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# Social Capital and Homicide*

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*Abstract*

*Despite recent theoretical attention to "social capital" and its impact on a range of public problems, including crime, few studies have evaluated the relationship between crime rates and levels of social capital across populations. That research gap is due, in part, to the absence of macro-level empirical indicators of social capital. In this article, we measure social capital as a latent construct with aggregated voting and organizational membership data, and survey data on social trust, and examine its relationship with homicide rates for a nationally representative sample of geographic areas. Structural equation models show that the construct of social capital has a significant direct effect on homicide rates, net of other structural covariates, and controlling for the reciprocal influence of homicide on social capital. Although social capital mediates little of the effect on homicide of levels of economic deprivation, it explains more than two-thirds of the effect of Southern regional location. The results indicate that depleted social capital contributes to high levels of homicide, and provide a promising basis for future research on the mechanisms linking social capital to crime at the macro level.*

The status of theoretical perspectives on crime tends to rise and fall over time in a cyclical fashion. As Bursik and Grasmick (1993:ix) observe, the classic sociological theories that dominated criminology in the early and middle part of the twentieth

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century clearly emphasized the "group aspects" of criminal behavior. With the growth of survey methodology, however, individualistic approaches became increasingly popular (Coleman 1986). Group-level approaches have once again garnered considerable interest in recent years as scholars have introduced the concept of "social capital" to help explain the differential capacity of human communities to solve a wide range of collective problems, including crime.

Social capital refers in general terms to cooperative social relationships that facilitate the realization of collective goals. As explained more fully below, it manifests itself in mutually reinforcing relationships between interpersonal trust and civic engagement (Brehm & Rahn 1997). Several scholars have suggested that depleted social capital leads to crime and other social problems (see Kawachi, Kennedy & Lochner 1997; Putnam 1995), but little systematic research has been carried out on the relationship between social capital and crime rates. Moreover, no studies have assessed the relationship between social capital and homicide across a nationally representative sample of geographic areas in the U.S.[1] In this article we apply structural equation modeling to examine the effects of the core elements of social capital — trust and civic engagement — on homicide rates for a sample of macro-social units in the U.S.

## Theoretical Background

The concept of social capital has somewhat different meanings among social scientists. Our conceptualization, rooted in the relationship between trust and civic engagement, differs from some others in its emphasis on social action as well as social resources and perceptions. We also employ a conception of interpersonal trust whose application is not restricted to a small community or acquaintances, but also encompasses relations with distant or unfamiliar others. We discuss these distinctions below and then relate the concept of social capital to dominant sociological approaches to the study of crime.

### The Concept of Social Capital

Contemporary research and theory on social capital in the sociological literature draw most heavily on the work of James S. Coleman (1990).[2] Coleman defines social capital by its function: social capital is "created when the relations among persons change in ways that facilitate action" (1990:304). Accordingly, social capital is not a "single entity" but encompasses different aspects of social structure that foster individual and collective action (302). Social capital differs from physical capital in that it is not embodied in material form, and it differs from human capital in that it does not derive from personal qualities. Rather, the distinctive feature of social capital is that it is "embodied in the *relations* among persons" (304, original emphasis). Social capital inheres in social relationships, specifically in those forms

of relationships that enable individuals to cooperate with one another to realize goals.

Coleman focuses primarily on the potential benefits of social capital for individual actors. In contrast, political scientists have conceptualized social capital as a property of collectivities — "towns, cities, and even entire nations" (Portes 1998:18). The most influential proponent of this approach to social capital is Robert Putnam (1993, 1995; see Jackman & Miller 1998, for a review). According to Putnam, social capital refers to "features of social organizations, such as networks, norms, and trust, that facilitate action and cooperation for mutual benefit" (1993: 35). In practice, this approach to social capital directs attention to two features of collectivities: the degree of interpersonal trust and the level of civic engagement. A trustworthy social environment is one in which persons readily assume obligations to others and expect that others will fulfill obligations to them. Under such conditions, people are encouraged to work together for shared purposes (Hearn 1997:97; see also Fukuyama 1995).

Trust may be local or global in scope. Persons may trust members of their own community and be suspicious of outsiders, or vice versa. The effective mobilization of social capital in large-scale social aggregates such as those under investigation in this study depends on people's willingness to trust and cooperate with others even when they do not have direct knowledge of or contact with them. "Generalized trust allows people to move out of familiar relationships in which trust is based on knowledge accumulated from long experience with particular people" (Brehm & Rahn 1997:1008). Such generalized trust makes the "proclivity" for cooperation "portable" and in so doing encourages new forms of cooperation (Hearn 1997). Fukuyama (1995) argues that generalized trust promotes "spontaneous sociability," which he considers to be the most useful form of social capital (see also Hearn's 1997:97-105 exegesis of Fukuyama's work).[3]

Civic engagement similarly yields social capital by creating and sustaining organizations that are useful not only for meeting their original, explicit goals, but for pursuing other collective purposes as well (Coleman 1990:312). Importantly, trust and civic engagement are likely to be mutually reinforcing: "The more that citizens participate in their communities, the more they learn to trust others; the greater the trust that citizens hold for one another, the more likely they are to participate" (Brehm & Rahn 1997:1002).

Because our conception of social capital encompasses both civic engagement and social trust, it differs from that offered in a prominent analysis of change over time in social capital in the U.S. Paxton (1999) maintains that a behavioral measure such as civic engagement should be treated as an outcome rather than an indicator of the level of social capital in a community. Following the research tradition in political science, we view trust and engagement as mutually reinforcing elements of social capital, whereas Paxton would restrict the concept to only those social resources and ties that do not "include specific actions of individuals, such as voting

or volunteering" (101). However, other indicators in Paxton's model of social capital, such as visiting with friends and neighbors, clearly do involve the actions of individuals. While acknowledging the disagreement in the literature over how best to model the indicators and outcomes of social capital (Paxton 1999:93), we prefer a conception of social capital that incorporates components of social action — or that does not exclude them *a priori* — along with the ties, resources, and perceptions that facilitate action. We nevertheless supplement our main analyses by examining a measurement model of social capital informed by Paxton's work, as explained below.

## Linking Social Capital and Criminal Violence

Why should social capital be related to *crime*, and more specifically, to levels of homicide? We propose that social capital can be linked with criminal violence through an application of three dominant theoretical perspectives in criminology: social disorganization, anomie, and strain theory.

The basic contention of classical social disorganization theory is that crime results from weak informal social controls (Kornhauser 1978). When communities are disorganized, neighbors are unwilling to engage in the kinds of surveillance and monitoring that deters potential offenders. It seems reasonable to hypothesize that both of the core elements of social capital — civic engagement and trust — are associated with strong social organization. Participation in civic activities should foster interpersonal ties that can serve as the foundations for informal control. Indeed, involvement in activities explicitly targeted towards crime protection, such as neighborhood watches, is itself a form of civic engagement. Thus, high levels of civic engagement should strengthen social organization and promote informal social control, thereby yielding low levels of crime and violence.

With respect to interpersonal trust, recent studies in the social disorganization tradition have examined the linkage between neighborhood-based trust and neighborhood crime rates. Sampson and colleagues (Sampson & Raudenbusch 1999; Sampson et al. 1997, 1999), for example, incorporate such localized trust within the construct of "collective efficacy," which is defined as the "linkage of cohesion and mutual trust with shared expectations for intervening in support of neighborhood social control" (Sampson & Raudenbusch 1999:612-13). The findings of their research are consistent with the hypothesis that widespread trust in one's neighbors is associated with low rates of crime.

Whereas classical social disorganization theory provides a theoretical rationale for linking social capital with crime and violence via informal social control, another intervening mechanism is suggested by Bursik and Grasmick's (1993) expanded version of social disorganization theory, which they refer to as the "systemic model of crime." The systemic model of crime integrates formal "public control" with informal processes of control. Public control refers to the "ability of

the community to secure public goods and services that are allocated by agencies located outside the neighborhood" (1993:17). The agencies with the most obvious relevance to crime control are law enforcement agencies. We suggest that areas with extensive civic engagement are better able to secure adequate policing and other resources relevant to the "public control" of crime than are those with lesser involvement in civic activities.

