERISTICS AND COMMUNITY STRUCTURE, BRITISH CRIME SURVEY (1982)

A. STRANGER VIOLENCE	REGRESSION COEFFICIENT	COEFFICIENT/STANDARD ERROR
Age	−.040**	−8.02
Married	−.298**	−2.02
College educated	.058	.35
Male	1.052**	7.29
Nights out	.032	.94
Urbanization	.000	.30
Heterogeneity	.656	1.24
Family disruption	.074**	2.82
Percent primary inds.	.030**	2.85
Residential mobility	.014*	1.52

B. STRANGER THEFT	REGRESSION COEFFICIENT	COEFFICIENT/STANDARD ERROR
Age	.006	1.42
Married	−.582**	−2.94
College educated	.346	1.33
Male	−.726**	−3.53**
Nights out	.082*	1.57
Urbanization	.022**	5.21
Heterogeneity	2.876**	4.53
Family disruption	.066**	2.03
Percent primary inds.	.002	.17
Residential mobility	.016	1.15

** 2.0 times Standard Error.
* 1.5 times Standard Error.

prediction of stranger violence. Consistent with the bivariate results presented earlier, age, marital status, and gender have direct effects on stranger violence independent of the other predictors. The coefficients reveal that males, younger persons, and single/divorced persons have a significantly higher probability of stranger violence, with all else being equal, than do females, older persons, and married persons. The ratios of parameter estimates to standard errors for age and gender exhibit the largest magnitudes of all exogenous characteristics.

Interestingly, once community context and demographic variables are controlled, lifestyle has no effect on stranger violence.

This finding is contrary to the LRA thesis, which predicted that those who frequently leave the home will suffer a higher risk of stranger violence than those who confine their activities to the home. Apparently, once background variables and social structural context are accounted for, variations in lifestyle do not help predict violence by strangers.

Indeed, Panel A underscores the importance of considering community context to fully understand stranger violence. Despite the strong influence of age, gender, and marital status, persons living in areas characterized by family disruption, the existence of many primary, or single, individuals, and residential mobility suffer higher than average risks of stranger violence. Apparently, the anonymity, attenuated guardianship, and lowered surveillance in areas of high residential mobility, unattached singles, and family disruption significantly increases stranger victimization risk, regardless of an individual's lifestyle and demographic characteristics.

Panel B presents the same theoretical model but predicts stranger theft. Compared to violence, community context has even greater predictive power than individual factors. For example, both urbanization and heterogeneity have ratios of coefficients to standard errors larger than four, indicating that residents of highly urbanized areas and areas of racial heterogeneity experience much higher risks of stranger theft than do residents of areas that are more racially homogeneous and lower in urbanization. This finding accords well with the theoretical model outlined above: urban areas characterized by population and housing density increase contact with strangers while reducing guardianship capacities, thereby increasing stranger victimization risk. Also, interracial communities promote greater interracial contact, which tends to involve strangers. Racial heterogeneity, therefore, increases the relative risk of personal theft by strangers.[74] Besides urbanization and heterogeneity, family disruption also has a direct impact on stranger theft.

Although community context is more important, individual and lifestyle variables also have predictive power. The coeffcients for gender, marital status, and lifestyle are all significant, and they reveal that females, unattached singles, and those persons who fre-

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[74] When a dichotomy of groups is analyzed such as non-whites and whites, racial heterogeneity is a function of group size. Thus, for example, as the percent of non-white increases, racial heterogeneity also increases. It is not clear whether non-whites in Great Britain have higher offending rates than whites, but, if they do, then living in high percent non-white areas increases proximity to offenders and, hence, the risk of victimization. Consequently, some of the effect of racial heterogeneity may simply reflect increased exposure to high-risk environments, including both stranger and non-stranger victimization.

quently go out at night for leisure activities have a higher risk of stranger theft than their married, male, home-centered counterparts. These findings generally support the LRA thesis, although the magnitude of the lifestyle effect is rather weak. Also, as discussed earlier, the higher risk of stranger theft for females is consistent with the opportunity model. Females are apparently at higher risk than males because purse snatching dominates personal theft.

