LAND USE, PHYSICAL DETERIORATION, RESIDENT-BASED CONTROL, AND CALLS FOR SERVICE ON URBAN STREETBLOCKS*

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Using data collected from an inner-city Philadelphia neighborhood, we explore street block-level relationships between land use, physical deterioration, resident-based control, and calls for police service. We hypothesize that land use is a key factor influencing both resident-based control and physical deterioration and that these, in turn, are related to calls for service. Analyses show that the presence of storefronts is the strongest determinant of calls for service for crime and noncrime problems. Physical deterioration and resident-based control are less influential. In accord with our hypotheses, land use influences resident-based control and deterioration. It appears that land use and physical deterioration influence different aspects of resident-based informal control. Also, not all dimensions of resident-based control relate to police activity. Results underscore the importance of clarifying which specific dimensions of land use, deterioration, and resident-based control influence crime-related outcomes.

Crime rates, delinquency rates, and offender rates are higher in some locations than in others. These differences emerge not only when we examine large-scale units such as states or cities, but also when we look at neighborhoods and progressively smaller ecological units (Baldwin and Bottoms 1976; Brantingham and Brantingham

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Perhaps the smallest ecologically distinct unit in the residential environment is the streetblock: a section covering two sides of the street, bounded by cross streets. Streetblocks are spatially distinct, meaningful locations recognized by residents, each with its own unique social climate (Altman et al. 1987; Appleyard 1981; Brown and Werner 1985; Oxley et al. 1986). The purpose of the present investigation is to examine effects of nonresidential land use and physical deterioration on resident-based control and calls for police service across residential streetblocks.

Recent investigations of disorder on streetblocks have assessed the effects of land use patterns, resident-based informal control, physical deterioration, and defensible space features. Below we review some of the major findings linking land use, or deterioration, with crime or other measures of disorder. We broaden the theoretical scope of the project by including not only work done on streetblocks, but work done on larger ecological units as well. This study is unique because all four constructs—physical deterioration, land use, resident-based control, and police calls for service—are included rather than a subset of these factors. In addition, we use multiple indicators for each.

LITERATURE REVIEW

Crime and Land Use

Specific types of land uses are associated with higher crime or victimization rates because they draw larger numbers of victims, offenders, or both. Blocks with bars (Frisbie et al. 1978; Roncek and Bell 1981; Roncek and Pravatiner 1989) and schools (Perkins et al. 1990; Roncek and Faggiani 1985) experience higher levels of crime, calls for service, or victimization rates. In such locations it is more likely that a potential offender will meet a potential target because of the higher volume of associated pedestrian traffic.

Overall neighborhood features influencing the number of people drawn to or through a neighborhood also affect crime. White (1990) found that neighborhoods with more permeable boundaries have higher burglary rates when structural density, socioeconomic effects, and spatial autocorrelation of crime are controlled. Greenberg, Rohe, and Williams (1982) found that physical characteristics distinguished low- and high-crime neighborhoods. Low-crime neighborhoods were more homogeneously residential, contained fewer major arteries, and were more likely to have boundaries isolating them from surrounding neighborhoods. These findings support the argument that limiting the flow of automobile and
pedestrian traffic through a community will reduce access by offenders and thereby will lower the levels of crime.

Land Use and Physical Deterioration

The studies mentioned above suggest not only that specific types of nonresidential land uses, such as bars, draw or cause crime in a residential area. They also suggest that a residential area containing more nonresidential land use, regardless of the type of land use, may experience more crime. More people walk or drive through such areas; also, physical deterioration may be greater than in blocks lacking such traffic. Nonresidents passing through may litter, write graffiti, or simply cause more wear and tear on a block. In support of this suggestion, Taylor et al. (1995) found a positive relationship in two cities between the level of nonresidential land use on a block and the level of physical deterioration.

Land Use, Resident-Based Control, and Crime

The positive relationship may depend not only on those passing through, but on residents as well. Land use and deterioration may be linked because the greater foot traffic in blocks with more nonresidential land uses weakens resident-based informal control on the block. Baum, Davis, and Aiello (1978) found more mutual social withdrawal among residents on blocks with more foot traffic. Resident-based control also may mediate the effects of land use on crime: Crime and disorder in communities are determined in part by the level of residents' control over what goes on there (Bursik 1988).

Researchers disagree on whether mixed land use in a primarily residential area will enhance or diminish resident-based control. Jacobs (1961) argues that mixed land use promotes healthier blocks because they are used more heavily and thus have denser informal control networks. Others (Brown and Altman 1981; Gardiner 1976; Greenberg et al. 1982; Taylor et al. 1995) maintain that mixed land use reduces residents' ability to differentiate between local persons and outsiders. Gardiner (1976:10) argues that nonresidential land uses in predominantly residential areas can act as “crime or opportunity generators”: For example, business and social institutions serve as anchor points for travel, making it more difficult for residents to discern who is an outsider. Therefore it is easier for potential criminals to immerse themselves in such social settings and escape surveillance.

A few studies link features of land use with weaker resident-based control. Baum et al. (1978) found that residents on blocks with nonresidential land uses were less likely to use their front
yards, and knew their neighbors less well, than residents on completely residential blocks. Appleyard (1981), comparing streets with large and small amounts of vehicular traffic, found less use of fronts and less neighborly contact on the former. Residents seem to avoid large numbers of outside pedestrians or cars on their home block. The resulting changes in the way they use the area around their home weakens resident-based control of the streetblock.

Although a complete review of work on specific architectural elements, such as features of defensible space, is not warranted, we observe that such features, under certain conditions, can influence resident-based control in the same way as does residential land use.

Newman and Franck (1982) considered the impact of building size on personal crime and fear of crime in 63 public housing projects. They hypothesized that the larger the residential building, the less the sense of control and the interaction between residents in nearby outdoor spaces. Such reduction in control was expected to increase crime and fear. The authors found that increased building size weakened residents' informal control and lessened their socializing outdoors. These resident dynamics, in turn, influenced fear but not victimization.

In regard to streetblocks, we find several studies linking resident-based control, whether reflected in on-block social ties or in territorial control, with crime and victimization (Perkins et al. 1990; Taylor et al. 1984).

In sum, general land use patterns and specific architectural elements affect residents' social life in outdoor locations and influence the amount of territorial control exercised by residents (Taylor 1988). Residents' control, in turn, influences how much crime occurs there and how often residents call police. Of course, high crime levels over time can further weaken residents' informal control if they become concerned about retaliation (Merry 1981).