Similarly, a neighborhood's capacity to mobilize resources beyond its borders, and in so doing to strengthen formal public control, is also likely to be related to generalized levels of trust. As argued earlier, generalized trust is conducive to a "proclivity for cooperation" which extends beyond those with whom people have regular, on-going social relationships. This kind of cooperation is likely to be especially useful for securing resources from governmental bureaucracies such as law enforcement and social service agencies.[4] In short, classical social disorganization theory and the systemic model of crime suggest that the two core elements of social capital — civic engagement and trust — are linked with crime and violence through the mechanisms of informal and formal social control.[5]

The conceptualization of trust as generalized perceptions that people are trustworthy and that social obligations can be expected to be fulfilled also facilitates the formulation of a hypothesized link between social capital and criminal violence through the mechanism of "anomie," a weakening of the norms governing behavior (Rosenfeld & Messner, 1998; see also Sampson 1997:41). Strong commitments to the normative order are likely to accompany widespread trust because when people trust one another, they can be reasonably confident that mutual obligations will be fulfilled and that norms will be obeyed. In contrast, when people are highly suspicious of others, there will be little faith in the regulatory powers of norms. Thus, the level of social capital in collectivities should be inversely related to anomie, and anomie should be positively associated with criminal violence in accord with conventional criminological theory.

Finally, social capital can be related to criminal violence by means of the "strain" theoretical perspective (Land, McCall & Cohen 1990:926; see also LaFree 1999:139). In some respects social capital serves as a resource like other forms of capital. Hence, a low stock of social capital can be viewed as another form of deprivation along with poverty, joblessness, and limited education. Individuals draw on a community's stock of social capital just as they draw on physical and human capital resources to achieve goals and meet normative expectations. If the available stock of social capital is not sufficient for goal attainment, then classic strain theories of crime would predict higher rates of crime and delinquency, including criminal homicide, to result (Blau & Blau 1982; Merton 1968).

In summary, drawing upon the social disorganization, anomie, and strain perspectives in criminology, the level of social capital can be linked with rates of crime and violence by altering formal or informal social control, the regulatory force of norms, and the resources required for effective goal attainment. A heuristic

model of these processes is depicted in Figure 1. Despite the diversity of the intervening mechanisms, they all imply the same general prediction: macro-level units characterized by depleted stocks of social capital should exhibit comparatively high rates of homicide.

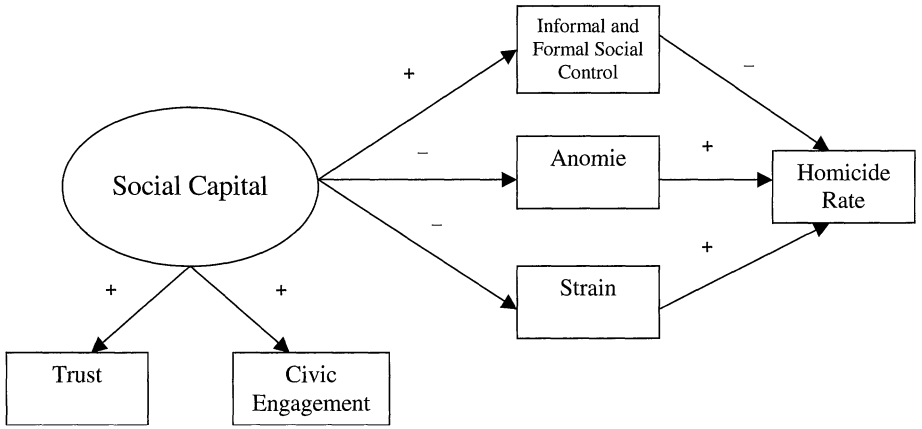
## The Present Research

Although criminological theory and recent research offer ample justification for anticipating relationships between social capital and rates of criminal violence, empirical investigation of those relationships has been quite limited, primarily because the data needed to measure social capital are not readily available. A similar problem has long plagued studies based on social disorganization theory, which typically posit mechanisms of informal social control, rooted in relational networks, as intervening between the structural sources of social disorganization and crime (Bursik & Grasmick 1993). The relevant structural variables usually can be located in published census sources, but measures of relational networks and social control are much more elusive.

One recently developed approach to deal with this limitation has been to aggregate survey data, which provide rich detail about social relationships at the individual level, to characterize populations. A small but growing number of studies within the social disorganization tradition have pursued this strategy for samples of neighborhoods in selected urban areas. The results generally indicate that relational networks and informal social control partially mediate the effects of structural variables such as economic deprivation on crime rates (see Elliott et al. 1996; Sampson & Groves 1989; Sampson et al. 1997; Simcha-Fagan & Schwartz 1986; Taylor, Gottfredson & Brower 1984).

In this paper we follow the methodological lead of recent researchers in the social disorganization tradition and use survey data originally collected for purposes of individual-level analysis to conduct macro-level inquiry. Our research extends earlier work, however, in several ways. First, we develop a structural equation model of the effects of social capital on homicide and estimate it with data for a nationally representative sample of geographic areas. Previous studies have been limited to samples of neighborhoods in a small number of cities. Second, as explained above, we depart from recent research in the social disorganization tradition by conceptualizing and measuring social trust with reference to generalized perceptions of confidence in others and not simply perceptions about one's neighbors. This approach is compatible with the large-scale macro-level units of analysis in our research, and it is consistent with the synthetic theoretical model of social capital and homicide depicted in Figure 1. A final distinctive feature of the present study is our explicit consideration of the possibility of a reciprocal relationship between social capital and the level of criminal violence. Modeling

FIGURE 1: Hypothesized Linkages between Social Capital and Homicide




the reciprocal relationship between social capital and homicide poses significant analytical challenges, but failure to do so may result in biased estimates of the effect of social capital on levels of serious criminal violence.

## Data and Methods

Our analysis combines survey data on social trust with information on electoral participation and organizational membership rates, vital statistics on homicides, and census data on structural characteristics for 99 geographic areas in the contiguous U.S. The geographic areas are the "primary sampling units" (PSUs) from the 1990 sampling frame of the General Social Survey (GSS) national samples.[6] Roughly two-thirds of the PSUs are single- or multi-county metropolitan areas, and the remaining third are non-metropolitan counties. Together, they comprise a nationally representative stratified area probability sample of the U.S. household population of adults 18 years-old and older. In addition, the distribution of the respondents within the PSUs is "self-representing" in the sense that the aggregated individual responses are representative of the PSU.[7]

### Measuring Social Capital

The literature does not contain a universally accepted strategy for modeling the various components of social capital. One reason is that debate continues over what the theoretically appropriate components are (Paxton 1999:101). Even given

agreement about relevant concepts, valid empirical indicators may be unavailable, or the available indicators may be appropriate for one level or unit of analysis but not others. As noted earlier, the indicators of interpersonal trust used in neighborhood-level research would be less appropriate in our investigation of homicide rates across counties and metropolitan areas. It is important, then, to describe in some detail the measures we have used to model variation in social capital across U.S. geographic areas, evaluate the fit of the model to the PSU-level data, and to compare our model with plausible alternatives.

Our measure of social capital combines items that tap the two theoretical dimensions of social capital outlined above: *social trust* and *civic engagement.* Consistent with previous research (Brehm & Rahn 1997; Jackman & Miller 1998; Rosenfeld & Messner 1998), we use three GSS items to assess the degree of generalized social trust in different geographic areas. These items reflect perceptions of trust or mistrust (*Trust*),[8] perceptions of being taken advantage of or of being treated fairly (*Fair*), and judgments that people are helpful or look out only for themselves (*Helpful*). The items are worded as follows:

> *Trust:* "Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?"
>
> *Fair:* "Do you think most people would try to take advantage of you if they got a chance, or would they try to be fair?"
>
> *Helpful:* "Would you say that most of the time people try to be helpful, or that they are mostly just looking out for themselves?"