To validate the above results, several sensitivity checks were conducted. The major test involved a re-specification of the theoretical model to accommodate competing theoretical perspectives. In particular, traditional theories of crime and victimization emphasize variables, especially economic deprivation and unemployment, that presumably reflect offender motivation. For example, ecological analyses typically concentrate on such factors as median income, unemployment, and occupational status.[75] In contrast, the opportunity model emphasized in this study focuses on factors that facilitate the convergence of motivated offenders with suitable targets in the absence of guardians. For this reason, the theoretical variables chosen relate to factors such as family structure, urbanization and mobility. To fully validate the theory, however, the opportunity model must predict stranger violence independent of the supply of motivated offenders.[76]

Therefore, the logistic regressions in Table 6 are re-estimated by dropping the statistically and substantively insignificant predictors in Table 5. Then, two of the most important offender motivational variables were entered into the equation: community socio-economic status and the unemployment rate.[77] The empirical question is the extent to which the explanatory power of the opportunity and routine activity factors are altered in the re-specification.

The results in Table 6 show unequivocally that the major patterns never change. For example, the individual-level factors of age, gender, and marital status continue to exert strong effects on stran-

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[75] Byrne & Sampson, *Key Issues in the Social Ecology of Crime,* in J. BYRNE & R. SAMPSON, THE SOCIAL ECOLOGY OF CRIME 1 (1986).

[76] Actually, given the earlier analysis of urbanization and racial heterogeneity (the latter of which is correlated highly with percent non-white), one could argue that a proxy index of the supply of motivated offenders has already been included in the model. Nevertheless, the specification of community socio-economic status and unemployment measures will serve to provide a further and hence stricter test.

[77] *See* Cohen & Felson, *supra* note 14; Felson & Cohen, *supra* note 14; Byrne & Sampson, *supra* note 75. The socio-economic status index is constructed by summing normalized indicators of percent college-educated and percent high-income in the community. The income measure alone is not sufficient because of missing data. The unemployment measure refers to the proportion of the labor force currently unemployed.

ger violence despite community socio-economic status and unemployment (see Panel A). Similarly, the structural predictors of family disruption, mobility, and percent primary individuals have significant positive effects on stranger violence. Community socioeconomic status and unemployment do not, however, affect stranger violence. The underlying theoretical assumptions of the opportunity model appear well-substantiated. By implication, these results demonstrate the inadequacy of theoretical models that concentrate solely on economic stratification.

Panel B of Table 6 replicates the revised model on stranger theft. As in Table 5, urbanization, racial heterogeneity, and family disruption have large and significant positive effects. In fact, heterogeneity and urbanization have by far the largest impact on stranger theft. Males and married persons also exhibit reduced risks of stranger theft, independent of socio-economic status and unemployment. The only change is that lifestyle is now insignificant. Interestingly, unemployment has a significant negative effect on stranger theft. This pattern may stem from the reduced opportunities for theft found in areas of deprivation and low employment. Cantor and Land argue that there is simply less to steal in times and areas of high unemployment.[78] In any event, the results clearly show that, despite indicators of the pool of motivated offenders and one's individual lifestyle, community context, age, gender, and marital status emerge as the primary determinants of personal victimization by strangers.

As a further test of the opportunity theory, the original logistic model in Table 5 is also replicated on the sub-sample of victims, with victims of stranger offenders coded one and victims of non-stranger offenders coded zero. This procedure and coding implies an interest in the question of conditional probabilities: once risk factors associated with becoming a victim are eliminated (i.e., once one becomes a victim), what are the residual effects of individual and community factors on suffering a stranger crime versus an acquaintance crime?

There are too few personal theft victims (< 150) to conduct extensive multivariate analysis. In addition, maximum-likelihood estimation procedures are unstable in such small data sets. Therefore, the major attention is focused on victims of violence ($N > 500$) where the results are of greater practical and theoretical value for this Article. There is also less variation in stranger theft since al-

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[78] Cantor & Land, *Unemployment and Crime Rates in the Post-World War II United States,* 50 AM. SOC. REV. 317 (1985).