*Deterioration, Resident-Based Control, and Crime*

More urban residents fear becoming victims than become victims. Hunter (1978) suggested that urban residents are fearful because they witness social and physical signs of decay around them, which he labeled *incipitities*.

Physical incivilities or physical deterioration include abandoned automobiles and dilapidated houses and store fronts, as well as litter, graffiti, and signs of vandalism. Social incivilities include disorderly behavior such as public drunkenness, loitering, the presence of prostitutes, and public drug dealing. Theorists suggest that
outsiders and residents alike think these occurrences reflect weaknesses in resident-based and public agencies' efforts to maintain order.

Wilson and Kelling (1982), addressing the connections between physical deterioration, informal social control, crime, and fear of crime, suggested how neighborhood street life could change over time. According to the “broken windows” model, if one window is broken and is left unrepaired, other windows also will be broken shortly thereafter. Residents retreat from the street, juveniles become emboldened, and eventually serious offenders move into the neighborhood. In other words, the presence of a single broken window or abandoned car and its subsequent neglect may convey a message to residents and visitors that disorderly behavior flourishes in the community and that no one cares about or can remedy these problems. Such processes further erode informal social control, rendering communities vulnerable to increased serious crime.

Researchers have expressed concern about several theoretical features of Wilson and Kelling's thesis (Greene and Taylor 1988; Taylor 1987, 1995; Taylor and Gottfredson 1986). Nevertheless some evidence has accumulated, at both the neighborhood and the streetblock level, linking perceived or objectively measured incivilities with concerns about crime, neighborhood confidence, and other outcomes (Lewis and Salem 1986; Perkins et al. 1990; Skogan and Maxfield 1990). For example, Perkins et al. observed that on blocks with higher levels of vandalism, residents perceived more robberies and more assaults on the block. These connections may be conditional on other features of the residential context (Taylor et al. 1985).

Although the incivilities thesis is explicitly longitudinal and focuses on changes in residential environments, work to date has been wholly cross-sectional. Thus we are not sure what causes what when we examine the positive associations between incivilities, crime, and weakness of resident-based control.

THE CURRENT WORK: BUILDING AN INTEGRATED MODEL

Thus far we have reviewed studies linking crime with land use, deterioration, and resident-based control. If we focus on streetblocks, however, no work to date has examined an integrated model combining all three classes of predictors in one study. In this paper we see whether all the proposed links receive empirical support when streetblocks in a typical “inner-city” neighborhood are compared.
One study of neighborhoods examined simultaneously the links discussed here. Greenberg et al. (1982) contrasted land use and resident-based territorial control in high- and low-crime neighborhoods in Atlanta. As mentioned earlier, they found differences in boundary, layout, and land use between the two types of neighborhoods. They did not uncover differences in resident-based control, however. Also, their study design, which included only six neighborhoods, did not allow them to examine effects of land use and layout on resident-based informal social control. Further, because they sampled census blocks rather than streetblocks, block-level analyses were not feasible: Each census block comprises portions of up to four distinct social units.

The current model explored in this research (see Figure 1), suggests that land use is a key determinant of resident-based control on the streetblock. Below we summarize the rationales for each of the hypotheses in the model.

Figure 1.

Land Use and Resident-Based Control

Land use influences resident-based informal control in several ways. First, it affects both pedestrian and vehicular traffic patterns (Appleyard 1981; Baum et al. 1978; Hunter 1978). A secluded, exclusively residential block, for example, far from local amenities, will be traveled mainly by residents of the block; thus residents will find it easier to identify insiders and outsiders. In contrast, a mostly residential block with a corner store will attract more people from off the block; thus it will be more difficult for residents to identify who has legitimate reasons for being there.

We hypothesize that mixed land use hinders residents' ability to exert control. Thus residential blocks containing nonresidential land uses should score lower on measures of resident-based control.
Land Use and Physical Deterioration

In agreement with our previous work, we hypothesize that nonresidential land use will be associated positively with higher levels of physical deterioration (Taylor et al. 1995). The deterioration occurs more on nonresidential blocks simply because of the higher traffic levels.

Resident-Based Control and Calls for Service

The level of resident-based informal control may influence calls for police service. On blocks where residents perceive more control, calls for police service should be fewer for two reasons: Incidents requiring police intervention should be fewer in these blocks and reliance on informal means of control should be greater. Residents on these blocks will be more likely to solve problems informally than through a formal mechanism such as a call for police service.

Resident-Based Control and Physical Deterioration

Resident-based control, shaped in part by land use, will influence levels of physical deterioration. Rationales may be provided for either causal direction. If residents have less control over what happens on their block, they may be less able to stop graffiti and acts of vandalism. Conversely, as Wilson and Kelling (1982) suggest, deterioration may weaken residents' confidence that they can manage events on the block. Both causal sequences may operate in a nonrecursive fashion. We simply hypothesize here that levels of physical deterioration will be higher on blocks with less resident-based control.

Physical Deterioration and Calls for Service

Physical deterioration, in turn, may influence calls for police service. The influence may be offender-based or resident-based. Graffiti, vandalism, and abandonment may inform potential criminals that no one is in control of the block. Alternatively, physical deterioration may signal to residents that activities on the block are beyond their control, leading them to rely more heavily on formal means of social control. Residents simply may give up trying to exert control informally. We hypothesize that higher levels of physical deterioration will be related positively to calls for police service.

Land Use and Calls for Service

Land use is a major determinant of the mix of people and activities in a particular location. As a result, one would expect land use patterns to be directly related to calls for police service, beyond
their effect on resident-based control. Land use creates a physical and social context that can be conducive to criminal or noncriminal behavior; we hypothesize that nonresidential land uses will increase calls for police service.

**Dependent Variables**

We used different categories of calls for police service as the dependent variable. These encompass a much broader range of activities than data on arrests and offenses. Several categories reflect noncriminal concerns (e.g., barking dogs, noise complaints), suggesting residents' reliance on formal means of control for relatively minor events. These data are appropriate in view of our theoretical focus: They measure reliance on police, who exert formal control, for a variety of matters.

The use of data on calls for service is also mandated by our use of the streetblock as the unit of analysis. Because streetblocks are small areas, reported crime will be nonexistent on many blocks. Crime data produce dependent variables with inadequate variation across many blocks. Calls for service, however, which are more commonplace than either arrests or reported offenses, provide much stronger differentiation across our units of analysis.

