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Contemporary Disorganization Research: An Assessment and Further Test of the Systemic Model of Neighborhood Crime

Paul E. Bellair[1] and Christopher R. Browning[1]

Abstract

The systemic model posits that informal control reduces crime and that social networks reduce crime indirectly by stimulating informal control. The systemic literature consistently supports the informal control-crime relationship but reveals wider variation in the measurement and effects of network dimensions. Recognizing this pattern, some scholars advocate an explicit distinction between networks and informal control. We formally address that issue with analysis of the measurement structure of multiple network and informal control indicators using data collected in 300 Seattle neighborhoods. Results reveal several distinct network dimensions that are themselves distinct from informal control. Regression analysis supports the systemic model: informal control reduces crime victimization, and

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networks exhibit an indirect, negative effect through informal control. Consistent with prior research, some network measures have a positive, direct effect on crime. We conclude that a distinction between networks and informal control is essential when testing and evaluating the systemic model.

Keywords
systemic model, neighborhood crime, community networks, informal control, social disorganization

Social disorganization theory is one of the oldest and among the most well-respected sociological approaches to community crime. Contemporary theoretical development is most influenced by the systemic model of community organization, with its emphasis on family, friendship, and neighbor networks of affiliation and their capacity for generating (prosocial) informal control through the process of primary and secondary socialization. At its core (see Figure 1) the model rests on the expectation of a direct, inverse relationship between informal control and crime, and an indirect, negative effect of networks on crime through informal control (Bursik and Grasmick 1993:39; Kubrin, Stucky, and Krohn 2009:88). The most crucial and important link in the model from a scientific standpoint lies in the relationship between informal control and crime, followed in importance by the indirect effect of social networks on crime through informal control. The direct effect of networks on crime is the least important relationship implied by the systemic model, although it is significant from the standpoint of developing scientific knowledge about the sources of community crime.

Since the 1950s, the systemic model has generated a small but growing literature. A handful of studies are directed toward examining the relationship between informal control and crime, and the results of those studies offer supportive evidence that is most critical for establishing the merit of the perspective. In contrast, a substantial body of systemic research investigates the relationship between social networks and crime (reviewed below). There is a solid basis of support in that literature, yet several studies spanning more than a few decades report a *positive* relationship between networks and crime. Those studies fuel critical commentary and are perceived to raise fundamental questions about the systemic model. Given the regularity of the finding, it is valuable and important to pursue its explanation, but the positive relationship is much less damaging to the perspective than would be the case if *informal control* were consistently linked with higher crime. Moreover, network measures that are positively associated

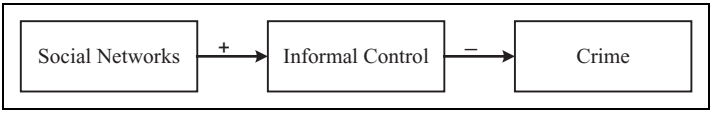

Figure 1. Casual structure of the systemic model of neighborhood crime.

with crime may nevertheless exert a negative, indirect effect on crime that is consistent with the systemic model. Research that reports a positive relationship between networks and crime typically de-emphasizes this important possibility. The focus on anomaly in the network-crime relationship has diverted attention away from the informal control-crime relationship that is at the heart of the systemic model of neighborhood crime.

Recognizing inconsistency in network-crime research and influenced by literature documenting the decline of social interaction within place (Fischer 1982; Wellman 1979), some scholars explicitly advocate a conceptual distinction between networks and informal control (i.e., see Bellair 2000; Morenoff, Sampson, and Raudenbush 2001; Sampson, Raudenbush, and Earls 1997). From this perspective, analyses utilizing network but not informal control measures do not really test the model (see Figure 1) unless it is assumed that networks and informal control are conceptually similar and hence interchangeable (i.e., that they are highly correlated). This article formally addresses whether a conceptual distinction between network and informal control measures is justified by data. We begin with a literature review that illustrates the wide variety of measures and results reported in previous network research. Next, we derive two contrasting models. The first, consistent with several decades of network-crime research, posits that networks and informal control overlap conceptually and are more similar than different. The second model draws a sharp distinction between social networks and informal control, and treats them as distinct constructs.

Analysis of survey data collected in 300 Seattle, WA, neighborhoods provides an empirical basis for rejecting the assumption that social networks and informal control are interchangeable. The confirmatory factor analysis of hierarchical data reveals that networks are comprised of several distinct dimensions, and that networks and informal control are distinct from each other. Regression analysis indicates that informal control reduces property and violent victimization, and that networks uniformly exert an indirect, negative effect on victimization through informal control. Yet, consistent with prior research, some network measures have a positive, direct effect on crime. The results therefore support key hypotheses that undergird the systemic model while underscoring the intricacy of the

network-crime relationship. They suggest, moreover, that future testing of the systemic model should carefully distinguish between networks and informal control, examine the indirect effect of networks on crime through informal control, and should continue to carefully scrutinize informal control processes in relation to crime.

