RESEARCH NOTE

STREET BLOCKS WITH MORE NONRESIDENTIAL LAND USE HAVE MORE PHYSICAL DETERIORATION
Evidence from
Baltimore and Philadelphia

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Divergent theories offer two possible connections between nonresidential land use and physical deterioration among urban residential street blocks. Jane Jacobs's model of street blocks indicates that blocks with more nonresidential land use will be better kept; studies of territorial functioning indicate that nonresidential land uses interfere with resident-based informal social control. Here, a comparison of Baltimore and Philadelphia indicates a significant positive correlation between latent constructs for physical deterioration and nonresidential land use. Residential blocks with more nonresidential land uses may have more incivilities because the uses draw more people to the block and/or because the uses interfere with resident-based territorial functioning.

Two different theoretical perspectives suggest different signs for the correlation between physical deterioration and nonresidential land uses.

Jacobs's (1961, 1968) model of healthy blocks suggests a negative correlation. Models of resident-based territorial functioning suggest a positive one.

Jacobs (1968, 78) focused on residents' contributions to street safety and found that "the sidewalk and street peace . . . is kept primarily by an intricate, almost unconscious network of voluntary controls and standards among the people themselves and enforced by the people themselves." She argued that both residents and shopkeepers contribute to street safety (pp. 80, 82). Streets with stores on the ground floor and apartments above represent safer arrangements than streets with only apartments (p. 82). Such arrangements promote "intricacy of sidewalk use," the key to "a marvelous order for maintaining the safety of the streets" (p. 90). During the day and the early evening, the stores draw patrons; traversing the street, their mere presence contributes to its safety. Jacobs based her thesis on several years' experience living on Hudson Street in New York City and on observations of neighborhoods and conversations with neighbors in other cities.

Jacobs's thesis (1961, 1968) suggests that mixed land use *in a predominantly residential context* promotes a denser pattern of regular street usage and more extensive informal social control. Land uses other than stores, such as small institutions or businesses, also will draw regular users and promote street safety, according to Jacobs. If this is so, these blocks should be "healthier," and vandalism, litter, graffiti, and other signs of physical deterioration—such as abandoned buildings—should be less evident on such blocks. Several researchers have suggested that such deterioration is interpreted by residents as clues to a weak or weakening local public order and high or increasing chances of victimization (e.g., Lewis and Salem 1986). They have labeled such deterioration *physical incivilities*.

In contrast to Jacobs's (1961, 1968) thesis, scholars using a territorial model in their work on resident-based informal social control suggest that

nonresidential land uses on a block impair resident-based control (Taylor 1987, 1988; Taylor and Brower 1985; Taylor, Gottfredson, and Brower 1981, 1984; McPherson, Silloway, and Frey 1983). As distance from the home increases, residents experience declining informal social control. As they pass from inside the house to outside, from their property to the sidewalk in front, down the block, and from their block to another block, they experience progressively decreasing (1) responsibility for events occurring, (2) ability to recognize others, and (3) ability to keep people out of spaces or to control the activities of persons in those spaces. Informal control on the total block emerges from a web of overlapping, home-centered domains of resident-based control. On blocks where residents know one another better, the domains extend farther out from the home and control wanes more gradually (Taylor, Gottfredson, and Brower 1981).

Nonresidential land uses on a residential block interfere with informal control for two reasons. First, every address on the block without an occupied dwelling unit represents a "hole" in the resident-based fabric that adjoins a stretch of sidewalk for which no resident will take responsibility. Workers in a store or a beauty salon, for example, may look after events out on the sidewalk during operating hours, but their presence is limited to only certain hours. Furthermore, although they are present, their willingness to manage street life may not be as strong or dependable as a resident's would be, especially in locales where shopkeepers differ from residents in class or race. Class or ethnic differences between store personnel and residents may make it difficult for proprietors or their employees to interpret the behavior of people on the sidewalk (Merry 1981).

Besides removing residents who could contribute to the web of informal social control, nonresidential land uses also draw outsiders to a block. Although their presence on the block may be legitimate, it alters the ratio of outsiders to regulars on a block, lessening the familiarity of faces that residents see around them and encouraging residents to withdraw from outdoor public spaces (Baum, Davis, and Aiello 1978). These changes may further dampen the effectiveness of attempts at informal social control or reduce residents' willingness to attempt informal social control.