Finally, calls for service have been used in prior studies of streetblocks (e.g., Taylor et al. 1984), and where they correlated substantially with reported crime measures (Taylor, Gottfredson, and Brower 1981).

**METHODOLOGY**

**Setting**

The Eisenhower Foundation, via the Campus Boulevard Corporation, provided funding to the Center for Public Policy at Temple University to conduct a needs assessment of the Logan community in North Philadelphia. The assessment was part of a police-community partnership project aimed at rebuilding the community's social structure (see Koons, Kurtz, and Greene 1992). The data reported here were collected as part of this assessment, which covered a 146-block area.

Logan is a diverse, multicultural neighborhood which, like many other inner-city neighborhoods, has been forced to deal with an unending cycle of crime, deterioration, and social disorganization. The community suffers from an assortment of problems including abandoned housing, graffiti, illegal dumping, and high
crime rates. According to the 1990 census, 24% of Logan's households are below the poverty line and 49% of the children live in single-parent households. Logan also has had to cope with an unusual source of deterioration and abandonment: shifting land. Since 1980, residents of the "sinking homes" area of Logan have found their homes crumbling. Shifts have caused structural deterioration of homes and businesses within a 28-block area. Blocks in this area show a high proportion of abandonment and have a large number of vacant lots. Because of the unusual nature of this area, we analyzed all data both with and without the sinking homes area.

Physical Survey

Trained raters conducted physical surveys in Logan to provide a picture of land use mix, level of structural dilapidation, and physical deterioration of public places such as streets, alleys, and sidewalks. The physical survey was administered on blocks containing at least one physical structure (N = 146).

Logan block captains were recruited and trained to conduct the surveys. The project staff believed that block captains would have better access to some of the information on the survey (e.g., the number of residents on a block) than could be collected easily through observation. To help meet project deadlines, eight additional local residents were trained and hired, and the surveys were completed by the end of December 1991.

Physical surveys were conducted in four steps: (1) the identification and mapping of land use and physical conditions, (2) documentation and mapping of problems found in the public areas, (3) aggregate information on conditions of the block as a whole, and (4) assessment and mapping, where applicable, of alleyways located behind buildings. All of this information was recorded on a two-sided form designed for this project.

Table 1 displays the physical variables, derived from the physical surveys, used in this analysis. We used two types of variables: land use and physical deterioration. The observations displayed an adequate level of interrater reliability (Taylor et al. 1995).
Table 1. Physical Survey Variables

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Variable Name</th>
<th>Description</th>
<th>Descriptive Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Use</td>
<td>SFRVIP</td>
<td>Proportion of addresses with a viable store</td>
<td>Mean = .09</td>
</tr>
<tr>
<td></td>
<td>NONRES2P</td>
<td>Proportion of addresses with nonresidential land uses, excluding vacant lots and stores</td>
<td>Mean = .03, SD = .08</td>
</tr>
<tr>
<td>Physical Deterioration</td>
<td>ABSTOREP</td>
<td>Proportion of addresses with abandoned stores</td>
<td>Mean = .01, SD = .04</td>
</tr>
<tr>
<td></td>
<td>LITTGRAF</td>
<td>Index based on four-category ratings of litter and graffiti, which were Z-scored and added</td>
<td>Mean = -.01, SD = 1.78</td>
</tr>
<tr>
<td></td>
<td>VANDAL</td>
<td>Four-category rating of seriousness of vandalism</td>
<td>Mean = 1.64, SD = 1</td>
</tr>
</tbody>
</table>

Household Survey

As part of the Logan Needs Assessment, we administered a household survey in 200 residences in the target area. The sampling frame consisted of blocks in Logan where at least one-third of the occupied structures were residential; 128 blocks met this criterion. A random sample of 84 blocks, the size needed to detect moderate effects from block-level data, was drawn from this sampling frame. We randomly selected 515 occupied addresses from these 84 blocks. These addresses were checked and cleared by the 35th District Philadelphia Police Department; 78 were eliminated because of safety concerns. We excluded households if residents had an arrest record for aggravated assault, robbery, drug offenses, or weapons offenses, or if calls for service to that address indicated potential danger.

We hired graduate and undergraduate university students as well as one community resident to administer door-to-door surveys. Any adult member of a household was considered an appropriate respondent. Interviewers were trained in survey procedures and the documentation of contacts. Approximately two months were

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1 By limiting ourselves to blocks that contain no more than one-third nonresidential addresses, we severely restrict the variation in our measures of residential versus nonresidential land use. This is theoretically appropriate inasmuch as our theoretical perspective focuses on predominantly residential rather than predominantly nonresidential streetblocks. The statistical implication of our restriction increases our chances of committing Type II errors. By restricting the range of the predictor variables, we increase our chances of failing to observe effects that we would have observed had we used blocks ranging from completely residential to completely nonresidential. This restriction, however, does not cast any doubts on connections we do observe between land use factors and other variables in the model.
needed to complete 200 household surveys spread over 67 blocks.\footnote{The number of blocks declined from 84 to 67 for two reasons: Some blocks were eliminated for safety reasons; others were eliminated after three unsuccessful callbacks.} Frequently we had to call back because nobody was at home; these callbacks greatly increased the time required to complete the surveys. Replacement households were added after an interviewer failed to make contact with a household after three separate attempts. The surveys were completed between March and May 1992.

The survey asked respondents about their perceptions of Logan and their satisfaction with city and private services. Four questions focused on respondents' perception of control over, and responsibility for, events in their neighborhood or on their block. Responses to these questions were aggregated to the block level to be used in this analysis. Table 2 describes the variables generated from the survey items.

### Table 2. Household Survey Variables\footnote{All variables are aggregated to the block level.}

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Description</th>
<th>Responses</th>
</tr>
</thead>
</table>
| NEIGHB.1      | Response to item: How familiar are you with the neighbors in your block? | Know no one = 15 (7.6%)  
                |             | Know some = 104 (52.55%)  
                |             | Know most = 60 (30.3%)  
                |             | Know everyone = 19 (9.6%) |
| CONTRO.1      | Response to item: Describe the level of control that you and your neighbors have over what goes on in your neighborhood. | A lot = 15 (8.1%)  
                |             | Some = 58 (31.2%)  
                |             | Little = 56 (30.1%)  
                |             | None = 57 (30.6%) |
| RESPON.1      | Response to item: How much responsibility do you feel for what happens on your block? | Big = 35 (17.9%)  
                |             | Some = 97 (49.5%)  
                |             | Not much = 40 (20.4%)  
                |             | None = 24 (12.2%) |
| WATCHO.1      | Response to item: Can you count on a neighbor to watch out for suspicious people or activity on your block? | No = 33 (18%)  
                |             | Yes = 150 (82%) |

**Calls for Service**

Data on police calls for service were obtained from the Philadelphia Police Department. Between January 1, 1991 and March 31, 1992, 16,476 calls for service were made in the Logan community. The police classify calls for service into 69 categories; many of these
contained too few cases to be analyzed. Thus we aggregated the 69 into fewer categories, as shown in Table 3.