Background

History

Social disorganization theory is currently viewed as a prominent explanation of the distribution of neighborhood crime. However, this has not always been the case. For decades, social disorganization research was impeded by a lack of consensus over the definition and measurement of community disorganization (Bursik 1988). Assuming that residents of high-crime neighborhoods prefer an existence free from crime, Shaw and McKay (1942) implied that "a socially disorganized community is one unable to realize its values" (Kornhauser 1978:63). Without recourse to survey data, Shaw and McKay inferred the existence, components, and consequences of disorganization from observed relationships between community structural characteristics and official delinquency. Although initially embraced, this strategy created substantial confusion and ultimately was rejected. By the 1960s, many criminologists had abandoned the perspective.

The 1980s marked a turning point for social disorganization theory. Borrowing from urban ecology and the systemic model, disorganization theorists increasingly defined community organization "as a complex system of friendship and kinship networks and formal and informal associational ties rooted in family life and ongoing socialization processes" (Kasarda and Janowitz 1974:329). Accordingly, socially organized communities were conceived as cohesive places where families and neighbors know, interact with, and trust one another; where residents are able to identify strangers; and where residents volunteer and take action for the mutual benefit of the community. The logic of the model is well illustrated by Freudenburg (1986:31) who notes that "People who know one another often work out inter-personal agreements for achieving desired goals ... They are made possible by the fact that the people involved are personally acquainted ... Persons who remain strangers will be systematically less likely to be willing or able to participate in such mutual agreements." In this view, when networks are strong, the capacity of local resident's to engage in informal control for the mutual benefit of neighbors, such as intervention to prevent a crime or conscientious surveillance of space, is strengthened. Table 1 summarizes a selection of

Table 1. Community Organization Measures Used in Selected Prior Research.

Study	*Network and informal control measures*
Maccoby et. al. 1958	Know neighbors by name, like the neighborhood, share similar interests, and willingness to intervene in hypothetical and actual disturbances.
Warren 1969	Interaction on a weekly basis, and perceived consensus.
Hackler et. al 1974	Willingness to intervene in hypothetical disturbance
Kapsis 1976, 1978	Contact with settlement house, know neighbors by name, and friends in the neighborhood.
Greenberg et. al. 1982	Informal surveillance, movement governing rules, and willingness to intervene in hypothetical and actual disturbances.
Simcha-Fagan and Schwartz 1986	criminal subculture scale
Sampson and Groves 1989	Organizational participation, unsupervised teenage peer groups, and friends in neighborhood.
Sampson et. al. 1997	Perceived cohesion and trust combined with willingness to intervene in hypothetical disturbances (collective efficacy).
Bellair 1997	Frequency of interaction with neighbors.
Warner and Rountree 1997; Rountree and Warner 1999	Sharing tools, having dinner, and solving problems with neighbors.
Bellair 2000	Sharing tools, having dinner, and solving problems with neighbors, watch neighbor's property, and neighbors' watch property.
Markowitz et. al. 2001	Perceived cohesion and trust
Morenoff et. al. 2001	Collective efficacy, voluntary associations, organizations, kin/friendship ties.
Browning et. al. 2004	Collective efficacy, advice-giving/favor exchange/ interaction among neighbors.

previous systemic crime research, illustrating wide ranging and eclectic measurement of social networks and informal control.

Social networks and crime

The systemic model rests on the expectation of an indirect relationship between social networks and crime that operates through informal control.

Several studies find a direct relationship between network indicators and crime and are typically interpreted as providing a firm basis of support for the model even though informal control is not measured. The network indicators most consistently associated with lower crime reflect the size of local family and friendship networks (Kapsis 1976, 1978; Sampson and Groves 1989; Simcha-Fagan and Schwartz 1986), organizational participation (Kapsis 1976, 1978; Sampson and Groves 1989; Simcha-Fagan and Schwartz 1986; Taylor, Gottfredson, and Brower 1984), and frequency of interaction among neighbors (Bellair 1997).

The systemic perspective is undermined, however, by research demonstrating the persistence of crime in communities characterized by relatively dense networks and strong neighborhood attachments (Bursik and Grasmick 1993; Horowitz 1983; Suttles 1968; Whyte 1937). Indeed, studies on the impact of dense or prevalent neighborhood social networks have not uniformly demonstrated consistent negative effects on crime rates (Clinard and Abbott 1976; Greenberg, Rohe, and Williams 1982; Macoby, Johnson, and Church 1958; Merry 1981; Warner and Rountree 1997) nor have networks consistently mediated a substantial proportion of the impact on structural characteristics like poverty on crime (Warner and Rountree 1997). These findings point to a shortcoming of the systemic model—the failure to recognize that networks have a complex relationship with informal control and crime.

Two prominent views have evolved to account for the anomaly. First, Wilson (1996) adopted an explicitly ecological and structural approach to the cultural transmission of criminal tendencies. In Wilson's view, macro-economic shifts of the 1970s combined with historic discrimination resulted in the emergence of extremely disadvantaged neighborhoods characterized by high levels of poverty and joblessness. Following a period of economic decline and population loss, these neighborhoods were left with relatively stable populations characterized by few skills, limited interaction with mainstream sources of influence, and restricted mobility.