Responses to these items are aggregated by PSU to reflect overall levels of collective *social trust* in these areas. We computed the percentage of respondents giving the "high social capital" response on each item (i.e., people can be trusted, try to be fair, try to be helpful) for each of the PSUs in the partial 1993 and full biennial 1994 and 1996 surveys that comprise the 1990 GSS sampling frame. When summed over the three surveys the number of respondents for the *Trust*, *Fair*, and *Helpful* items varies considerably across the sample, ranging from a high of 273 to a low of 15. The mean number of respondents per PSU is 45, and the median is 39. Although these figures suggest that on average an acceptable number of cases is available for reliable measurement, our estimations are based on data weighted to account for differences in sampling errors associated with the number of respondents within each of the PSUs.

The other theoretical component of social capital — *civic engagement* — is represented by two measures. One is based on electoral participation: the fraction of the eligible population who voted in 1992 (*voting*). Chamlin and Cochran (1995) similarly use voting data to represent the general level of involvement in the political process. Low voter turnouts are commonly viewed as signs of political disaffection and instability (see Callahan 1998). Data on electoral participation are taken from Election Data Book (1993). The second indicator of *civic engagement*

reflects participation in a national voluntary organization, the Benevolent and Protective Order of the Elks. The Elks is a social and benevolent association with well over a million members organized into approximately 2,300 local groups. Through its national foundation, the Elks makes contributions to charitable programs, offers college scholarships, and sponsors recreational and entertainment activities. Our specific indicator of involvement in this civic organization is the number of members per 100,000 resident population (*Elks membership*).[9]

We recognize that using membership in the Elks Club as an indicator of civic engagement more generally has no precedent in prior sociological research on crime. Its validity therefore is unknown. Accordingly, we estimate our structural equation models both with and without the Elks indicator and compare the results.

In the analysis presented below, we use these five measures as indicators of the latent construct *social capital*. The measurement parameters for *social capital* are presented in Appendix A. The fit indices uniformly point towards good model fit.[10] All of the specified indicators for the latent construct *social capital* are statistically significant and exhibit acceptable factor loadings.[11] The resulting factor yields high internal reliability (standardized $\alpha = .76$), which offers confidence in using the specified indicators to examine the impact of social capital on homicide rates across the areas included in our sample. We also examined an alternative measurement model of social capital informed by Paxton's (1999) recent work, but our original model proved to be superior for purposes of this research.[12]

### Measures of Homicide and Covariates

The homicide data used in the analysis are from the U.S. vital statistics compiled from death certificates at the county level (National Center for Health Statistics 1998). The data are for deaths recorded in 1993, 1994, 1995, and 1996 (the most recent year available at the time of this research), and are summed over the four years. Population estimates for 1993-96 (U.S. Department of Commerce 1998) were used to create homicide rates for the 99 geographic areas, which are expressed as homicide victims per 100,000 population (*homicide rate*). The rates for the multicounty areas are the average of the individual county rates, weighted by population.

To obtain unbiased estimates of the association between homicide rates and the indicators of social capital, other population attributes known to be correlated with homicide must be controlled. We collected data on a large number of measures of economic deprivation, population structure, and other conditions found in prior research to be enduring structural covariates of homicide rates (see Messner & Rosenfeld 1998, for a review).[13] A principal components analysis of these variables yielded two main factors. The first, which we term *deprivation*, exhibits high loadings for measures of poverty, income inequality, female-headed families, and percent black. Population size and density (both logged to reduce

skewness) and median income display high loadings on a second factor, which we label *population structure*. The corresponding factor scores representing these indicators are incorporated in our models of homicide rates.

We also include in our models separate indicators of the unemployment rate (*unemployment*), the proportion of the population age 15-29 (*age composition*), the male divorce rate (*male divorce*), and a dummy variable indicating a PSU's location in a southern state (*South*). The structural covariates included in our analysis duplicate with minor variation the final specification reported by Land et al. (1990) in their comprehensive investigation of homicide rates across U.S. states, cities, and metropolitan areas. (Appendix B presents bivariate correlations and descriptive statistics for all variables used in our analysis.)

### Estimation Procedures

Our general analytic strategy is to estimate structural equation models of the relationship between homicide rates and *social capital* controlling for other determinants of homicide. We begin by estimating a baseline equation in which homicide is regressed only on the structural covariates: *deprivation*, *population structure, age composition, male divorce, unemployment*, and *South*. This baseline model allows us to compare the results obtained using PSUs as units of analysis with prior research based on other levels of geography (states, SMSAs, cities). We then estimate a recursive model that adds to this baseline model our theoretical variable of interest, *social capital*. Finally, as a test of the robustness of our results for the effect of social capital on homicide, we estimate a non-recursive model in which we examine possible reciprocal effects between social capital and homicide.

All models are estimated with LISREL 8.14 using sample covariances as input and a maximum likelihood solution (Jöreskog & Sörbom 1993). Given the variability in sampling error associated with the different number of GSS respondents across the PSUs, we weight the data by the square root of the number of respondents in each of the PSUs from the 1993 (partial), 1994, and 1996 surveys who were asked the *Trust*, *Fair*, and *Helpful* items. All results pertaining to the measurement model of social capital and the structural equation models are based on the weighted data (unweighted analyses produce substantively identical results).

## Results

We begin our presentation of research findings with the results from estimating the baseline model derived from prior research on the structural covariates of homicide.

Table 1 displays the effects on homicide rates of indicators shown in previous studies to be correlated with homicide. The results of this baseline model, shown as Model 1 in the table, mirror those from prior research (see Land et al. 1990).

TABLE 1: Maximum Likelihood Unstandardized Parameter Estimates of the Influence of Social Capital and Other Determinants on Homicide Rates

| Explanatory Variables | Model 1 | Model 2 |
|---|---|---|
| Social capital | — | -.219** |
| | | (.104) |
| Population structure | 1.95** | 1.77** |
| | (.463) | (.462) |
| Deprivation | 3.72** | 3.29** |
| | (.619) | (.637) |
| Age composition | -.108 | -.134 |
| | (.092) | (.091) |
| Male divorce | .446* | .462* |
| | (.249) | (.245) |
| Unemployment | -.133 | -.040 |
| | (.386) | (.381) |
| South | 2.01** | .619 |
| | (.951) | (1.11) |
| Adjusted $R^2$ | .631 | .661 |
| (N = 99) | | |

Note: Model 1 is saturated. Model 2: $\chi^2 = 62.16$ ($p < .001$), $\chi^2/df = 2.00$, RMSEA = .101, GFI = .911, CFI = .936.

* Coefficient 1.5 times its standard error. Standard errors in parentheses.

** Coefficient 2.0 times its standard error.

— indicates parameter not estimated.

We find significant effects on the homicide rates of the 99 metropolitan areas and nonmetropolitan counties for the deprivation, population structure, divorce, and Southern location indicators. No significant relationship with homicide is observed for the proportion of the population between 15 and 29 years-old or the unemployment rate. The model accounts for 63% of the variance in homicide rates across these areas. The explanatory power of our baseline model and the general pattern of the parameter estimates are very similar to those reported by Land et al. (1990) for cities, SMSAs, and states. These results lend additional confidence to the use of the GSS PSUs as our units of analysis.

In Model 2 of Table 1 we address directly the major empirical question under consideration in our analysis, whether variation in levels of social capital contributes to macro-level variation in homicide rates, net of the effects of well-

established structural covariates of homicide. To address this question we add to our baseline model the latent variable *social capital.*

The fit indices for Model 2 point towards good model fit and inspection of the residuals and modification indices reveals no significant points of ill-fit in the model. With respect to our major research question, the results shown in Model 2 indicate that social capital exerts a significant effect on homicide rates, net of the other predictors ($\beta$ = -.219). Adding social capital to the homicide equation significantly increases the variance explained in homicide rates ($F$ for $R^2$ change is 8.67, $p < .05$). The nature of this effect is consistent with theoretical expectations: geographic areas with higher levels of social capital exhibit lower homicide rates. Moreover, the magnitude of this relationship is not trivial. Holding all other explanatory variables at their sample means, the predicted homicide rate in areas where the level of social capital is one standard deviation above the sample mean is 54% lower than in areas where the level of social capital is one standard deviation below the mean (4.8 vs. 10.5 homicides per 100,000 population, respectively).