Table 3. Categories of Calls For Service

<table>
<thead>
<tr>
<th>Category</th>
<th>Types of Calls</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROBBERY</td>
<td>Robbery in progress, report robbery, purse snatching</td>
</tr>
<tr>
<td>RAPE</td>
<td>Rape in progress, report rape</td>
</tr>
<tr>
<td>LARCENY</td>
<td>Theft in progress, theft, report theft, lost property, missing property, lost tags</td>
</tr>
<tr>
<td>BURGLARY</td>
<td>Burglary in progress, prowler, report burglary, someone breaking in</td>
</tr>
<tr>
<td>MVT</td>
<td>Stolen car</td>
</tr>
<tr>
<td>VANDAL</td>
<td>Vandalism in progress, report vandalism</td>
</tr>
<tr>
<td>SOCSM (small social incivilities)</td>
<td>Disorderly crowd, disturbance/fight in the street, harassment, loud music</td>
</tr>
<tr>
<td>DHOUSE</td>
<td>Disturbance at house</td>
</tr>
<tr>
<td>SOCLA (large social incivilities)</td>
<td>Person with a gun, knife, or weapon; person screaming, auto alarm, house alarm, gunshot</td>
</tr>
<tr>
<td>PHYSINC (physical incivilities)</td>
<td>Disabled auto, open hydrant, illegal parking, short dumping, vicious dog, report abandoned auto, dangerous highway condition, vandalism in progress, report vandalism</td>
</tr>
<tr>
<td>DBUSN</td>
<td>Disturbance at business</td>
</tr>
<tr>
<td>PSERVI (police service)</td>
<td>Check well-being, hospital case, hospital case information, information, assist sick person, missing child, missing person, meet complainant</td>
</tr>
</tbody>
</table>

We gave the data on calls for service a block identifier so that this information could be linked with the data on the physical assessment and the household surveys. After classifying the calls, we aggregated them to the block level. To compute block-level rates of calls for service across the different-sized blocks, we divided call counts by the total number of lots on the block.

The univariate distributions of these rates showed moderate to severe positive skew; because of the lack of normality, we used gamma, a nonparametric association measure.

PLAN OF ANALYSIS

Testing Individual Connections

The purpose of this analysis is to explore each of the proposed connections to see whether it is supported as predicted, and, in addition, to see whether the observed connections appear consistently across a number of indicators.

We conducted this analysis on four subsets of data. First, we examined calls-for-service data and physical assessment data for all
of the blocks in the Logan community containing an occupied residence \((N = 145)\). Second, we repeated the first analysis, but omitted the sinking block section of Logan because of its unique characteristics, as described above \((n = 117)\). Third, household survey data were available only for a subset of Logan blocks. We explored the relationships between these data and the physical assessment and calls-for-service data for all blocks generating household survey data \((n = 67)\). Finally, we repeated the third analysis without the household survey blocks that were located in the sinking homes section \((n = 60)\). Because of the small number of cases used in these analyses, we use .10 as the alpha for significance tests to approach a marginally acceptable level of statistical power.

**Testing an Underlying Assumption**

We obtain some information on the comparability of different indicators of the same underlying construct if we observe similar effects across indicators. The correlations among the indicators themselves are also relevant, however. Thus we examine the latter to assess convergent versus discriminant validity (Campbell and Fiske 1959).

**Testing 3-Way Relationships**

Finally, to illustrate our point about divergence between indicators, we examine the effects of three different indicators on nonresidential land use, and on outcomes, after controlling for resident-based control. Our broad model hypothesizes that local informal control will mediate effects of nonresidential land use on police calls for service. As we will see, the validity of this expectation depends strongly on the specific indicator.

**RESULTS**

**Testing Individual Linkages**

We organize results by each of the links in the model.

**Land use and resident-based control.** Table 4 presents analyses linking land use and informal control. We used four measures of residents' perceptions and two measures of land use: The latter two measures were proportion of addresses with viable stores and proportion of addresses with nonresidential land uses other than stores or vacant lots.

Incidence of nonresidential land use correlated significantly \((p = .10)\), in the proposed direction, with three of our four measures of resident-based control (average gamma = .40 for these three, for
Table 4.  Logan, Relationships Between Land Use/Physical Deterioration and Resident Perceptions:  
Gamma Values (Value/ASE)

<table>
<thead>
<tr>
<th>Land Use</th>
<th>NEIGHB.1 All Cases (N=67)</th>
<th>Nonsinking (N=60)</th>
<th>CONTRO.1 All Cases (N=67)</th>
<th>Nonsinking (N=60)</th>
<th>RESPON.1 All Cases (N=67)</th>
<th>Nonsinking (N=60)</th>
<th>WATCHO.1 All Cases (N=67)</th>
<th>Nonsinking (N=60)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SFRVIP</td>
<td>-.25 (-1.5)</td>
<td>-.29 (-1.6)</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
</tr>
<tr>
<td>NONRES2P</td>
<td>-.28 (-1.5)</td>
<td>-.27 (-1.4)</td>
<td>-.40 (-2.6)</td>
<td>-.42 (-2.8)</td>
<td>N.S.</td>
<td>N.S.</td>
<td>-.48 (-2.1)</td>
<td>-.50 (-2.1)</td>
</tr>
<tr>
<td>Physical Deterioration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ABSTOREP</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>-.77 (-1.8)</td>
<td>-.79 (-1.8)</td>
<td>N.S.</td>
<td>N.S.</td>
</tr>
<tr>
<td>RESABP</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>-.25 (-2.0)</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
</tr>
</tbody>
</table>

Definitions of Variables
Residents’ Perceptions:
- NEIGHB.1: How well know neighbors?
- CONTRO.1: How much control over neighborhood?
- RESPON.1: How much responsibility for what happens?