Wilson argues that these communities exhibit social integration but also diminished institutional viability and limited informal social control. In such contexts, strong network ties are less likely to yield the benefits hypothesized in the systemic approach. Strong networks in disadvantaged and socially isolated communities that lack informal social control capacity may potentially *facilitate* the spread of problem behavior. The most vulnerable neighborhoods, he argues, are those in which "not only are children at risk because of the lack of informal social controls, they are also disadvantaged because the social interaction among neighbors tends to be confined

to those whose skills, styles, orientations, and habits are not as conducive to promoting positive social outcomes" (Wilson 1996:63). Wilson's theory is a strong challenge to the systemic model, which assumes that the content of socialization within networks is primarily prosocial.

Browning, Feinberg, and Dietz (2004; Pattillo-McCoy 1999) describe an alternative process by which networks may inhibit the capacity for local social control. In keeping with the systemic emphasis on the beneficial role of social ties, their negotiated coexistence model posits that social interaction and exchange embeds neighborhood residents in networks of mutual obligation (Rose and Clear 1998), the prevalence of which may increase the willingness of neighbors to engage in social control efforts. However, the density of ties and frequency of exchange characterizing some neighborhoods result in more extensive integration of residents who participate in crime into existing community-based social networks (also see Portes 1998:15). The resulting accumulation of social capital for offenders may limit the effectiveness of social control efforts directed toward them. After controlling for collective efficacy, reanalysis of the data of Sampson et al. (1997) by Browning et al. (2004) indicates that neighboring is *positively* associated with violent victimization, and reduces the regulatory impact of collective efficacy.

Informal control and crime

In contrast to inconsistency in research on the relationship between social networks and crime, the literature relating informal control to crime is much more consistently supportive of the systemic model. Conceptually, informal control has three dimensions (Greenberg et al. 1982:9; see also Bursik and Grasmick 1993; Jacobs 1961): informal surveillance, movement governing rules, and direct intervention. Informal surveillance refers to casual but vigilant observation of activity occurring on the street, and active safeguarding of property. Movement governing rules refer to avoiding areas within a neighborhood that are particularly unsafe. Direct intervention includes questioning residents and strangers about unusual activity, admonishing children for unacceptable behavior, and informing parents about their children's misbehavior.

Only a handful of studies examine the informal control-crime relationship. Comparison of direct intervention in two low-income neighborhoods in Cambridge, MA, by Maccoby, Johnson, and Church (1958) was the first to establish an empirical relationship. They found that respondents in a low-delinquency neighborhood were more likely to do something in

hypothetical situations if neighborhood children were observed using abusive language, damaging property, fighting, or drinking, although the differences were significant only for the latter two offenses. Further, respondents in the low-delinquency neighborhood were more likely to take action in actual delinquency incidents (60%) than were respondents in the high-delinquency neighborhood (40%).

Nearly 15 years later, Hackler, Ho, and Urquhart-Ross (1974) assessed the relationship between willingness to intervene after witnessing youth slashing the tires of an automobile, and official and perceived crime across 12 tracts in Edmonton (Alberta). Findings suggested lower crime rates in neighborhoods where a larger proportion of respondents would talk to the boys involved or notify their parents. Greenberg et al. (1982) examined several measures of informal control in their study of three high-crime and three low-crime Atlanta neighborhoods. This is the only study that contradicts systemic model predictions. They found few significant differences between residents of low- and high-crime neighborhoods with respect to informal surveillance, movement governing rules, and hypothetical or direct intervention. When differences were identified, levels of informal control were higher in the high crime neighborhoods, suggesting that some forms of informal control may be a response to crime. It is also possible that the null effects observed in that study are a consequence of the unique sampling strategy employed in the data collection. That is, each of the three high-crime neighborhoods was matched with a low-crime neighborhood on the basis of social class and a host of other ecological characteristics, which may have "designed out" the influence of potentially important systemic processes.

The article by Sampson et al. (1997; see also 1999) redefined research on the intervention dimension of informal control. A central premise is that expectations for informal control in urban neighborhoods may be common despite the absence of thick, primary ties. They examined the relationship between collective efficacy and violence across 343 Chicago neighborhoods. Findings indicate that collective efficacy is inversely associated with three measures of neighborhood violence, and that it mediates a significant proportion of concentrated disadvantage and residential stability effects on violence. Expanding on those themes, Morenoff et al. (2001) established a link between friendship and kin ties within urban neighborhoods and the extent of informal social control (collective efficacy), replicated the link between collective efficacy and violence, but found no direct effect of friendship and kin ties on violence. Bellair (2001) reported that informal surveillance, a dimension of informal control not previously examined, is

inversely associated with robbery. Finally, research also reveals that perceived cohesion (Kapsis 1978; Maccoby et al. 1958; Markowitz et al. 2001; Warren 1969), one of the components of collective efficacy, is inversely associated with crime.