Two additional observations should be made of the results in Table 1. Social capital accounts for little of the sizable effect on homicide of economic deprivation, but for much of the effect of Southern regional location. Previous work indicates that measures of deprivation yield strong effects on homicide rates (Land et al. 1990; Parker & McCall 1997), and there is scant but suggestive evidence that levels of deprivation are inversely related to the degree of social trust (Kawachi et al. 1997). Also, Sampson et al. (1997) find that their measure of "collective efficacy," which incorporates items reflecting neighborhood trust, mediates the effects on violent victimization of neighborhood economic disadvantage. We accordingly anticipated that the effect of deprivation on homicide rates would be significantly reduced when levels of social capital are controlled. However, comparing Models 1 and 2 shows that our measure of social capital helps to interpret only a small portion of the effect on homicide of deprivation (12%). By contrast, more than two-thirds (69%) of the total effect on homicide rates of Southern location is a function of lower levels of social capital in the South compared to other regions.[14]

What is it about the South that depresses levels of civic engagement and social trust, thereby elevating rates of homicide?[15] The existing literature emphasizes the role of distinctively "violent" cultural patterns or economic disadvantage in producing high rates of homicide in the South (Corzine, Huff-Corzine & Whitt 1998; Hawley & Messner 1989). Criminologists have devoted less attention to other cultural and social conditions such as historic hostility to government (including the criminal justice system), an ethic of extreme individualism, self reliance, "anti-institutionalism" — as well deeply rooted racial stratification — that may contribute to violence by impeding the development of social capital in southern communities (Cash 1941; Reed 1972, 1993). Investigation of these and related influences on social capital would seem to offer a promising point of departure for future research on regional differences in homicide.

Finally, it is important to address a potential criticism of our main model (Model 2, Table 1). Previous research indicates that high crime rates promote fear (Skogan 1986, 1990), stimulate out-migration (Liska & Bellair 1995), and constrain social interaction (Liska & Warner 1991). These results raise the possibility of reciprocal causation in the relationship between homicide and social capital. In other words, in addition to any negative effects of social capital on homicide, high homicide rates might undermine social trust and discourage civic engagement in a population, thereby diminishing the stock of social capital. Sampson and Raudenbush (1999) observe this type of reciprocal causal relationship in their analysis of collective efficacy and criminal violence (homicide and robbery) at the neighborhood-level. High levels of collective efficacy inhibit violent crime, but high rates of criminal violence also diminish collective efficacy. If social capital and homicide rates exhibit similar reciprocal relationships, our estimates based on a recursive model might be biased.

A common approach to the estimation of simultaneous causal relationships is to introduce instrumental variables into the analysis. An instrumental variable is an exogenous variable that is directly related to one of the endogenous variables and unrelated or only indirectly related to the other. It often is a difficult challenge to locate theoretically relevant instrumental variables needed to estimate non-recursive structural models. However, as Liska and Warner (1991:1456) remark on the selection of instruments, "in many cases reasonable assumptions can be made that are consistent with both theory and research."

In the present analysis, we use as instruments for the *social capital* equation the percentage of the adult population who read the newspaper daily (*daily news readership*) and the percentage foreign born (*foreign born*).[16] We assume that these variables directly affect levels of social capital, while influencing homicide only indirectly through their effect on social capital. Recent theoretical discussions have emphasized the importance of newspaper readership in generating community participation, thereby contributing to high levels of social capital (Portes 1998:18). Similarly, in classic social disorganization theory a large fraction of community residents who are foreign born is hypothesized to impede the solidarity, consensus, and communication needed to engender high levels of social trust and civic participation (Kornhauser 1978:64-65, 113-114; Shaw & McKay 1942; Suttles 1968). Both of these variables are likely to affect homicide rates indirectly through their effects on social capital, but we assume that they do not exert a direct effect on homicide. This assumption is supported in our analysis by the significant association between these measures and our indicator of social capital, and their overall weak partial correlation with homicide rates.[17]

For our homicide equation, we follow the lead of previous researchers and use as an instrument one of the structural determinants included in our research, *population structure* (see Liska & Warner 1991). Population structure (i.e., population size and density) is a key dimension of urbanization theories of crime

(e.g., Wirth 1938) and consistently has been shown to be an important determinant of macro-level crime rates, including homicide (Land et al. 1990; Larson 1984:116-43). Existing theory offers little insight into the precise nature of the effect of population structure on levels of social trust and civic engagement. A common interpretation, however, is that the effect is largely indirect. Large and dense populations promote distrust and withdrawal from the community primarily because of the higher rates of predatory and criminal behavior that tend to accompany these features of urban life (see Laub 1983). Consistent with that interpretation, the bivariate association between *population structure* and *social capital* in our data is weak and non-significant ($r$ = -.13). The partial correlation between *population structure* and *social capital* controlling for homicide is also nonsignificant ($r$ =-.10).

Table 2 presents unstandardized regression coefficients and model fit indices from a simultaneous equation model in which social capital and homicide are allowed to influence one another. Figure 2 shows a path diagram that summarizes these results and includes the standardized parameters for significant predictors. As noted above, we use population structure, daily news readership, and percentage foreign born as instruments to identify the reciprocal causal relationship between social capital and homicide. Table 2 shows that levels of social capital are significantly lower in geographic areas located in the South and those in which a larger percentage of residents are foreign born, and are higher where daily news readership is more prevalent. Levels of social capital are not significantly affected by resource deprivation, age structure, the male divorce rate, or the unemployment rate. The model explains almost three-quarters of the variation in levels of social capital across a representative sample of geographic areas in the U.S.[18]

Regarding the reciprocal relationship between social capital and homicide, the effect of homicide rates on levels of social capital is in the expected (inverse) direction, but is weak and not statistically significant once the effect of social capital on homicide is controlled.[19] In contrast, social capital exerts a significant inverse effect on homicide, controlling for the other determinants of homicide and the effect of homicide on social capital. Comparing the homicide equations in Tables 1 and 2, we observe a 33% reduction in the magnitude of the coefficient for social capital (unstandardized coefficients = -.219 and -.147, respectively), however the effect remains statistically significant and relatively strong (see Figure 2; $\beta$ = -.186).

Overall, the findings presented in Table 2 and Figure 2 suggest that the inverse covariation between homicide and social capital arises primarily through the effect of social capital on homicide. As with all simultaneous equation models based on cross-sectional data, these findings are dependent on the identification assumptions imposed (Cramer 1980; Hayduk 1987; James & Singh 1978). We evaluated the robustness of our findings in two ways (Liska & Reed 1985). First, we empirically strengthened the identification of our nonrecursive model by reestimating it after trimming all nonsignificant effects (i.e., removing age composition and unemployment from both equations, South from the homicide equation, and

TABLE 2: Maximum Likelihood Unstandardized Parameter Estimates of Simultaneous Equation Model of Social Capital and Homicide

| Explanatory Variables | Homicide | Social Capital |
|---|---|---|
| Homicide | — | -.170 |
| | | (.194) |
| Social capital | -.147* | — |
| | (.096) | |
| Population structure | 1.84** | — |
| | (.447) | |
| Deprivation | 3.39** | -1.03 |
| | (.642) | (1.31) |
| Age composition | -.128 | -.150 |
| | (.090) | (.155) |
| Male divorce | .463* | .619 |
| | (.242) | (.439) |
| Unemployment | -.061 | .406 |
| | (.377) | (.523) |
| South | .965 | -6.54** |
| | (1.12) | (1.80) |
| Daily News readership | — | .227** |
| | | (.055) |
| Foreign born | — | -.236** |
| | | (.102) |
| Adjusted $R^2$ | .662 | .734 |
| (N = 99) | | |

*Note:* $\chi^2 = 92.83$ ($p < .001$), $\chi^2/df = 2.26$, RMSEA= .114, GFI=.891, CFI=.905.