Land Use/Incivilities
- SFRVIP: Proportion of addresses with viable stores
- ABSTOREP: Proportion of addresses with abandoned stores
- WATCHO.1: Count on a neighbor to watch out for suspicious activity?
- NONRES2P: Proportion of addresses with nonresidential land uses, excluding vacant lots and stores
- RESABP: Proportion of addresses that are abandoned residential units

Note: Gammas where gamma/standardized error < ± 1.3 are not shown.
nonsinking blocks). Residents on blocks with more nonresidential land use, exclusive of stores and vacant lots, recognized other on-block residents less well, felt that they had less control over events in the neighborhood, and were less likely to count on a neighbor to watch out for suspicious activity. The proportion of active stores on the block correlated somewhat less consistently with resident-based control, yielding sizable gammas for only two of the four control items. Inclusion or exclusion of blocks from the sinking homes area had little influence on the coefficients. As nonresidential land use increases, residents’ perception of control decreases, but the strength of the relationship depends both on the land use and on measures of informal control used.

Two measures of residents’ perceptions—how well they know their neighbors and whether they can count on someone to watch out for suspicious activity—related more consistently to measures of land use than did the other two measures of residents’ perceptions, namely how much control they feel they have over their neighborhood and how responsible they feel for what happens on their block. The responsibility measure was not related significantly to either measure of land use. This finding strongly suggests that researchers must consider carefully which measures to use when assessing resident-based control. Different dimensions of resident-based control relate differentially to land use.

Resident-based control and calls for service. Table 5 relates our four measures of residents’ perceptions of control to four types of calls for service. Ten of the 13 significant coefficients were in the expected direction (negative); one was in the direction not expected (positive). The resident control measures that connected most consistently with police calls were knowing the neighbors (NEIGHB.1) and counting on a neighbor to keep an eye on suspicious activity (WATCHO.1). Each of these related negatively to two police activity measures.

The class of calls about disturbances at a house (DHOUSE) related most consistently to residents’ perceptions. With an increase in residents’ perceptions of control, knowledge of neighbors, and ability to count on neighbors to watch out for suspicious activity, calls about disturbances at houses decreased. Such calls increased, however, as feelings of responsibility for events in the neighborhood increased. We had hypothesized an opposite direction for this relationship.

Calls for burglary were related significantly to residents’ perceptions in 4 out of 8 coefficients. In particular, calls for burglary decreased as reliance on vigilant neighbors increased.
Table 5. Logan, Relationships Between Calls For Service and Resident Perceptions: Gamma Values (Value/ASE)

<table>
<thead>
<tr>
<th>Calls</th>
<th>NEIGHB,1</th>
<th>CONTRO,1</th>
<th>RESPON,1</th>
<th>WATCHO,1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All Cases (N=67)</td>
<td>Nonsinking (N=60)</td>
<td>All Cases (N=67)</td>
<td>Nonsinking (N=60)</td>
</tr>
<tr>
<td>DHOUSE.R</td>
<td>-.28 (-3.0)</td>
<td>-.26 (-2.5)</td>
<td>-.21 (-2.1)</td>
<td>.20 (1.9)</td>
</tr>
<tr>
<td>ROBBER.R</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
</tr>
<tr>
<td>PSERVLR.R</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
</tr>
<tr>
<td>BURGLAR.R</td>
<td>N.S.</td>
<td>-.16 (-1.6)</td>
<td>-.17 (-1.8)</td>
<td>.27 (3.0)</td>
</tr>
</tbody>
</table>

Definitions of Variables

Residents' Perceptions:
- NEIGHB,1: How well know neighbors?
- CONTRO,1: How much control over neighborhood
- RESPON,1: How much responsibility for what happens?
- WATCHO,1: Count on neighbor to watch out for suspicious activity?

Calls:
- DHOUSE.R: Disturbance house
- ROBBER.R: Robbery in progress/report robbery/purse snatching
- PSERVLR.R: Noncrime service calls (e.g., transport to hospital)
- BURGLAR.R: Burglary in progress/report burglary/prowler/break-in
Resident-based control and physical deterioration. Overall, we found few significant relationships between residents’ perceptions and measures of physical deterioration. Of 16 relationships shown in Table 4, only 3 were significant. Graffiti, vandalism, and litter (not shown) had no significant links with resident-based control.

The measure of territorial responsibility has a strong negative correlation with the proportion of abandoned storefronts on the block (-.77). As the proportion of the block consisting of abandoned stores increases, residents feel much less responsibility for what happens on their block. The proportion of abandoned homes (RESABP) also is related negatively to this measure, but the relationship is significant only for the nonsinking blocks (-.25).

The strong significant correlation we see here supports Wilson and Kelling’s (1982) thesis that more extensive incivilities cause residents to withdraw from the public sphere. In contrast to their thesis, however, we also find that shrinking territorial responsibility does not influence reliance on formal agents of control (Table 5). It appears that land use and physical deterioration influence different aspects of resident-based informal control, and that not all aspects of these informal controls relate to levels of police activity across blocks.

Physical deterioration and calls for service. Our measures of physical deterioration, ABSTOREP, LITGRAF, and VANDAL, were related less consistently to calls for service than were the measures of land use. Of the three, abandoned stores had the strongest positive correlation with some calls for service in some sets of blocks: 17 of 32 tested relationships were significant, positive, and moderate in size (see Table 6). In all four different sets of blocks, abandoned stores correlated significantly with disturbances at a house and with major social incivilities. Abandoned stores may represent locations where surveillance is minimal, and where potential miscreants can gather with impunity. It is not surprising that the incidence of unoccupied storefronts relates to disorderly behaviors for which police are called.

Measures of litter/graffiti and vandalism attained statistical significance in some cases (respectively 13 and 10 of 32 relationships), but the coefficients generally were small and in three cases were negative, opposite the expected direction.