TABLE 6
RE-SPECIFIED LOGISTIC MODEL PREDICTING RISK OF PERSONAL STRANGER VIOLENCE AND PERSONAL STRANGER THEFT, BRITISH CRIME SURVEY (1982)

A. STRANGER VIOLENCE	REGRESSION COEFFICIENT	COEFFICIENT/STANDARD ERROR
Age	−.046**	−9.74
Married	−.286**	−2.05
Male	1.100**	7.90
Neighborhood SES	.036	1.03
Unemployment rate	.014	0.90
Family disruption	.080**	3.35
Percent primary inds.	.030**	3.31
Residential mobility	.016*	1.80

B. STRANGER THEFT	REGRESSION COEFFICIENT	COEFFICIENT/STANDARD ERROR
Married	−.568**	−2.93
Male	−.756**	−3.72
Nights out	.060	1.21
Neighborhood SES	.072	1.40
Unemployment rate	−.056**	−2.03
Urbanization	.020**	5.66
Heterogeneity	3.440**	5.38
Family disruption	.090**	2.73

** 2.0 times Standard Error.
* 1.5 times Standard Error.

most all offenders are strangers. Although the sample of victims is by definition very skewed and nonrepresentative of the population, analysis of this model sheds further light on victim-offender interaction and its conditional dependence on individual and environmental context.

To address the problem of small sample sizes, an initial model is used for both theft and violence victims, and each coefficient is inspected for significance. Insignificant factors are eliminated to save degrees of freedom; then, community socio-economic status and unemployment are entered, and the logistic model is re-estimated. The coefficients of this reduced conditional-risk model are presented in Table 7.

The results once again demonstrate the power of community context in determining stranger offending patterns. Once a violence victim (Panel A), the only individual-level factor that matters is

TABLE 7
REDUCED LOGISTIC EQUATIONS PREDICTING CONDITIONAL PROBABILITY OF STRANGER VIOLENCE AND STRANGER THEFT GIVEN A VICTIMIZATION, BRITISH CRIME SURVEY (1982)

A. STRANGER VIOLENCE (1 = STRANGER-OFFENDER)	VIOLENCE VICTIMS SAMPLE	
	REGRESSION COEFFICIENT	COEFFICIENT/STANDARD ERROR
Male	.878**	4.80
Percent primary inds.	.040**	3.09
Residential mobility	.030**	2.12
Neighborhood SES	.044	.91
Unemployment rate	−.030	−1.39

B. STRANGER THEFT (1 = STRANGER-OFFENDER)	THEFT VICTIMS SAMPLE	
	REGRESSION COEFFICIENT	COEFFICIENT/STANDARD ERROR
Age	.044**	2.86
Married	−.952*	1.77
Urbanization	.032**	2.43
Neighborhood SES	−.002	−.01
Unemployment rate	−.046	−.75

** 2.0 times Standard Error.
* 1.5 times Standard Error.

sex; males are much more likely to face stranger offenders than are females. On the other hand, both percent primary individuals and residential mobility have significant positive effects and together account for greater predictive power than gender. Victims of violence, therefore, are much more likely to confront stranger offenders in areas of high mobility and high percentage of single and unattached persons. As in the assessment of stranger violence risk in the general population, this pattern strongly corroborates the integrated LRA/opportunity theory.

Although the small sample size of theft victims warrants cautious interpretation, Panel B reveals that urbanization and age are the most important predictors of the conditional probability of stranger theft. Once victimized, older victims are more likely to experience a theft by strangers than younger victims. This pattern corresponds to the bivariate results in Table 2. Consistent with the macro-level theoretical perspective, Panel B also reveals that urbanization significantly increases the conditional probability of stranger theft. Heterogeneity and family disruption increased the unconditional risk of stranger theft (Tables 5-6), but they do not affect the

conditional probability. The data thus strongly point to the relatively greater importance of urbanization in understanding patterns of personal theft by strangers.