Thus, on blocks with more nonresidential land uses, residents who would help manage the block have been removed and more outsiders are drawn to or through the street block—the number, type, and timing depending upon the nature of the specific land uses and the adjoining context. Prior studies (Baum, Davis, and Aiello 1978; McPherson and Silloway 1983) indicate that these changes will weaken residents' ability to control events on the street informally. Therefore, deterioration should be more prevalent on such blocks.[1]

METHODS

BALTIMORE DATA COLLECTED IN 1987

In 1987, we drew a sample of 50 street blocks, one from each of 50 randomly selected neighborhoods.[2] The street block was defined as both sides of a street, bounded by cross streets or a dead end. Trained raters completed the on-site assessments of land use and deterioration. They rated not only the overall block but also individual units. For each of eight randomly selected residential properties on each block and for each nonresidential or mixed-use building on each block, raters observed litter, vandalism, lack of exterior maintenance, security and alarm signs, and signs of occupancy or abandonment. Of the sample of 50 blocks, 45 were independently and simultaneously assessed by two raters, and the remainder by one rater.[3] We had complete data on the variables used here for 47 of the 50 blocks and used the listwise matrix for these 47 blocks in our analyses.

The 50 neighborhoods sampled provide a broad cross section of Baltimore neighborhoods. The 1980 census figures aggregated to neighborhoods showed that the percentage of African-American households ranged from .1 to 99 (mean = 49) and the percentage of owner-occupied households ranged from 11 to 92 (mean = 50).

PHILADELPHIA DATA COLLECTED FROM ONE LARGE COMMUNITY IN 1991

In Philadelphia, we focused on one large North Philadelphia community: Logan. The community is predominantly African-American, but numerous other ethnic groups also reside there. Although Logan has some characteristics of an inner-city neighborhood, it is a relatively stable urban community with moderate levels of homeownership. Logan was the focus of a larger, communitywide, needs-assessment project.[4] The 1990 census data showed African-American households ranging from 59% to 88% (mean = 79%) across the different tracts in the community and owner-occupied households ranging from 55% to 74% (mean = 60%).[5]

Local residents and block captains completed physical surveys of blocks during the latter part of 1991. They followed a four-step procedure that included the identification and mapping of land use and physical conditions, the documentation and mapping of problems found in the public areas (e.g., streets and sidewalks), aggregate information on conditions and counts concerning each block as a whole, and an assessment and mapping, where applicable, of alleyways located in the rear of buildings on either side of the blocks. Local block captains, who had completed a block survey for their

Table 1: Variables for Incivilities and Nonresidential Land Use

	Baltimore		Logan (Philadelphia)	
Concept	Variable Name and Description	Variable Statistics	Variable Name and Description	Variable Statistics

Dimension: Physical Deterioration

Concept	Variable Name and Description	Variable Statistics	Variable Name and Description	Variable Statistics
Vandalism	AGVANDAL Category rating based on interval sample of 8 residential addresses per block. Higher score indicates more of the attribute.	Mean = .098 SD = .137 Min = 0 Max = .563 α = .80	VANDAL Four category rating of seriousness of vandalism.	Mean = 1.63 SD = 1.002 Min = 1 Max = 4 α = .90
Litter	AGLITTER Category rating based on interval sample of 8 residential addresses per block. Higher score indicates more of the attribute.	Mean = .439 SD = .292 Min = 0 Max = .938 α = .90	LITTGRAF Index based on 4 category ratings of litter and graffiti, which were z-scored and added.	Mean = -.028 SD = 1.779 Min = -2.059 Max = 3.635 α = .73
Abandoned residential properties	ABANPROP Proportion of addressses with abandoned residential structure.	Mean = .041 SD = .071 Min = 0 Max = .308 α = .96	RESABP Proportion of addresses that are abandoned residential units.	Mean = .081 SD = .138 Min = 0 Max = .723 α = .995
Residential dilapidation	AGDILAP Category rating based on interval sample of 8 residential addresses per block. Higher score indicates more of the attribute.	Mean = .471 SD = .266 Min = 0 Max = 1 α = .82	PAINTR Four category rating scale of the number of homes in need of exterior paint.	Mean = 2.959 SD = 1.648 Min = 0 Max = 5 α = .60