Land use and physical deterioration. We hypothesized that blocks with more nonresidential land uses would have higher levels of physical deterioration. We used two measures of nonresidential land uses—proportion of a block consisting of viable storefronts and proportion of a block which is nonresidential (excluding storefronts...
Table 6. Logan, Relationships Between Calls for Service and Physical Deterioration: Gamma Values (Value/ASE)

<table>
<thead>
<tr>
<th>ABSTOREP</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>All Blocks (N = 145)</td>
<td>All Nonsinking Blocks (N = 117)</td>
<td>Survey Blocks (N = 67)</td>
<td>Survey Nonsinking Blocks (N = 69)</td>
<td>LITTGRAF</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>VANDAL</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>DHOUSE, R</td>
<td>.26</td>
<td>.42</td>
<td>.58</td>
<td>.56</td>
<td>.14</td>
<td>N.S.</td>
<td>.12</td>
<td>N.S.</td>
<td>.23</td>
<td>N.S.</td>
<td>N.S.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.4)</td>
<td>(1.9)</td>
<td>(1.7)</td>
<td>(1.7)</td>
<td>(2.0)</td>
<td>(1.3)</td>
<td>(2.0)</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOCLA, R</td>
<td>.36</td>
<td>.40</td>
<td>.73</td>
<td>.74</td>
<td>.12</td>
<td>.20</td>
<td>.17</td>
<td>.17</td>
<td>N.S.</td>
<td>N.S.</td>
<td>.24</td>
<td>N.S.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.3)</td>
<td>(2.1)</td>
<td>(1.8)</td>
<td>(1.8)</td>
<td>(2.8)</td>
<td>(1.8)</td>
<td>(1.7)</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>PSERVI, R</td>
<td>N.S.</td>
<td>N.S.</td>
<td>.77</td>
<td>.74</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>-.14</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>(1.8)</td>
<td>(1.8)</td>
<td>(1.8)</td>
<td>(1.8)</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYSIN, R</td>
<td>.36</td>
<td>.48</td>
<td>.42</td>
<td>N.S.</td>
<td>N.S.</td>
<td>.10</td>
<td>N.S.</td>
<td>.17</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.2)</td>
<td>(2.4)</td>
<td>(1.3)</td>
<td>(1.7)</td>
<td>(1.3)</td>
<td>(1.7)</td>
<td>(1.7)</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BURGLA, R</td>
<td>.28</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>.13</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.5)</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>(.4)</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOCSM, R</td>
<td>.34</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.9)</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROBBER, R</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(.8)</td>
<td>(2.5)</td>
<td>(1.8)</td>
<td>(1.5)</td>
<td>(1.8)</td>
<td>(1.5)</td>
<td>(1.5)</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LARCEN, R</td>
<td>.39</td>
<td>.44</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.4)</td>
<td>(2.1)</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
and vacant lots)—and two measures of deterioration: ratings of vandalism and a composite measure of litter and graffiti (see Table 7).

The proportion of viable storefronts was related significantly to the level of litter/graffiti in all four sets of blocks. All coefficients were positive and moderate in size, ranging from .28 to .43. This strongly indicates that the presence of storefronts increases the level of litter and graffiti. This relationship underscores the idea that nonresidential uses draw more traffic to a block, which results in greater wear and tear.

The proportion of storefronts also was related significantly to measures of vandalism in three of the four samples. As with litter/graffiti, all coefficients were positive and significant in size, an indication that blocks with higher proportions of stores have higher levels of vandalism.

Our second measure of nonresidential land uses (excluding stores and vacant lots) was unrelated to the level of litter and graffiti. It was, however, related to the level of observed vandalism in three of the four samples of blocks. Yet contrary to expectations, the coefficients were negative and moderate in size. Thus increases in nonresidential land uses other than vacant lots and storefronts are linked to less vandalism. Perhaps these other land uses, such as small businesses or institutions such as churches, increased the volume of “legitimate” users.

Overall we found support for the idea that nonresidential land uses drawing outsiders to blocks result in more deterioration there. Stores, which inevitably bring increased foot traffic in this environment, also bring increased litter, graffiti, and vandalism. This connection may be mediated entirely by control by residents. Nonstore land uses, however, appear to be associated with less vandalism. The two different classes of land uses may bring different types of traffic to the block.

Land use and calls for service. The relationships between land use variables and rates of calls for service are fairly consistent across the four sets of blocks used here (see Table 8). Of the two land use variables considered, SFRVIP and NONRES2P, the first was related more strongly and more consistently to calls for service. The proportion of addresses on a block which are functioning storefronts (SFRVIP) was correlated positively with all types of calls for service that we considered, ranging from robbery (ROMBER.R) to small problems of order maintenance (SOCSM.R). This relationship held for all sets of blocks. Coefficients ranged from .16 (for disturbances at houses) to .49 (for large social incivilities).
Table 7. Logan, Relationships Between Land Use and Physical Deterioration: Gamma Values (Value/ASE)

<table>
<thead>
<tr>
<th>LITTGRAF</th>
<th>Physical Deterioration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VANDAL</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>All Blocks</td>
<td>2</td>
</tr>
<tr>
<td>(N = 145)</td>
<td>All Nonsinking Blocks</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>All Blocks</td>
<td>Survey Blocks</td>
</tr>
<tr>
<td>(N = 117)</td>
<td>(N = 67)</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Survey Blocks</td>
<td>Survey Nonsinking Blocks</td>
</tr>
<tr>
<td>(N = 60)</td>
<td></td>
</tr>
</tbody>
</table>

Land Use

<table>
<thead>
<tr>
<th>SFRVIP</th>
<th>.28 (3.0)</th>
<th>.43 (4.4)</th>
<th>.33 (2.1)</th>
<th>.43 (2.4)</th>
<th>N.S.</th>
<th>.33 (2.2)</th>
<th>.45 (1.9)</th>
<th>.58 (2.0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NONRES2P</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>N.S.</td>
<td>-.39 (-2.4)</td>
<td>-.25 (-1.2)</td>
<td>-.55 (-1.7)</td>
<td>N.S.</td>
</tr>
</tbody>
</table>
Table 8. Logan, Relationships Between Calls for Service and Land Use: Gamma Values (Value/ASE)