Finally, for comparative purposes, a limited analysis is conducted on non-stranger personal violence and theft in both the general population and in the sub-sample of victims.[79] In both cases, as expected, the community context variables of residential mobility and percent primary-individual households have either no effect or the opposite effect on non-stranger violence. For example, the unstandardized coefficients reflecting the effect of mobility and percent single-adult households on non-stranger assault are both -.006; this value is smaller than their standard errors and, hence, is not significant. In absolute values, the effect of percent primary individuals on stranger violence (see Table 5) is five times greater than its effect on non-stranger violence; for mobility, the effect on stranger violence is two times higher. These results reinforce the main hypothesis from the opportunity model that mobility and primary-individuals are important factors because they increase the risk of violence by strangers.

Similarly, urbanization does not affect either the unconditional or conditional risk of acquaintance theft. This finding supports the notion that cities and highly urbanized areas are "world[s] of strangers," increasing predatory theft among people with no prior relationship with one another. In sum, these differential effects would have been masked if total assaults and thefts had been analyzed, underscoring once again the need for the differentiation of crimes by victim-offender relationship.

VI. DISCUSSION AND CONCLUSION

This Article addresses two specific limitations of previous research. First, previous studies placed too much emphasis on individual-level factors affecting stranger victimizations such as age, sex, race, income, and marital status, rather than focusing on the effects of community risk factors. Second, other studies fail to systematically apply the lifestyle-routine activity and the opportunity model to the phenomena of stranger victimization.

The results have proved fruitful, thereby demonstrating the importance of linking the micro- and macro-level dimensions of victimization by strangers. First, the results confirmed the importance of micro-level risk factors in predicting stranger victimization. Micro-level risk factors, however, are not sufficient to fully under-

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[79] For the sake of brevity, these data are not shown.

stand stranger victimization. Indeed, despite the strong influence of age, gender, and marital status, persons living in areas characterized by high levels of family disruption, primary individuals, and residential mobility, suffer higher than average risks of stranger violence.

Further, urbanization and the heterogeneity of the community increase the probability of stranger theft. This finding accords well with theory prediction, because urban areas with high density population and housing are associated with increased contact with strangers and reduced guardianship capability. Also, interracial communities promote greater interracial contact which tends to involve strangers. Therefore, racial heterogeneity also increases the relative risk of personal theft by strangers.

These results hold even when controlling for the supply of motivated offenders. The introduction of unemployment and socioeconomic status factors did not alter the importance of community context when predicting patterns of stranger victimization. In addition, the percentage of single-adult households and residential mobility had significant positive effects on the conditional probability of stranger violence, while urbanization had significant positive effects on the conditional probability of stranger theft.

In sum, this study demonstrates that an explicit focus on stranger crime in social and environmental context is useful in predicting stranger victimizations. In particular, the results show that the causes of stranger crime are often quite distinct, and that the individual-level variables and explanations offered by previous theories are insufficient. Most notably, once community context and demographic variables are controlled for, lifestyle has no effect on stranger violence or stranger theft. This finding contrasts with the routine activity thesis, which states that those who frequently leave the home should suffer a higher risk of stranger crime than those who confine their activities to home. Apparently, once background variables and social structural context are accounted for, variation in lifestyle does not help to predict victimization by strangers.

Overall, these findings suggest that students of criminal victimization place too much emphasis on lifestyle in explaining victimization risk. Too little time has been spent examining how criminal opportunity structures are rooted in ecological and community context. For example, criminologists expend much effort investigating how daily activities and lifestyles, such as locking doors, owning burglar alarms, walking in pairs, and avoiding bars, can reduce victimi-

zation risk. But, as Garofalo[80] persuasively argues, to the extent people face structural constraints in their choice of housing and work environments, criminologists do a great disservice to simply remind the public that staying at home reduces crime. Indeed, it seems that victimization, especially by strangers, must be analyzed according to its structural context. Thus, future studies should look to the more definitive linkage of micro- and macro-level opportunity models in the examination of victimization by strangers.

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[80] *E.g.*, Garofalo, *Reassessing the Lifestyle Model of Criminal Victimization*, in M. GOTTFRED-SON & T. HIRSCHI, POSITIVE CRIMINOLOGY (1987).