Model and Hypotheses

A growing literature documents relationships among networks, informal control, and crime. Several studies support the hypothesis that large, active, and interconnected community networks and informal control are inversely associated with crime rates. However, several studies find that neighboring is associated with higher crime. Generally absent from that literature is recognition of, or reflection about, the importance of measurement. Thus, most prior research assumes by default that community organization is satisfactorily indicated by any of a wide variety of private, parochial, and public behaviors. Figure 2 illustrates the competing models of community organization that are analyzed below. Model A assumes that network and informal control measures are interchangeable, and, by implication, that if crime were regressed on any item on the list, the results would be comparable to those that would be obtained if any other item were selected. In contrast, Model B presents a multidimensional conceptualization of community organization. The assumption here is that the items correspond to distinct (but correlated) dimensions and that in the aforementioned example, regression results would vary substantially if a different item (or set of items) were chosen to test the systemic model.

Our analysis contrasts the alternative models and tests two hypotheses, each of which we state in null and alternative form:

Hypothesis 1_0: Indicators of community networks and informal control are interchangeable and constitute a single latent trait.

Hypothesis 1_1: Indicators of community networks and informal control reflect different dimensions of a multitrait construct.

The answers to the hypotheses stated above have important implications for community crime modeling and testing of social disorganization theory, which are reflected in the following hypotheses:

Hypothesis 2_0: Indicators of community networks and informal control exert effects on crime rates that are similar in magnitude and direction.

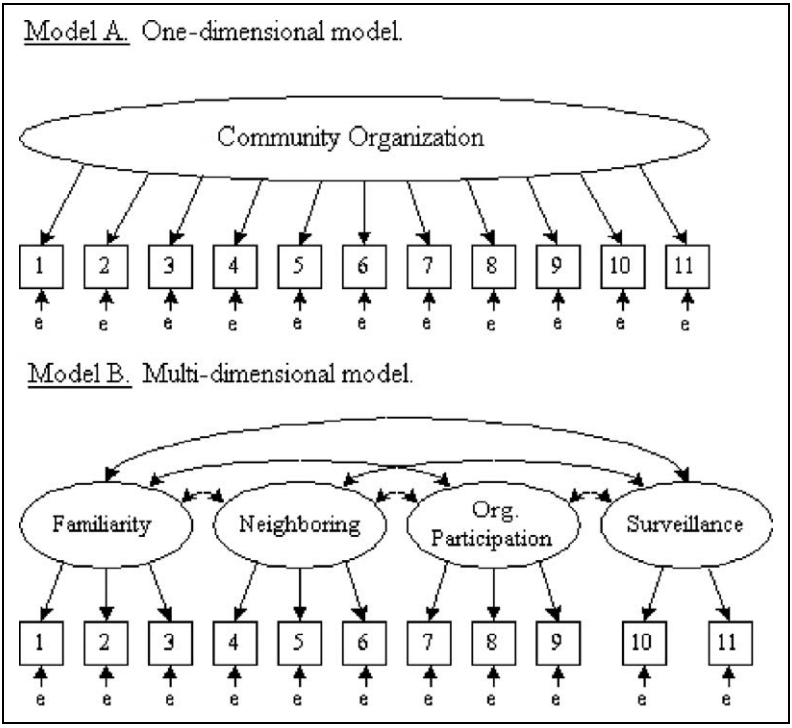

Figure 2. Competing models of community organization.

Hypothesis 2$_1$: Indicators of community networks and informal control exert substantially different effects on crime rates such that informal control directly reduces crime, and network dimensions indirectly reduce crime through informal control.

Data

The data are drawn from a 1990 victimization survey (Miethe 1992) in Seattle, WA.[1] The victimization survey was administered by telephone to randomly selected households using a multistage, cluster design. In the first stage, 100 of the city's 114 stable (those whose boundaries had not changed since 1960) census tracts were selected. In the next stage, three pairs of city blocks were selected from within each tract yielding 300 block pairs—our unit of analysis. One block in each pair was selected because there was at

least one burglary reported to the police. The other block per pair was randomly selected from among four adjoining city blocks. A total of 5,302 interviews (74.1% response rate) were completed (Miethe and McDowall 1993) ranging from 17 to 18 per block pair. For the sake of brevity, we hereafter refer to block pairs simply as blocks.

Measures

The data contain a total of 11 indicators that potentially reflect network and informal control dimensions from which to examine the measurement structure of community organization. Three items refer to the level of *familiarity* among residents: (1) Can you easily tell if a person is a stranger or resident in your city block? (2) Do you have any good friends or relatives who are neighbors on your block? (3) Would you say that you know none, some, most, or all the people on your block on a first name basis? Three items indicate *neighboring* with the respondent's current neighbors: (4) have you borrowed tools or small food items (e.g., milk, sugar) from your neighbors, (5) have you had dinner or lunch with a neighbor, (6) have you helped a neighbor with a problem.[2] Three items reflect the extent of *organizational participation*: (7) Have you participated in an organized block activity or neighborhood association? (8) Have you participated in a block activity sponsored by the Seattle Police Department? (9) Do you currently belong to a community crime prevention program? The nine items listed above potentially indicate differing social network dimensions while the remaining two items refer to the *informal surveillance* dimension of informal control: (10) Have you watched your neighbor's property when they are out of town? (11) Do you currently have neighbors watch your home when you are out of town?