<table>
<thead>
<tr>
<th>SFRVIP</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Land Use</th>
<th>NONRES2P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All Blocks</td>
<td>All Nonsinking Blocks</td>
<td>Survey Blocks</td>
<td>Survey Nonsinking Blocks</td>
<td>(N = 146)</td>
<td>(N = 117)</td>
</tr>
<tr>
<td>DHOUSE_R</td>
<td>.16 (1.7)</td>
<td>.16 (1.6)</td>
<td>.23 (1.7)</td>
<td>.24 (1.7)</td>
<td>N.S.</td>
<td>N.S.</td>
</tr>
<tr>
<td>SOCLA_R</td>
<td>.49 (5.4)</td>
<td>.47 (4.9)</td>
<td>.35 (2.2)</td>
<td>.33 (1.9)</td>
<td>.30 (2.9)</td>
<td>.31 (2.9)</td>
</tr>
<tr>
<td>PSER_VI_R</td>
<td>.36 (4.2)</td>
<td>.33 (3.5)</td>
<td>.36 (2.6)</td>
<td>.39 (2.6)</td>
<td>.26 (2.6)</td>
<td>.25 (2.3)</td>
</tr>
<tr>
<td>PHYSIN_R</td>
<td>.31 (3.4)</td>
<td>.30 (3.1)</td>
<td>.22 (1.5)</td>
<td>.24 (1.5)</td>
<td>.21 (2.1)</td>
<td>.17 (1.7)</td>
</tr>
<tr>
<td>BURGLA_R</td>
<td>.26 (2.8)</td>
<td>.28 (2.8)</td>
<td>.29 (1.9)</td>
<td>.34 (2.1)</td>
<td>.29 (2.7)</td>
<td>.31 (2.8)</td>
</tr>
<tr>
<td>SOCISM_R</td>
<td>.35 (3.9)</td>
<td>.38 (4.0)</td>
<td>.41 (2.9)</td>
<td>.49 (3.3)</td>
<td>.18 (1.8)</td>
<td>.14 (1.3)</td>
</tr>
<tr>
<td>ROBBER_R</td>
<td>.44 (4.6)</td>
<td>.47 (4.7)</td>
<td>.34 (1.9)</td>
<td>.37 (2.0)</td>
<td>.19 (1.7)</td>
<td>.19 (1.7)</td>
</tr>
<tr>
<td>LARCEN_R</td>
<td>.39 (4.1)</td>
<td>.41 (4.1)</td>
<td>.32 (2.0)</td>
<td>.42 (2.6)</td>
<td>.29 (2.9)</td>
<td>.32 (3.1)</td>
</tr>
</tbody>
</table>
The proportion of a block with nonresidential land uses other than a store or a vacant lot (NONRES2P) also correlated positively with calls for service, but for fewer types of calls and across fewer sets of blocks. Of 32 tested relationships, 16 were significant. All were positive, as hypothesized, and small to moderate in size.

Testing an Underlying Assumption

As discussed above, our model assumes that indicators represent particular concepts. In fact, however, the indicators we have chosen may represent different concepts. It is important to test this assumption because if it is incorrect, then our model is misspecified. Table 9 displays the gamma coefficients for the indicators in our model. If the indicators for a particular concept are unitary, we would expect to see fairly large gamma coefficients.

The coefficients for the resident-based control measures—NEIGHB.1, CONTRO.1, WATCHO.1, and RESPON.1—are mostly moderate in size, in the .3 to .4 range. Further, some of the gammas are negative, an indication that some of the indicators are inversely related to each other; this is contrary to our expectations. The results for the indicators of our other concepts are similar: Gammas are small to moderate and vary in sign. The only exceptions are our physical deterioration measures, LITTGRAF and VANDAL, which have a moderately high gamma of .743. As we shall see later, however, these measures do not relate well to other concepts in our model. These findings indicate that our model needs to be respecified.

Testing Three-Way Relationships

We calculated three partial gammas using disturbance at a house (DHOUSE) as the outcome. We chose this outcome because the earlier analyses indicated that this call for service was related most strongly and most consistently to other concepts in our model. For similar reasons, we chose NEIGHB.1 as the resident-based control measure for this analysis.

If (as we hypothesized earlier) resident-based informal control mediates effects of nonresidential land use on police calls, then, if we partial the effects of informal control from nonresidential land use, the remaining (partialed) effect of the latter should be much weaker. But if our “nonresidential land use” construct is defined too broadly, and if different indicators are capturing differing attributes, the partialed results may vary across indicators.

Figure 2 shows the zero-order effects of three nonresidential indicators on call rate for house disturbances, and the partialed, independent effects of nonresidential land use and informal control.
### Table 9. Matrix of Gamma Coefficients

<table>
<thead>
<tr>
<th></th>
<th>NEIGHB_1</th>
<th>CONTRO_1</th>
<th>WATCHO_1</th>
<th>RESPON_1</th>
<th>NONRES2P</th>
<th>SFRVIP</th>
<th>RESABP</th>
<th>LITTGRAF</th>
<th>ABSTOREP</th>
<th>VANDAL</th>
</tr>
</thead>
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<tr>
<td>NEIGHB_1</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>CONTRO_1</td>
<td>-0.294</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WATCHO_1</td>
<td>0.403</td>
<td>-0.603</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RESPON_1</td>
<td>-0.292</td>
<td>0.304</td>
<td>-0.273</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NONRES2P</td>
<td>-0.280</td>
<td>0.229</td>
<td>-0.450</td>
<td>0.064</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SFRVIP</td>
<td>-0.251</td>
<td>0.082</td>
<td>-0.209</td>
<td>0.075</td>
<td>-0.301</td>
<td>1.000</td>
<td></td>
<td></td>
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<tr>
<td>RESABP</td>
<td>0.015</td>
<td>0.087</td>
<td>-0.089</td>
<td>0.141</td>
<td>-0.209</td>
<td>-0.175</td>
<td>1.000</td>
<td></td>
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<tr>
<td>LITTGRAF</td>
<td>-0.102</td>
<td>0.101</td>
<td>-0.110</td>
<td>-0.002</td>
<td>-0.047</td>
<td>0.337</td>
<td>0.232</td>
<td>1.000</td>
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<tr>
<td>ABSTOREP</td>
<td>-0.427</td>
<td>-0.193</td>
<td>-0.044</td>
<td>0.769</td>
<td>0.362</td>
<td>0.767</td>
<td>-0.090</td>
<td>0.400</td>
<td>1.000</td>
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<tr>
<td>VANDAL</td>
<td>0.020</td>
<td>0.177</td>
<td>-0.082</td>
<td>0.100</td>
<td>-0.553</td>
<td>0.451</td>
<td>0.534</td>
<td>0.743</td>
<td>-1.000</td>
<td>1.000</td>
</tr>
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</table>
If we use viable storefronts (SFRVIP) as the indicator, the effect is weakened slightly, as we predicted, and becomes nonsignificant (.23 to .17).

Neighborly contact in fact reduces the effect of storefronts on house disturbances, but it goes beyond our hypothesis by eliminating the effect of storefronts on calls for service. We hypothesized that storefronts would continue to have an independent direct effect on storefronts after controlling for neighborly contact.