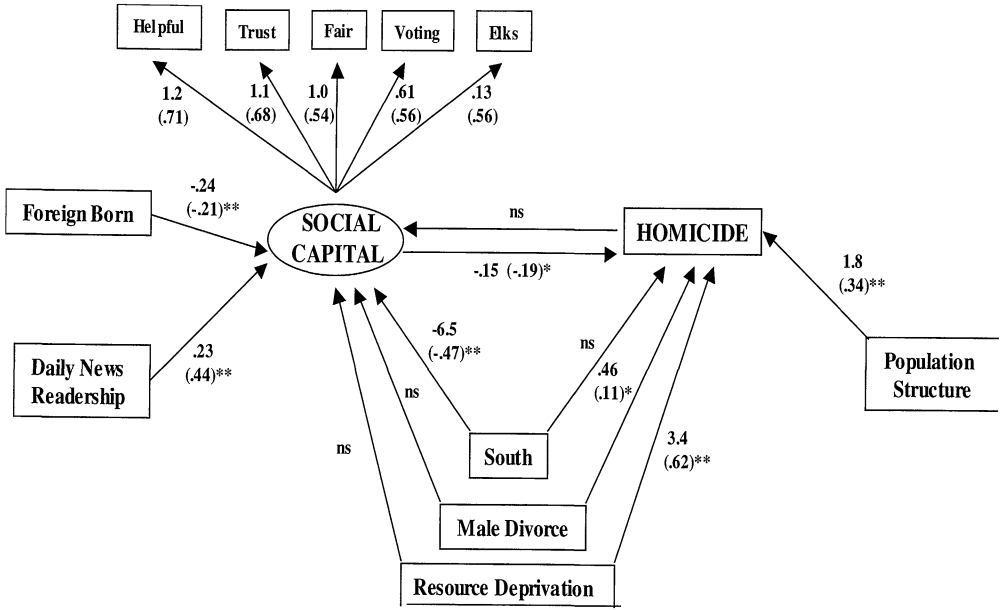
* Coefficient 1.5 times its standard error. Standard errors in parentheses.

** Coefficient 2.0 times its standard error.

— indicates parameter not estimated.

deprivation and male divorce from the social capital equation). The resulting model (not shown) reveals a pattern very similar to that shown in Table 2. The coefficient for the effect of social capital on homicide remains statistically significant and is about 26% larger ($\beta = -.185$) than shown in Table 2. The coefficient for the effect of homicide on social capital also increases in magnitude but, consistent with the results shown in Table 2, is not statistically significant. Second, we re-estimated the model using two-stage least squares, a limited information estimation technique that makes different identification assumptions in estimating reciprocal relationships. The results obtained using this procedure do not differ appreciably from those presented in Table 2. This consistency across different model

FIGURE 2: Structural Equation Model of the Reciprocal Relationship between Social Capital and Homicide Rates (N = 99)




*Note:* Standardized parameters in parentheses. Social Capital is a latent construct measured by the indicators helpful, trust, fair, Elks membership and voting rates, respectively. For clarity of presentation, the nonsignificant paths to social capital and homicide from divorce, age composition, and unemployment are not shown; correlations between exogenous variables also are omitted.

**Coefficient 2.0 times its standard error.
*Coefficient 1.5 times its standard error.
"ns" indicates a nonsignificant coefficient.

specifications and statistical methods adds confidence to the findings presented here. Nevertheless, definitive conclusions about possible reciprocal effects must await investigations that incorporate a broader array of instruments for both social capital and homicide.[20]

Finally, given the uncertain validity of *Elks membership* as an indicator of the general prevalence of civic engagement, we reestimated model 2 of Table 1 and the reciprocal effects model (Table 2) after removing the Elks membership variable. Doing so leaves a measure of social capital consisting of four indicators (*Trust*, *Fair*, and *Helpful* as indicators of the social trust component and *voting* as the indicator of the civic engagement component). The overall pattern of results is unchanged. The unstandardized parameter estimates, validity and reliability coefficients for the four indicators remaining in the measurement model are nearly identical to the estimates obtained with the Elks variable included. The effect of social capital on homicide is somewhat smaller in magnitude with the Elks variable removed but remains statistically significant, net of the covariates. We continue to observe a substantial attenuation of the effect on homicide of southern regional location, and in the reciprocal equation model the effect of social capital on homicide, although diminished somewhat, remains statistically significant when *Elks membership* is removed. The effect of homicide on social capital is also weakened and is not statistically significant, as was the case when the Elks indicator was included in the model. The finding that the magnitude of the parameter estimates for the latent construct of social capital increases when the Elks indicator is included in the models lends support to its validity as an indicator of more general civic engagement. Nevertheless, our results clearly do not depend on this specific measure of organizational membership. With or without *Elks membership* in the analysis, our substantive conclusions remain the same.

## Summary and Conclusions

Our intention in this article has been to assess the relationship between social capital and homicide rates for a nationally representative sample of geographic areas. We operationally defined the concept of social capital with measures of generalized social trust, derived from aggregated survey data, and civic engagement, based on voter turnout and organizational membership data. Our resulting measurement model of social capital achieved an acceptable level of fit, and we found that social capital is in fact related to homicide rates, controlling for a set of well-established covariates. Contrary to expectations based on recent neighborhood-level research, we found little evidence that social capital mediates the influence on homicide of an area's level of economic deprivation. This discrepancy may reflect different measures, model specification, or units of analysis. We observed a sizable mediating effect of social capital for Southern regional location, another unexpected result given the focus of prior research on subcultural and economic sources of high

homicide rates in the South. Finally, in a nonrecursive model of the relationship between social capital and homicide we found that the effect of social capital on homicide withstands statistical adjustment for the reciprocal effect of homicide on social capital. The latter effect, in turn, is in the expected direction but is not statistically significant.

The results of this investigation demonstrate the utility of the concept of social capital, and of the specific operationalization of social capital we employ, for explaining macro-level variation in criminal violence. Where levels of generalized social trust are high and civic engagement is widespread, homicide rates are low, regardless of the level of deprivation, the density of the population, and other sociodemographic influences. A more complete explanation of the interconnections between social capital and homicide, however, will require further empirical and theoretical work.

With respect to empirical issues, it would be useful to incorporate additional indicators of both social trust and civic engagement. We have concentrated in the present analysis on generalized social trust given our interest in examining a nationally representative sample of macro-social units and our consequent reliance on items in the General Social Survey. However, generalized trust may operate in tandem with the more localized, neighborhood-level of trust that has been examined in previous research. Joining both kinds of measures in analytic models would likely enhance our capacity to explain variation in homicide rates across different types of communities, although the logistical difficulties in collecting such data are formidable.

The measurement of civic engagement also could be elaborated. We estimated the effects of this concept with a fairly conventional measure of political participation — voting levels — and a novel measure of organizational involvement — membership rates for the Elks organization. Our basic findings remain the same regardless of whether the Elks indicator was included in the models. Confidence in our interpretations would be even further strengthened if the findings were replicated with a fuller set of indicators of civic engagement, especially additional measures of social participation such as charitable contributions, volunteer activities, and membership in different types of voluntary associations.

Collection of additional indicators of civic engagement might be particularly useful for further examination of possible reciprocal causal relationships between homicide and different dimensions of social capital. Perhaps high levels of crime discourage some types of civic participation but stimulate others. For example, high homicide rates might lead to the formation of anticrime and victim-assistance groups, which could strengthen the organizational infrastructure of a community. Similarly, it would be instructive to explore reciprocal relationships between social capital and other criminal offenses. Less serious but more frequent offenses such as burglary may have more pronounced effects on levels of social capital than do

homicide rates, given the prominent role of perceived risk of victimization as a determinant of fear of crime (Warr & Stafford 1983).