Dimension: Nonresidential Land Use

Concept	Variable Name and Description	Variable Statistics	Variable Name and Description	Variable Statistics
Proportion stores	STORPROP Proportion of addresses that were stores.	Mean = .007 SD = .025 Min = 0 Max = .167 α = .84	SFRVIP Proportion of addresses with viable stores.	Mean = .091 SD = .232 Min = 0 Max = .989 α = .989
Proportion other nonresidential land uses	NR2PROP Proportion of addresses that were nonresidential land uses other than vacant lots or stores.	Mean = .02 SD = .044 Min = 0 Max = .214 α = .91	NONRES2P Proportion of addresses with nonresidential land uses, excluding vacant lots, that are not stores.	Mean = .027 SD = .076 Min = 0 Max = .667 α = .994
Nonresidential dilapidation	NRDLPROP Proportion of nonresidential land uses in dilapidated condition.	Mean = .016 SD = .045 Min = 0 Max = .262	ABSTOREP Proportion of addresses with abandoned stores.	Mean = .01 SD = .04 Min = 0 Max = .286

own block, administered the reliability check by conducting the physical block survey for a random 10% of the blocks. From this 10% sample of the blocks, we calculated Cronbach's alpha, our measure of interrater reliability.

ANALYTIC APPROACH AND VARIABLES

Our central focus is to select observed variables representing nonresidential land use and observed variables representing physical deterioration, to construct two latent variables from these two sets of observed variables, and to find whether these two latent variables correlate with each other after controlling for error structures and ecological structure as needed.

We found it was not necessary to control for structural variation with our Philadelphia data, because race, stability, and class did not correlate significantly with the latent variables identified. The problem reduces to a congeneric measurement model (Jöreskog and Sörbom 1988, 10).[6] The factor analysis is *confirmatory* because we decided a priori which observed variable is associated with which latent variable. Variables representing physical deterioration and incivilities contribute solely to the latent variable for incivilities (Incivall). Variables representing nonresidential land use contribute solely to that latent variable (Nonres).

With the Baltimore data, we found that the structural variables correlated with the latent variables of interest; therefore, we conducted a full structural equation model. Each structural variable is assumed to represent, with error, an underlying latent structural variable. Each of these is allowed to correlate with the other structural variables and to influence the two latent variables of interest (Incivall and Nonres). Further, we assumed that the land-use mix on the block influences deterioration (Nonres → Incivall) and estimated this coefficient between the two latent variables.[7]

Reliable variables tapping physical deterioration that were available in both sites appear in Table 1: vandalism, litter, abandoned homes, and exterior condition of residential units.[8] For Baltimore, the scores on each block were based on the eight sampled addresses. For Philadelphia, the scores were based on category ratings for the entire block.

We used three variables to tap nonresidential land uses: The first variable was stores, and the second was nonresidential land uses other than stores or vacant lots.[9] These variables were converted to proportions using total addresses as the denominator. For Baltimore, the third variable was the proportion of nonresidential structures that were in dilapidated condition. For Philadelphia, the third variable was abandoned stores as a proportion of total addresses on the block.
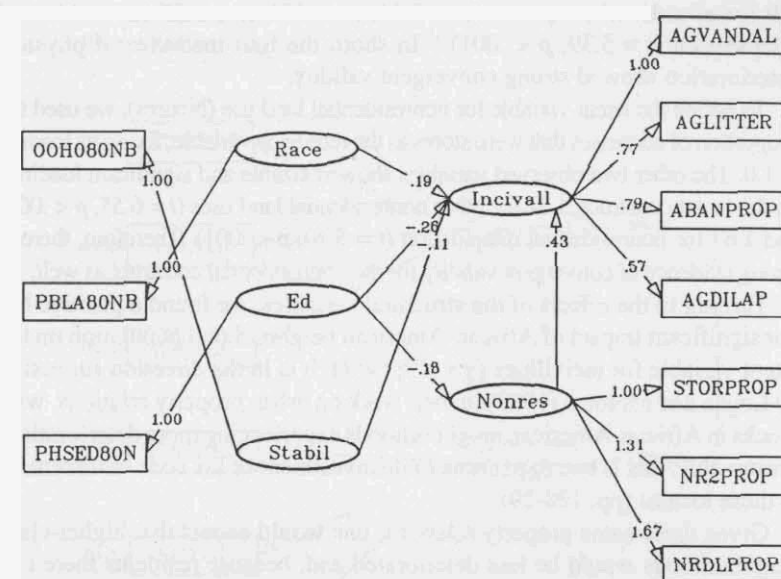
Figure 1: Relationships Between Social Structure, Latent Variable for Nonresidential Land Use and Latent Variable for Physical Incivilities Across Baltimore Street Blocks (n = 47)

NOTE: Latent variables in ellipses; observed variables in rectangles. Parameters not shown set to zero.