We see a different pattern, however, if we examine other nonresidential land uses such as small businesses and churches (NONRES2P). Here, after we control for resident-based control, effects of land use become significant, showing a negative (.21) relationship with calls about disturbances at houses after neighborly contact is taken into account. Also, the relationship between neighborly contact and calls remains significant and becomes larger (from -.28 to -.34) after controlling for nonresidential land uses.

Finally, with abandoned stores (ABSTOREP), a measure of both the mix of land uses and deterioration, we see a third pattern: The partialing for informal control has no effect, on effects of land use. The gamma between ABSTOREP and DHOUSE before controlling for neighborly contact is .58; after controlling for neighborly contact it declines an insignificant amount to .57. The coefficient for the effect of neighborly contact on calls becomes insignificant (-.040, p = .73) after controlling for the presence of abandoned stores.
In short, our expectation that levels of informal, resident-based control will mediate the effects of land use on police calls is or is not supported depending on the type of land use considered. Different types of indicators may capture different types of block activity associated with different types of users coming to the block.

**DISCUSSION**

The present study contains an initial examination of land use, physical deterioration, and resident-based informal control. We consider how these features of urban residential streetblocks influence levels of police activity. In this initial examination of the elements of an integrated model we explored bivariate relationships. Our data set contains measures of resident-based control for only a limited number of blocks, and measures of police activity, land use, and deterioration for a much larger set of blocks. By limiting ourselves to bivariate relationships we can explore each relationship using the largest possible number of blocks. We also can consider a large number of alternative indicators for particular constructs, exploring how relationships vary across alternate indicators and considering the theoretical implications of these differences. Next we consider how each of the proposed links in the model fared in our analyses, and then discuss model specification.

*Land Use and Resident-Based Control*

As nonresidential land use increases, whether in the form of viable stores or for other nonresidential uses, residents' perceptions of control decreases. Only territorial, on-block feelings of responsibility were not influenced by land use. The links between residents' perceptions of informal control and land use are moderately large and are consistent across indicators.

*Resident-Based Control and Calls for Service*

The relationship between resident-based control and calls for service was generally significant and modest in size for several but not all types of call for service. Police calls for disturbances at a house—noise, people arguing, large groups of people—were most consistently related to residents' perceptions of control. On-block feelings of territorial responsibility appeared to be unrelated to calls for service. This point replicates a finding by Greenberg et al. (1982) at the neighborhood level. The evidence for the importance of this link is less clear than for the land use-control link because fewer than half of the tested relationships were significant.
Resident-Based Control and Physical Deterioration

The proposed relationship between resident-based control and physical deterioration received limited support. Although territorial responsibility correlated strongly with abandoned storefronts, other measures of resident dynamics were unaffected. This finding does not necessarily mean that we should abandon this link in our model. Rather, it suggests that the relationship depends heavily on the measure of control used. The dimensions of resident-based control linked to deterioration may be different from those linked to police calls for service. Also, in contrast to much of the work on perceived incivilities, our results suggest that abandoned stores may be clearer indicators of physical deterioration than measures of litter and graffiti, at least in settings like those examined here.

Physical Deterioration and Calls for Service

Abandoned stores again emerged as the most accurate deterioration predictor of calls for service. They were related to most categories of calls for service, depending on the set of blocks used. Litter/graffiti and vandalism performed poorly. Again, this does not mean that we should abandon the link. Rather, it suggests that abandoned stores may be the most important measure of physical deterioration when effects on police activity are considered.

Land Use and Physical Deterioration

We hypothesized that blocks with more nonresidential land uses would show more physical deterioration; we found that blocks with more viable storefronts exhibited more physical deterioration. Our other measure of nonresidential land use, including all uses other than vacant lots and stores, was not an accurate predictor of deterioration. Type of nonresidential land use is important, probably because different land uses draw different mixes of people for different activities. It is easy to see, for example, how litter could be related to the presence of a corner store. A church, in contrast, serves a completely different purpose and notably draws a different clientele: one less likely to commit vandalism, to leave graffiti, or to litter. Some land uses, then, actually may act as a buffer against physical deterioration. Thus the link between land use and deterioration may have a positive or a negative sign, depending on the land use. The partialing analysis underscored this possibility, showing different land use-control links to the outcome.
Land Use and Calls for Service

This relationship received moderate support in our analysis. Once again, viable storefronts emerge as the nonresidential land use related most strongly to calls for service. As with the physical deterioration-land use link, this finding suggests the importance of refining our measures of nonresidential land use.

Calls for police service that are not crime-related (PSERVI) are consistently correlated positively with SFRVIP. This indicates that residents on blocks containing more storefronts are more likely to call the police for assistance with noncriminal matters. One interpretation is that residents on blocks with more storefronts are less likely to know their neighbors and thus must rely more heavily on the police for assistance (see Baum et al. 1978).

Model Specification

Some of the constructs in this area need further refinement. Informal resident-based control and nonresidential land use are the two clearest cases in point. In the case of the former, our four indicators appear to be tapping into different dimensions of the concept. This may partially explain the divergence in past researchers’ findings. In regard to the latter, we see different zero-order and partial effects. Links between neighborly contact, disorder, and land use depend on the types of nonresidential land use under consideration.

Much of the theoretical work on land use has focused on the presence of one store or more. We need to know more about block life and about relations among residents when this residential fabric is made more complex by other types of establishments or institutions.

CONCLUSION

In general, land use variables link more consistently and more strongly to police calls for service than do measures of physical deterioration. Nonresidential land use, then, might be a stronger “cause” of streetblock disorder than physical deterioration. Stores—both viable and abandoned—connected most consistently and most strongly to the other constructs in our model. This pattern of findings argues strongly for an expansion of the incivilities thesis to include the role of nonresidential land uses.

We would not argue for excluding stores from a mostly residential area. Rather, our work suggests that blocks which have stores may need to work harder to organize than blocks without stores,
and perhaps to devote special effort to building relations between proprietors and residents.

Our findings—that results depend on the types of nonresidential land use considered, on the indicators of deterioration and resident-based control used, and (to some extent) on the type of police activity—indicate the need for further conceptual refinement. If we are to develop and test an integrated model linking nonresidential land uses, informal resident-based control, and physical incivilities, we must specify why some indicators or some dimensions of a concept are more relevant than others. Underlying this specification should be a focus on particular behavioral and spatial processes. In simpler terms, we need to know what draws different types and numbers of people to a streetblock, how they behave there, how residents respond to them, and how their presence affects overall life on the block.

REFERENCES