With respect to theoretical concerns, a crucial challenge for future research is to explicate more clearly the mechanisms through which social capital influences levels of homicide. We have proposed that social capital can be linked with criminal violence by drawing on social disorganization, anomie, and strain theory. Each of these theories offers a plausible rationale for anticipating a relationship between social capital and homicide, but each invokes somewhat different intervening processes. Social disorganization theory emphasizes capabilities for collective mobilization and for informal and formal social control; anomie theory points to the strength of the normative order; and strain theory stresses obstacles to the realization of goals. Some or all of the specified theoretical mechanisms may connect social capital to homicide rates, but our research does not provide a basis for determining which are most important.

At present, criminological theory is too primitive to offer much guidance as to precisely how social capital relates to the specific intervening mechanisms that presumably lead to crime. Do the two constituent elements of social capital — trust and civic engagement — exert comparable effects on the hypothesized intervening variables? Are particular aspects of social capital more relevant for certain intervening processes (e.g., the breakdown in social norms) than for others (e.g., goal frustration)? Given the nature of the linkages between social capital and intervening causal processes, is social capital more relevant to the explanation of selected forms of homicide (e.g., stranger homicide) in comparison with other forms (e.g., intimate partner homicide)? A full understanding of the processes linking social capital with crime requires that tentative answers to such questions be posed and tested with the requisite data. Toward that end, our results offer compelling evidence that levels of social capital are related to homicide rates. Further efforts to clarify and explain that relationship would thus seem to be amply justified.

## Notes

1. See Lederman, Loayza, and Menendez (1999) for a cross-national investigation of the relationship between homicide and elements of social capital.

2. Other key contributors to contemporary conceptions of social capital include Pierre Bourdieu, Jane Jacobs, and Glenn Loury (Woolcock 1998:155). See Portes (1998) for a discussion of the similarity between social capital and classic sociological concepts, and the potentially negative consequences of the processes associated with social capital.

3. Paxton (1999) provides an excellent discussion of the meaning and measurement of trust and other elements of social capital at different levels of analysis, from the local community to the nation state.

4. Our arguments imply that both "localized" trust and "global" trust are related to crime, the former primarily through informal social control, and the latter through public or

formal social control. Because of data limitations, only the effects of generalized trust can be assessed in the analyses below.

5. Hagan, Merkens, and Boehnke (1995) incorporate the concept of social capital in the social disorganization tradition through subcultural dynamics. They suggest that informal social control processes accompanying strong social organization constitute important sources of social capital. These forms of capital reduce the likelihood of juvenile delinquency because they "can shield and protect youth from drifting into subterranean traditions of deviance and disorder during important transitional phases" (1035). In other words, social capital better enables communities to prevent youths from embracing subcultural values that are conducive to delinquency, including violent behavior (see also Hagan et al. 1998).

6. There are 100 PSUs in the 1990 GSS sampling frame. Because our analysis is restricted to the contiguous U.S., Anchorage, Alaska is omitted. The GSS data are from Davis and Smith (1998).

7. While using these units enables us to construct measures of collective social trust, one disadvantage is the internal heterogeneity of the sampling units, which is likely to deflate correlations between units. However, the results presented below for the bivariate and multivariate relationships between homicide rates and the structural covariates are comparable to those reported in prior macro-level homicide research (e.g., Land et al. 1990). The internal heterogeneity of the nationally representative sample of PSUs, therefore, does not appear to pose a significant threat to the validity of our findings.

8. A recent experimental assessment concludes that the GSS item may be a better measure of "trustworthiness" than trust and that when aggregated to the macro level, "presumably a measure of trustworthiness is as good (or better) a measure of social capital as a measure of trust" (Glaeser et al. 2000:833).

9. Membership data for the Elks originally were organized by zip code. Zip codes were aggregated within PSUs to allow for the construction of membership rates. The Elks retain membership data only for one year, discarding information for previous years. The existing membership file at the time of our request refers to 1997. Technically, this indicator of the latent construct of civic engagement post-dates the measurement of the dependent variable. This should not create serious bias in the estimation of the effect on homicide of social capital because county-level homicide rates tend to be reasonably stable over the short term. As explained below, our measure of homicide refers to a multiyear period (1993-96) to enhance stability; the inter-year correlations of the rates are uniformly high ($\alpha = .96$), and the lowest inter-item correlation between annual homicide rates for the period is .87. It is likely that homicide data for 1997 would be highly correlated with the rates for the nearby multi-year period.

10. Following the practice of a number of analysts (e.g., Bollen 1989; Hayduk 1987; Jaccard and Wan 1996), in addition to reporting $\chi^2$ we evaluate one fit index from each of the three broad classes of fit indices provided in LISREL: 1) the goodness-of-fit index (GFI), with scores of .90 or greater indicative of good model fit; 2) the root mean square error of approximation (RMSEA) for which values below .08 indicate good model fit; and 3) the comparative fit index (CFI), on which values above .90 are indicative of good model fit. The parameter estimates for the initial model are available on request.

We also estimated a two-factor model with the items *fair*, *trust*, and *helpful* specified as indicators of *social trust* and the items *voting* and *Elks membership* specified as indicators of *civic engagement.* This model did not result in a significant improvement over the single factor model shown in Appendix A. Moreover, the correlation between the latent constructs obtained from the two factor solution — *social trust* and *civic engagement* — was sufficiently high ($r = .90$) to warrant concern about multicollinearity in using these factors in multivariate analyses.

11. The model shown includes error correlations between the items *fairness* and *trust*, and *fairness* and *helpful.* This model results in a significant improvement in fit over a model with no error correlations.

12. As indicated earlier, Paxton (1999) presents a different measurement model of social capital for the U.S. Paxton's model incorporates four sets of items from the GSS: the three-item indicator of social trust that we use in our analysis, a four-item indicator of confidence in social institutions, measures of time spent with friends and neighbors, and the average number of organizations to which the respondent belongs. To determine whether to include these additional items in our model of social capital, we examined their interrelationships with one another, with the five items in our model, and with the PSU homicide rates. We aggregated the GSS items from Paxton's model to the PSU level and then performed a nonorthogonal principal components analysis of the measures from both of the models. The analysis produced a four-factor solution, with one of the factors exhibiting high loadings for the five indicators in our model of social capital, a second factor showing high loadings for organizational membership and visiting friends and neighbors, a third factor showing high loadings for the measures of confidence in governmental and educational institutions, and the fourth factor showing a high loading for the single item representing confidence in religion. The correlations between the factors are uniformly low, and only the factor representing the indicators in our model of social capital is significantly associated with variation in the PSU homicide rates. We conclude from this analysis that, in spite of their theoretical plausibility and possible utility for other purposes, the additional indicators in Paxton's model of social capital do not increase the ability of our model to explain variation in homicide rates across U.S. geographic areas, and therefore we do not include these indicators in our analysis. The specific results of our assessment of Paxton's model are available on request from the authors.

13. The specific measures are the percentage of families below poverty, median family income, percentage of persons 16 and older who are unemployed, the Gini index of income inequality, percentage of the population that is black, percentage of families headed by a female with children under the age of 18, percentage of males 14 and older who are divorced, the percentage of the population ages 15 to 29, population size, population density (the number of persons per square mile), and location of the PSU in a Southern state. All of the control variables are from the 1990 census and are measured originally at the county level; indicators for the multicounty PSUs are the county averages, weighted by 1990 population.

14. The mediating effects of social capital are obtained by dividing the difference between corresponding coefficients in the two models by the coefficient in Model 1. For example, social capital accounts for .116 of the effect of deprivation on homicide ([3.72 – 3.29] / 3.72).

## APPENDIX A: Measurement Parameter Estimates for Social Capital

| Latent Construct | Observed Variable | Metric Slope | Validity Coefficient |
|---|---|---|---|
| Social Capital | Fairness[a] | 1.00f | .471 |
| | Trust | 1.43** | .764 |
| | | (.378) | |
| | Helpful | 1.45** | .780 |
| | | (.383) | |
| | Voting rate | .581** | .481 |
| | | (.188) | |
| | Elks membership | .113** | .440 |
| | | (.038) | |
| (N = 99) | | | |

*Notes:* f = fixed coefficient. Standard errors in parentheses.