To test our second set of hypotheses, we regress two victimization measures on community-level networks and informal control identified in the first step of our analysis. Respondents were asked several questions to assess their property and violent victimization experiences. Those responses are aggregated using the procedure outlined in the analytic technique section and reflect empirical Bayes residuals, which equate to variation around the average neighborhood level of property and violent victimization once individual-level demographic characteristics of the respondents are controlled and differences in the reliability of the neighborhood estimate are weighed. Property victimization includes attempted and completed burglary, motor vehicle theft, and larceny. Violent victimization subsumes mugging and stranger assault victimization that occurs on the

street.[3] Empirical Bayes (EB) residuals from the component individual crimes are added for both property and violent victimization outcomes. We also include three standard measures in those equations to make them more comparable with prior social disorganization research. Family income is expressed as a mean, racial/ethic heterogeneity as one minus the sum of the squared proportion of residents in each racial/ethnic category, and residential stability is expressed as average tenure in years.

Analytic Technique

Determining the appropriate level of aggregation for the analysis of neighborhood effects requires both theoretically sound arguments regarding the operation of neighborhood characteristics as well as attention to the degree of spatial heterogeneity within neighborhood in the processes under consideration (Hipp 2007). We consider both the census tract and block levels. Although the census tract has been conventional for the analysis of neighborhood crime rates, social organization characteristics may exhibit substantial within-tract variation and may exert more robust effects on crime outcomes at a smaller level of aggregation. To decompose variation in the neighborhood indicators at the tract and block levels, we estimated three-level hierarchical models with individuals (level 1) nested within blocks (level 2) and tracts (level 3). Results of these models indicated significant variance at level 2 (block) but not level 3 (tract). This suggests that the social organizational processes analyzed below exhibit minimal variation across census tracts once variance at the block level is partitioned. Based on that evidence, survey items are aggregated to the *block* level by adjusting (1) the individual level responses for demographic and residential background before they are aggregated to the neighborhood level, and (2) neighborhood level intercepts adjusted for differences in the reliability with which they have been estimated (for a description of this method, see Sampson et al. 1997).

$$\pi_{ij} = \beta_{0j} + \sum_{q=1}^{12} \beta_q X_{qij} + r_{ij},$$

$$r_{ij} \sim N(0, \sigma^2).$$

As an illustrative example, we describe the aggregation procedure for one measure of informal surveillance. At level 1 (between individuals), responses to the question "Do you watch your neighbor's property when

your neighbor is out of town?" are adjusted for individual level characteristics as follows: β_{0j} is the intercept, X_{qij} is the value of person-level predictor q for individual i in neighborhood j, β_q is the effect of q on individual i's expected score, and r_{ij} is an independent, normally distributed error term with variance σ^2. Person-level predictors are centered around their grand means. The model adjusts for a number of covariates including gender, age, race/ethnicity (Black, Latino vs. White), education, employment status (employed vs. not employed), marital status (never married, other vs. married), homeownership, number of years resident in the neighborhood, and residential mobility. We then extract EB residuals for the adjusted neighborhood level intercepts. To arrive at EB residuals, ordinary least squares (OLS) residuals from each neighborhood equation are regressed toward zero, incorporating weights that reflect the precision (reliability) with which they have been estimated.

Once the aggregation procedure is completed, correlations and standard deviations are imported into Lisrel 8 for analysis (see Jaccard and Wan 1997). The measurement models are evaluated for goodness of fit (i.e., GFI, CFI, NFI, and standardized residuals) across two nested models. The first tests hypothesis Hypothesis 1_0 while the second tests Hypothesis 1_1. The measurement models presented are empirically identified. $H2_0$ and $H2_1$ are addressed in subsequent regression analysis.

Descriptive Statistics

Descriptive statistics and a correlation matrix are presented in Table 2. In general, it indicates that each item exhibits sufficient variation for meaningful multivariate modeling. Consistent with the hypothesis that items are interchangeable, each measure of community organization is positively correlated with the others. However, the pattern also provides evidence for the alternative hypothesis. For instance, the indicators of organizational participation stand out as more highly correlated with each other than they are with other indicators. The issue is addressed formally in the next section.

Measurement Models

Standardized measurement coefficients for two alternative, nested models are presented in Table 3. The results in column 1 correspond to a one latent variable model (see Model A of Figure 2) that tests whether each measure of community organization is interchangeable. Overall, a one latent variable model exhibits a poor fit to the data. For instance, three respected measures

Table 2. Correlation matrix, descriptive statistics, and variable names ($n = 300$).