As the means and standard deviations in Table 1 show, several variables are highly skewed. Consequently, we treated the variables as ordinal and analyzed matrices of Kendall's tau-B coefficients.

RESULTS

BALTIMORE

The final model obtained for Baltimore appears in Figure 1, which shows standardized coefficients.[10] The model provides excellent fit to the sample matrix: $\chi^2(34) = 41.74$, $p = 0.17$, the goodness-of-fit index (GFI) = .98, and the adjusted goodness-of-fit index (AGFI) = .97.

When observed vandalism was used as the reference variable for physical deterioration, all three of the other indicators showed sizable and significant loadings on the latent construct (Incivall): .77 for litter ($t = 7.88$, $p < .001$);

.79 for abandoned properties ($t = 7.31$; $p < .001$); and .57 for residential dilapidation ($t = 5.39$, $p < .001$).[11] In short, the four measures of physical deterioration showed strong convergent validity.

To define the latent variable for nonresidential land use (Nonres), we used the proportion of addresses that were stores as the reference variable, fixing its loading to 1.0. The other two observed variables showed sizable and significant loadings on the latent construct: 1.31 for other nonresidential land uses ($t = 6.55$, $p < .001$) and 1.67 for nonresidential dilapidation ($t = 5.70$, $p < .001$). Therefore, there is strong evidence of convergent validity for the nonresidential construct as well.

Turning to the effects of the structural variables, we found a positive but nonsignificant impact of African-American neighborhood population on the latent variable for incivilities ($\gamma = .19$; $t < 1$). It is in the direction suggested by Logan and Molotch (1987) in their work on urban property relations, with blocks in African-American neighborhoods experiencing more deterioration. Presumably, this is due to patterns of disinvestment or lax code enforcement in these locales (pp. 128-29).

Given these same property relations, one would expect that higher-class neighborhoods would be less deteriorated and, because residents there can fight more effectively against zoning changes (Crenson 1983), more predominantly residential. We see that blocks in neighborhoods in which residents are more educated experience somewhat less physical deterioration ($\gamma = -.26$, $t = -1.34$, $p < .10$) and less nonresidential land use ($\gamma = -.18$, $t = -2.15$, $p < .05$).

Finally, there is a small negative impact of stability on nonresidential land use: In more stable neighborhoods, blocks have less nonresidential land use ($\gamma = -.11$, $t < -1$). Presumably, in neighborhoods with higher proportions of homeowners, residents can fight zoning changes to nonresidential land use more effectively.

Turning to the theoretical center of our inquiry, we found a significant and positive impact of nonresidential land use (Nonres) on physical deterioration (Incivall): $\beta = .43$ ($t = 2.68$, p [2-tailed] < .02). Blocks scoring higher on the latent construct representing nonresidential land use have more widespread deterioration. This coefficient supports the hypothesis described earlier based on resident-centered territorial functioning; it is opposite to the prediction made by Jacobs's (1961, 1968) model.[12]

Correlations between different aspects of ecological structure and between error terms were allowed for in the described model.[13]