[a] Marker variable for latent construct.

** Coefficient 2.0 times its standard error.

Fit indices: $\chi^2 = .663$, 3 d.f., (p = .882), RMSEA = .00, GFI = .99, CFI = 1.00. Model includes error correlations between the indicators of *fairness* and *trust* and *fairness* and *helpful*.

15. Using a very similar measure of social capital, Alesina and Ferrara (2000) also find that levels of social capital are lower in the South.

16. Percentage *foreign born* is from the 1990 U.S. Census. Our measure of *daily news readership* is derived from a GSS item that asks how often respondents read the newspaper. We aggregated responses of "daily" across the three surveys in the 1990 sampling fame to compute the percentage of respondents in each PSU who read the newspaper daily. The mean number of respondents to this question per PSU is 68, and the median is 44.

17. Controlling for social capital, the correlations between homicide and *daily news readership* and *foreign born* are -.03 and .06, respectively.

18. Although the exogenous variables included in our analysis do not appear to be so highly correlated as to prevent estimation of their unique effects, we evaluated the regression results shown in Tables 1 and 2 for potential sources of multicollinearity using standard statistical procedures (e.g., Fisher & Mason 1981; Greene 1993). We found no evidence that our parameter estimates are adversely affected by multicollinearity.

## APPENDIX B: Inter-Item Correlations and Descriptive Statistics for Variables in the Analysis of Social Capital and Homicide Rates

| | Correlations | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | **Mean** | **SD** |
| (1) Homicide | — | -.60* | -.34* | -.34* | -.50* | -.31* | -.40* | .26* | .68* | -.02 | .11 | .17 | .49* | -.23* | .15 | 7.88 | 5.45 |
| (2) Social capital | | — | .47* | .76* | .78* | .48* | .44* | -.13 | -.48* | -.09 | .02 | .01 | -.66* | .53* | -.23* | ## | ## |
| (3) Fair | | | — | .67* | .67* | .24* | .22* | .02 | -.21* | .07 | -.02 | -.09 | -.22* | .40* | -.23* | 60.5 | 13.1 |
| (4) Trust | | | | — | .59* | .39* | .33* | -.01 | -.25* | .05 | -.05 | .01 | -.39* | .48* | -.08 | 34.6 | 11.5 |
| (5) Helpful | | | | | — | .37* | .37* | -.15 | -.32* | -.03 | -.01 | -.01 | -.39* | .38* | -.23* | 47.1 | 11.5 |
| (6) Voter turnout | | | | | | — | .20* | -.19* | -.18 | -.22* | -.01 | .19* | -.48* | .13 | -.34* | 57.7 | 7.45 |
| (7) Elks membership (ln) | | | | | | | — | .07 | -.53* | -.11 | .17 | -.22* | -.47* | .30* | .05 | 5.55 | 1.58 |
| (8) Population structure | | | | | | | | — | -.15 | .18 | .04 | -.58* | -.06 | .04 | .33* | .00 | 1.00 |
| (9) Deprivation | | | | | | | | | — | .01 | -.04 | .62* | .48* | -.12 | .11 | .00 | 1.00 |
| (10) Age composition | | | | | | | | | | — | -.09 | -.10 | -.04 | .02 | .08 | 23.2 | 3.61 |
| (11) Male divorce | | | | | | | | | | | — | -.05 | .03 | -.12 | .14 | 7.43 | 1.31 |
| (12) Unemployment | | | | | | | | | | | | — | -.05 | .01 | .01 | 6.34 | 1.72 |
| (13) South | | | | | | | | | | | | | — | -.15 | -.04 | .39 | .49 |
| (14) Daily news readership | | | | | | | | | | | | | | — | .01 | 46.3 | 13.2 |
| (15) Foreign born | | | | | | | | | | | | | | | — | 4.37 | 5.97 |

* $p \leq .05$, two-tailed test. N=99.
## indicates latent variable.

19. We also estimated the model shown for social capital in Table 2 as a simple recursive equation. The results (not shown) revealed a statistically significant effect of homicide on social capital ($\beta$ = -.322). The effect sizes for the other determinants of social capital were similar to those shown in Table 2.

20. We explored the possibility of re-estimating our simultaneous equation with different identifying instruments. We considered the sex-ratio, a measure of residential mobility, and police size as potential instruments for the homicide equation, and the percentage of GSS respondents who are confident in the Supreme Court and the percentage who rank high income as the most important characteristic of a job as instruments in the social capital equation. Although these variables can be justified as instruments on theoretical grounds, the expected empirical associations with homicide and social capital are weak, indicating that they are not useful as instruments for estimating the nonrecursive model shown in Table 2.

## References

Alesina, Alberto, and Eliana La Ferrara. 2000. "Participation in Heterogeneous Communities." *Quarterly Journal of Economics* 115:847-904.

Blau, Judith R., and Peter M. Blau. 1982. "The Cost of Inequality: Metropolitan Structure and Violent Crime." *American Sociological Review* 47:114-29.

Bollen, Kenneth. 1989. *Structural Equations with Latent Variables.* Wiley.

Brehm, Johnk and Wendy Rahn. 1997. "Individual-Level Evidence for the Causes and Consequences of Social Capital." *American Journal of Political Science* 41:999-1023.

Bursik, Robert J., Jr., and Harold G. Grasmick. 1993. *Neighborhoods and Crime: The Dimensions of Effective Community Control.* Lexington Books.

Callahan, David. 1998. "Ballot Blocks: What Gets the Poor to the Polls?" *American Prospect* (July-August):68-75.

Cash, W.J. 1941. *The Mind of the South.* Knopf.

Chamlin, Mitchell B., and John K. Cochran. 1995. "Assessing Messner and Rosenfeld's Institutional Anomie Theory: A Partial Test." *Criminology* 33:411-29.

Coleman, James S. 1986. "Social Theory, Social Research, and a Theory of Action." *American Journal of Sociology* 91:1309-35.

———. 1990. *Foundations of Social Theory.* Harvard University Press.

Corzine, Jay, Lin Huff-Corzine, and Hugh P. Whitt. 1998. "Cultural and Subcultural Theories of Homicide." Pp. 42-57 in *Homicide: A Sourcebook of Social Research*, edited by M.D. Smith and M.A. Zahn. Sage.

Cramer, James C. 1980. "Fertility and Female Employment: Problems of Causal Direction." *American Sociological Review* 45:167-90.

Davis, James A., and Tom W. Smith. 1998. *GSS (General Social Survey).* NORC ed. Chicago: NORC. Distributed by MicroCase Corporation, Bellevue, Wash.

*Election Data Book - 1992.* 1993. Compiled/Edited by Kimball Brace and the staff of Election Data Services. Kimball Brace Bernan Press.

Elliott, Delbert, William J. Wilson, David Huizinga, Robert J. Sampson, Amanda Elliott, and Bruce Rankin. 1996. "Effects of Neighborhood Disadvantage on Adolescent Development." *Journal of Research in Crime and Delinquency* 33:389-426.

Fisher, Joseph C., and Robert L. Mason. 1981. "The Analysis of Multicollinear Data in Criminology." Pp. 99-125 in *Methods in Quantitative Criminology*, edited by J.A. Fox. Academic Press.

Fukuyama, Francis. 1995. *Trust: The Social Virtues and the Creation of Prosperity*. Free Press.

Glaeser, Edward L., David I. Laibson, Jose A. Scheinkman, and Christine L. Soutter. 2000. "Measuring Trust." *Quarterly Journal of Economics* 115:811-46.

Greene, William H. 1993. *Econometric Analysis*. Second Edition. Macmillan.

Hagan, John, Hans Merkens, and Klaus Boehnke. 1995. "Delinquency and Disdain: Social Capital and the Control of Right-Wing Extremism among East and West Berlin Youth." *American Journal of Sociology* 100:1028-52.

Hagan, John, Gerd Hefler, Gariele Classen, Klaus Boehnke, and Hans Merkens. 1998. "Subterranean Sources of Subcultural Delinquency: Beyond the American Dream." *Criminology* 36:309-41.