	1	2	3	4	5	6	7	8
1	1.0000							
2	0.3377	1.0000						
3	0.5294	0.4298	1.0000					
4	0.1833	0.3347	0.3578	1.0000				
5	0.3218	0.4851	0.5063	0.4041	1.0000			
6	0.1494	0.3043	0.2526	0.3400	0.3356	1.0000		
7	0.3414	0.3172	0.4559	0.3279	0.4450	0.2106	1.0000	
8	0.2859	0.2293	0.3198	0.2131	0.2585	0.1948	0.7782	1.0000
9	0.3150	0.2862	0.3909	0.2336	0.3393	0.2103	0.7765	0.8708
10	0.3779	0.3403	0.3936	0.3482	0.3074	0.3149	0.3420	0.3415
11	0.2872	0.2676	0.3290	0.2998	0.2088	0.2605	0.2687	0.2685
12	−0.0346	0.0159	−0.0119	−0.0798	−0.0624	−0.0220	0.0937	0.1741
13	0.0188	0.0465	0.0311	0.0470	0.1528	0.0630	0.1408	0.0542
14	0.2089	0.1214	0.2891	0.1194	0.2153	0.0284	0.1469	0.1297
15	−0.0037	−0.0131	−0.0247	−0.0576	−0.1149	0.0323	0.0680	0.0729
16	−0.2921	−0.1204	−0.2066	−0.1215	−0.1224	−0.0206	−0.1157	−0.1262

(continued)

Table 2 (continued)

	1	2	3	4	5	6	7	8
Mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SD	.30	.19	.41	.05	.26	.07	.71	.82
Minimum	−.78	−.51	−1.08	−.17	−.60	−.27	−1.62	−1.62
Maximum	.72	.48	1.24	.15	.58	.18	1.71	2.82

	9	10	11	12	13	14	15	16
9	1.0000							
10	0.3801	1.0000						
11	0.3356	0.5723	1.0000					
12	0.1609	−0.0937	−0.1325	1.0000				
13	0.0376	−0.0977	−0.1405	0.3120	1.0000			
14	0.1784	0.2003	0.3122	−0.1415	−0.2089	1.0000		

(continued)

Table 2 (continued)

	9	10	11	12	13	14	15	16
15	0.0549	−0.0778	−0.0902	0.2024	0.1698	−0.3676	1.0000	
16	−0.1731	−0.2668	−0.2404	0.1102	0.0504	−0.5733	0.1715	1.0000
Mean	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SD	.99	.15	.21	.17	.38	.66	.18	1.00
Minimum	−1.81	−.49	−.71	−.28	−.55	−2.02	−.20	−3.42
Maximum	2.72	.36	.45	.70	2.87	1.96	.46	2.29

Notes:

1. Easily Recognize Strangers on Block
2. Good Friends & Relatives on Block
3. Know People on Block by First Name
4. Borrow Tools or Food Items from Neighbor
5. Have Dinner or Lunch with Neighbor
6. Help Neighbor with Problem
7. Participate in Block Activity or Association
8. Participate in Police Sponsored Block Activity
9. Belong to Block Crime Prevention Program
10. Watch Neighbor's Property
11. Neighbors' Watch Your Property
12. Property Victimization
13. Violent Victimization
14. Family Income
15 Heterogeneity
16. Residential Turnover

Table 3. Standardized Measurement Coefficients (Maximum Likelihood) for Alternative Models of Community Organization ($n = 300$)

Community Organization Items	(1) One latent variable	(2) Four latent variables
Familiarity		
Easily Recognize Strangers on Block	.39	.61
Good Friends & Relatives on Block	.36	.61
Know People on Block by First Name	.48	.77
Neighboring		
Borrow Tools or Food Items from Neighbor	.33	.58
Have Dinner or Lunch with Neighbor	.43	.73
Help Neighbor with Problem	.27	.48
Participation		
Participate in Block Activity or Association	.86	.84
Participate in Police Sponsored Block Activity	.89	.92
Belong to Block Crime Prevention Program	.92	.94
Informal Surveillance		
Watch Neighbor's Property	.45	.84
Neighbors' Watch Your Property	.38	.68
Fit Statistics		
Chi-square (degrees of freedom)	492.46 (44)	115.04 (38)[a]
p Value <	.00	.00
Goodness of Fit (GFI)	.69	.94
Normed Fit Index (NFI)	.68	.93
Comparative Fit Index (CFI)	.70	.95
Standardized RMR	.14	.049
Critical N	42.72	159.97

[a] Reduction in chi-square from model 1 to model 2 is significant ($p < .001$).

of overall model fit (GFI, NFI, CFI) range from .68 to .70—well below the value that typically suggests an acceptable fit (i.e., .9 or higher). And the standardized root mean squared residual value of .14 is likewise well above a standard benchmark (.05 or less), indicating substandard fit.

In column 2, we present results from a four latent variable model corresponding to Model B of Figure 2. This model assumes that social networks are multidimensional and that informal control is distinct from networks, and thus that each item is best conceptualized as an indicator of a distinct network or informal control dimension rather than as an equally viable indicator of them all. Results indicate that the four latent variable model is drastically superior to the one latent variable specification. The

improvement in fit is evident in the dramatic and statistically significant reduction in chi-square from model 1 to model 2 ($p < .001$). Moreover, the GFI, NFI, and CFI all increase substantially and take on values (>.9) that indicate satisfactory fit. The standardized root mean squared residual also reduces to an acceptable value (<.05). The lone indication of a sub-par fit is the significant chi-square value. Based on the entire body of evidence in Table 3, we reject the hypothesis (Hypothesis 1_0) that indicators of community networks and informal control are interchangeable and constitute a single latent trait, and accept the alternative (Hypothesis 1_1) that indicators of networks and informal control reflect different dimensions of community organization.