Hawley, F. Frederick and Steven F. Messner. 1989. "The Southern Violence Construct: A Review of Arguments, Evidence, and the Normative Context." *Justice Quarterly* 6:481-511.

Hayduk, Les. 1987. *Structural Equation Modeling with LISREL: Essentials and Advances*. Johns Hopkins University Press.

Hearn, Frank. 1997. *Moral Order and Social Disorder: The American Search for Civil Society*. Aldine de Gruyter.

Jaccard, James and Choi K. Wan. 1996. *LISREL Approaches to Interaction Effects in Multiple Regression*. Sage.

Jackman, Robert W. and Ross A. Miller. 1998. "Social Capital and Politics." *Annual Review of Political Science*:47-73.

James, Lawrence R., and B. Krishna Singh. 1978. "An Introduction to the Logic, Assumptions, and Basic Analytic Procedures of Two-Stage Least Squares." *Psychological Bulletin* 85: 1104-22.

Jöreskog, Karl, and Dag Sörbom. 1993. *Lisrel 8: User's Reference Guide*. Scientific Software International.

Kawachi, Ichiro, Bruce P. Kennedy, and Kimberly Lochner. 1997. "Long Live Community: Social Capital as Public Health." *The American Prospect* (Nov.-Dec.):56-59.

Kornhauser, Ruth R. 1978. *Social Sources of Delinquency: An Appraisal of Analytic Models*. Chicago: University of Chicago Press.

LaFree, Gary. 1999. "A Summary and Review of Cross-National Comparative Studies of Homicide." Pp. 125-145 in *Homicide: A Sourcebook of Social Research*, edited by M.D. Smith and M.A. Zahn. Sage.

Land, Kenneth C., Patricia L. McCall, and Lawrence E. Cohen. 1990. "Structural Covariates of Homicides Rates: Are There any Invariances across Time and Social Space?" *American Journal of Sociology* 95:922-963.

Larson, Calvin J. 1984. *Crime, Justice, and Society*. General Hall.

Laub, John H. 1983. "Urbanism, Race, and Crime." *Journal of Research in Crime and Delinquency* (July):183-198.

Lederman, Daniel, Norman Loayza, and Ana Maria Menendez. 1999. "Violent Crime: Does Social Capital Matter?" Unpublished manuscript. Office of the Chief Economist for Latin America and the Caribbean, World Bank, Washinton, DC.

Liska, Allen E., and Paul E. Bellair. 1995. "Violent Crime Rates and Racial Composition: Convergence Over Time." *American Journal of Sociology* 101:578-610.

Liska, Allen E., and Mark Reed. 1985. "Ties to Conventional Institutions and Delinquency: Estimating Reciprocal Effects." *American Sociological Review* 50:547-60.

Liska, Allen E., and Barbara Warner. 1991. "Functions of Crime: A Paradoxical Process." *American Journal of Sociology* 96:1441-63.

Merton, Robert K. 1968. *Social Theory and Social Structure*. Free Press.

Messner, Steven F., and Richard Rosenfeld. 1998. "Social Structure and Homicide: Theory and Research." Pp. 27-41 in *Homicide: A Sourcebook of Social Research*, edited by M.D. Smith and M.A. Zahn. Sage.

National Center for Health Statistics. 1998. Centers for Disease Control and Prevention. Compressed Mortality File. (URL: http://wonder.cdc.gov)

Parker, Karen F., and Patricia L. McCall. 1997. "Adding Another Piece to the Inequality-Homicide Puzzle: The Impact of Structural Inequality on Racially-Disaggregated Homicide Rates." *Homicide Studies* 1:35-60.

Paxton, Pamela. 1999. "Is Social Capital Declining in the United States? A Multiple Indicator Assessment." *American Journal of Sociology* 105:88-127.

Portes, Alejandro. 1998. "Social Capital: Its Origins and Applications in Modern Sociology." *Annual Review of Sociology* 24:1-24.

Putnam, Robert D. 1993. *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton University Press.

———. 1995. "Bowling Alone: America's Declining Social Capital." *Journal of Democracy* 6:65-78.

Reed, John Shelton. 1972. *The Enduring South: Subcultural Persistence in Mass Society*. Lexington Books.

———. 1993. *My Tears Spoiled My Aim and Other Reflections on Southern Culture*. University of Missouri Press.

Rosenfeld, Richard, and Steven F. Messner. 1998. "Beyond the Criminal Justice System: Anomie, Institutional Vitality, and Crime in the United States." Paper presented at the meeting of the American Sociological Association, San Francisco, Calif.

Sampson, Robert J. 1997. "The Embeddedness of Child and Adolescent Development: A Community-Level Perspective on Urban Violence." Pp. 31-77 in *Violence and Childhood in the Inner City*, edited by J. McCord. Cambridge University Press.

Sampson, Robert J., and W. Byron Groves. 1989. "Community Structure and Crime: Testing Social Disorganization Theory." *American Journal of Sociology* 94:774-802.

Sampson, Robert J., and Stephen W. Raudenbush. 1999. "Systematic Social Observation of Public Spaces: A New Look at Disorder in Urban Neighborhoods." *American Journal of Sociology* 105:603-51.

Sampson, Robert J., Jeffrey D. Morenoff, and Felton Earls. 1999. "Beyond Social Capital: Spatial Dynamics of Collective Efficacy for Children." *American Sociological Review* 64:633-60.

Sampson, Robert J., Stephen W. Raudenbush, and Felton Earls. 1997. "Neighborhoods and Violent Crime: A Multilevel Study of Collective Efficacy." *Science* 277:918-24.

Shaw, Clifford R. and Henry D. McKay. 1942. *Juvenile Delinquency and Urban Areas*. University of Chicago Press.

Simcha-Fagan, Ora, and Joseph E. Schwartz. 1986. "Neighborhood and Delinquency: An Assessment of Contextual Effects." *Criminology* 24:667-703.

Skogan, Wesley G. 1986. "Fear of Crime and Neighborhood Change." Pp. 203-29 in *Communities and Crime*, edited by A.J. Reiss, Jr. and M. Tonry. University of Chicago Press.

———. 1990. *Disorder and Decline: Crime and the Spiral of Decay in American Neighborhoods*. Free Press.

Suttles, Gerald. 1968. *Social Order of the Slum*. University of Chicago Press.

Taylor, R., S. Gottfredson, and S. Brower. 1984. "Block Crime and Fear: Defensible Space, Local Social Ties, and Territorial Functioning." *Journal of Research in Crime and Delinquency* 21:303-31.

U.S. Department of Commerce, Bureau of Census. 1998. *Estimates of the Population of Counties by Age, Sex, Race, and Hispanic Origin [United States]: 1990-1996 [Computer File]*. ICPSR Version. Washington, DC: U.S. Department of Commerce, Bureau of the Census [producer], 1998. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 1998.

Warr, Mark and Mark C. Stafford. 1983. "Fear of Victimization: A Look at the Proximate Causes." *Social Forces* 61:1033-43.

Wirth, Louis. 1938. "Urbanism as a Way of Life." *American Journal of Sociology* 44:1-24.

Woolcock, Michael. 1998. "Social Capital and Economic Development: Toward a Theoretical Synthesis and Policy Framework." *Theory and Society* 27:151-208

U.S. Department of Commerce, Bureau of Census. 1998. *Estimates of the Population of Counties by Age, Sex, Race, and Hispanic Origin [United States]: 1990-1996 [Computer File]*. ICPSR Version. Washington, DC: U.S. Department of Commerce, Bureau of the Census [producer], 1998. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 1998.

Warr, Mark and Mark C. Stafford. 1983. "Fear of Victimization: A Look at the Proximate Causes." *Social Forces* 61:1033-43.

Wirth, Louis. 1938. "Urbanism as a Way of Life." *American Journal of Sociology* 44:1-24.

Woolcock, Michael. 1998. "Social Capital and Economic Development: Toward a Theoretical Synthesis and Policy Framework." *Theory and Society* 27:151-208