Regression Analysis

Assessment of the systemic model is continued in Table 4. The model tested is informed by the measurement models previously examined and consistent with the causal ordering of the systemic model outlined above. If community organization is one-dimensional, we would expect network and informal control measures to exert substantially similar effects (i.e., similar in direction and magnitude) on crime outcomes. If community organization is multidimensional, then substantially differing effects are expected. In model 1, informal surveillance, one of three dimensions of informal control, is regressed on three sociodemographic characteristics that are standard in social disorganization research. The results are supportive of the systemic model, indicating that surveillance is associated with socioeconomic affluence and negatively associated with residential turnover.

Model 2 enters three social network measures to assess whether they mediate any of the structural effects. Familiarity, neighboring, and organizational participation are each positively associated with informal surveillance, and the family income and residential turnover coefficients reduce toward zero (the former is no longer statistically significantly). Overall, models 1 and 2 support the systemic model hypothesis that social networks facilitate informal control. In models 3 through 6, property and violent victimization are regressed first on networks and community sociodemographics, and then informal control is entered to assess whether it mediates any effects. Consistent with prior research and with the basic tenants of systemic theory, our measure of informal control exerts a significant inverse effect on both property and violent victimization rates. Given that community networks are positively associated with informal surveillance, the model indicates that each community-level network exerts an

Table 4. OLS Regression of Informal Surveillance, Property, and Violent Victimization on Community Organization ($n = 300$)

	Informal Surveillance		Property Victimization		Violent Victimization	
Community structure	(1)	(2)	(3)	(4)	(5)	(6)
Family income	.286** (.108)	.123 (.095)	−.059 (.067)	−.048 (.067)	−.146** (.043)	−.136** (.042)
Heterogeneity	.028 (.315)	−.208 (.277)	.464* (.195)	.445* (.194)	.197 (.123)	.178 (.121)
Residential turnover	−.179** (.067)	−.121* (.055)	.038 (.041)	.027 (.042)	−.034 (.026)	−.045 (.026)
Social networks						
Familiarity		.229** (.061)	−.003 (.043)	.018 (.044)	−.006 (.027)	.014 (.028)
Neighboring		.209** (.058)	−.075 (.041)	−.056 (.042)	.053* (.026)	.071** (.026)
Participation		.179** (.055)	.129** (.038)	.146** (.039)	.021 (.024)	.037 (.024)
Informal control						
Informal surveillance				−.094* (.041)		−.087** (.026)
Constant	.00	.00	.00	.00	.00	.00
Adjusted R^2	.096	.317	.068	.088	.066	.099

* $p < .05$, two-tailed test;
** $p < .01$, two-tailed. Standard error in parenthesis.

inverse, indirect effect on crime. Informal control, however, does not mediate the effect of networks on crime.

Yet, consistent with several studies that have questioned systemic theory, some of the network dimensions that we examine are positively associated with crime. Organizational participation exerts a positive effect on property victimization rates and, consistent with some prior research, neighboring is associated with increased violence.[4] Both effects actually increase in magnitude once the indirect effects they exert on crime are partialled. The pattern of suppression in the neighboring coefficient is consistent with the argument of Browning et al. (2004) concerning the dual nature of neighbor networks. In particular, although they increase informal surveillance, they may also reduce other forms of informal control that are unmeasured in the analysis such as direct intervention. We find less evidence for Wilson's (1996) arguments. To address those claims, we examined interaction effects between family income and neighboring, family income and informal surveillance, family income and organizational participation, and between neighboring and informal surveillance. None were statistically significant. Overall, results indicate that the network dimensions examined have substantially different effects, leading us to reject the null hypothesis ($H2_0$) and accept the alternative ($H2_1$).

Discussion

Social disorganization theory is designed to account for the distribution of crime across neighborhoods. The systemic model is focused on family, friendship, and neighbor networks of affiliation and their capacity for generating (prosocial) informal control through primary and secondary socialization. The model rests on the expectation of a direct, inverse relationship between informal control and crime, and an indirect, negative effect of networks on crime through informal control. Prior research often does not fully test the systemic model, focusing more on the relationship between networks and crime rather than informal control and crime. Nevertheless, there is a decent body of evidence linking networks with less crime that supports the model.

Yet, persistent anomalies such as the positive relationship between neighboring and crime revealed in several studies create nagging questions. Clearly, strong networks do not always translate into informal control and less crime. One interpretation is that neighbor networks transmit unconventional values that undermine socialization under some circumstances such as in the jobless ghetto (Wilson 1996). Another is that vibrant social networks

sometimes undermine informal control because those motivated to engage in crime are able to embed themselves in local networks (Browning et al. 2004), making it more difficult for network members to directly intervene if criminal behavior is observed. Both processes may undermine the socialization of children toward conformity, although our evidence favors Browning et al. (2004). It is also possible that there are variables unavailable to us that may account for the neighbor network-violence relationship.[5] Resolution of these issues is important for development of the systemic model. The former process, if true, suggests integration of cultural deviance processes into the model is necessary. The latter approach, in contrast, suggests theoretical elaboration of social control processes. Future research designed specifically to address this question is needed to unravel this complex issue.

An unexplored issue is whether questionnaire wording accounts for some of the anomalies in previous research. For instance, there is little consistency across studies examining neighbor networks. Bellair (1997) examined the frequency by which neighbors get together with one another in each other's homes. The measure that had the strongest and most consistent negative effect on crime included interaction ranging from frequent (weekly) to relatively infrequent (once a year or more). That measure mediated the effect of racial and ethnic heterogeneity on burglary and the effect of socioeconomic status on motor vehicle theft and robbery. Warner and Rountree (1997) report that neighbor ties are associated with reduced assault but more burglary. However, in that study, neighbor networks are defined as the prevalence of helping and sharing behaviors among neighbors, which is different from the frequency of interaction. Morenoff et al. (2001) reported that neighbor ties were unrelated to crime, but in that study, they reflected the number of friends and relatives living in the neighborhood. In the analysis of Browning et al. (2004), neighboring was measured as a four-item scale reflecting the frequency that neighbors get together with each other and/or do favors and give advice. The positive association between neighboring and violence revealed in the analysis presented above is consistent with the pattern evident in the literature—neighboring items reflecting the prevalence of helping and sharing networks are most likely to be positively associated with crime whereas frequency of interaction with neighbors yields a negative association (Bellair 1997; Warren 1969). The differences may seem trivial but variation in the measurement of social networks may account for substantively disparate findings, reflecting the complex nature and consequences of neighbor networks.

Clearly, questionnaire differences also play into the conflicting findings pertaining to organization participation. For instance, organization

participation is measured as contact with a settlement house by Kapsis (1976) and as attendance at the meetings of committees and clubs by Sampson and Groves (1989). In those examples, both measures were associated with less crime and thus consistent with the systemic model. The positive organizational participation effect uncovered in our analysis suggests to us that citizens in high-crime neighborhoods, organized in part by local police, often become interested in what they can do in response to high crime. We conclude that researchers seeking to identify the crime reduction capacity of organizational participation should focus less on participation in community crime control groups and more on items reflecting attendance at local meetings and clubs that are independent of crime control groups, because those items have shown a negative effect in prior research (see Sampson and Groves 1989).

The discussion of community organization presages a very important qualification to our analysis. Our research cannot establish which network and informal control dimensions are most important in systemic research because the items available are not exhaustive. Indeed, the data available to us do not contain measures of movement-governing rules or direct intervention such as collective efficacy—a concept that has reinvigorated interest in and energized the systemic model.[6] The goal, rather, is more humble—to illustrate the importance of carefully distinguishing research examining the networks-crime relationship from research on the informal control-crime relationship, and to argue for the importance of the latter over the former when evaluating the systemic model. Future research should build on the present study and focus on elucidating informal control processes, including whether there is causal ordering among dimensions of informal control. For instance, does informal surveillance reduce crime by stimulating direct intervention or does each dimension of informal control exert independent effects?

The anomalies noted above need to be researched and resolved, but the contradictory networks and crime research obscures strong evidence from several studies that informal control is consistently associated with less crime. The analysis of competing measurement models presented above is consistent with a multidimensional conception of community organization comprised of several distinct network dimensions and an informal control dimension that is distinct from networks. Consistent with the systemic model, regression analysis indicates that informal control reduces property and violent victimization, and that it transmits a negative effect of each network dimension examined on both crime outcomes. We conclude that dissecting the processes that comprise informal control in relation to crime is

the most fruitful line of future research if the goal is to advance the systemic model of neighborhood crime.

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Notes

1. A follow-up survey of Seattle neighborhoods was recently fielded, but those data are not publicly available.
2. The neighboring questions, which were asked consecutively in the survey, are focused around helping and sharing with neighbors, but also reflect some level of social interaction with neighbors. The latter seems more the case for the "had lunch/dinner with neighbor" item, but ultimately we have no data on why the respondent had lunch/dinner with their neighbor. It could be that the purpose was to help and/or share, but it also could have been for romantic or other (impossible to determine) reasons. It is also impossible to determine from these data how frequently the acts occurred.
3. Both measures have a mean of zero and take on a range of values above and below the mean. They are also relatively un-skewed (skewness coefficients: property = .77, violence = 2.92) and hence approximate a normal distribution. We therefore analyze them using OLS regression. In this case poisson or negative binomial regression is inappropriate because the measures do not reflect counts.
4. These findings are not the result of multi-collinearity. Variance inflation factors (VIF) were all below 2.5 indicating that the variance of each measure is substantially unique.
5. It is possible that population density or the physical structure of communities such as lot size may account for the effect. Unfortunately, those variables are available from the census at levels of geography that do not overlap with the units of analysis employed here. However, this is a question that deserves attention in future research.
6. Some may argue that our arguments apply with equal force to the measurement of collective efficacy, which combines hypothetical intervention if delinquent acts are observed on the street or if neighborhood interests are threatened with indicators reflecting perceptions of local trust and cohesion. According to this

view hypothetical intervention reflects informal control whereas perceived trust and cohesion reflect social network measures. We disagree. In our conception network measures more directly reflect the presence of established social ties and interaction, whereas perceived trust and cohesion are, like informal control, outcomes of those ties and interaction although they do not fall neatly into previous definitions of informal control.

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