PHILADELPHIA

The analysis of the data from the community of Logan in North Philadelphia was similar to the Baltimore analysis. We defined two latent constructs,
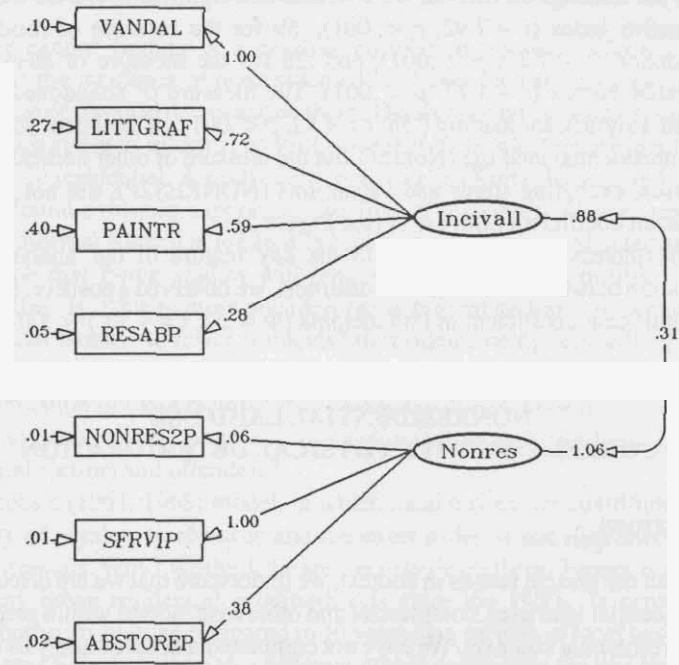
Figure 2:   Relationship Between Latent Variable for Nonresidential Land Use and Latent Variable for Physical Incivilities Across 116 Street Blocks From the Logan Neighborhood in Philadelphia
NOTE: Blocks with the sinking homes are not included in this analysis (see text note 4). Latent variables in ellipses; observed variables in rectangles. Parameters not shown set to zero. Model allows only one latent variable for nonresidential land use.

Incivall and Nonres. We used the same reference variables for each latent construct and assumed the observed variables correlated only with one latent construct. The only difference was that it was not necessary to include latent constructs for class-related dimensions in the Philadelphia analysis. None of the three (race, stability, or class) significantly influenced the latent constructs. The confirmatory solution provided a moderately close fit to the sample matrix, as shown by the fit measures (GFI = .84, AGFI = .74). However, a significant chi-square statistic shows that a significant lack of fit between the fitted model and the sample matrix remained, $\chi^2(18) = 196$, $p < .001$.

All but one of the observed variables loaded significantly on their respective latent construct. Incivall was as well defined by the Philadelphia data as it was by the Baltimore data; Nonres was less clearly defined by the Philadelphia data.

All the loadings on Incivall were sizable and significant: .72 for the litter and graffiti index ($t = 7.92$, $p < .001$), .59 for the measure of residential dilapidation ($t = 7.20$; $p < .001$), and .28 for the measure of abandoned residential homes ($t = 4.27$; $p < .001$). The measure of abandoned stores showed a significant loading (.38; $t = 4.82$, $p < .001$) on the latent construct for nonresidential land use (Nonres), but the measure of other nonresidential land uses, excluding stores and vacant lots (NONRES2P), did not show a significant coefficient (.06; $t < 1$) (see Figure 2).

Nevertheless, when we came to the key feature of our analysis, the correlation between the two latent constructs, we observed a positive, sizable, and significant coefficient in Philadelphia ($\Phi = .31$, $t = 4.30$, $p < .001$).[14]

NONRESIDENTIAL LAND USE CORRELATES WITH PHYSICAL DETERIORATION

LIMITATIONS

To put the present results in context, we underscore that we are discussing nonresidential land uses, commercial and otherwise, nested within predominantly residential contexts. We have not completed a detailed analysis of the types of businesses and stores present. These results may not apply to larger, more centrally located commercial areas that may or may not be located in a predominantly residential context. They may not apply to mixed-land-use blocks with very different types of businesses.

IMPORTANCE OF SITES

The locations discussed here, however, are important to urban residents. Numerous regional science studies confirm heavy use of local facilities by inner-city residents and low rates of "outshopping" by such residents (e.g., Hermann and Beik 1969). Current studies in locations such as Salt Lake City confirm high rates of in-neighborhood facility usage and high rates of within-neighborhood shopping, although the rates for the latter vary by type of item (Salt Lake Neighborhood Housing Services and the Fairpark Community Council 1992). In the locations studied here, data suggest a comparable pattern.[15] In short, although the results presented here may not apply to different types of commercial blocks, to mixed-use blocks in different types of contexts, or to locations where the nonresidential land uses represent different types of businesses than those examined here, the locations we examined are important to the routine activities of urban residents.

SEARCH FOR RELEVANT PROCESSES

Our central finding is a positive correlation, in two different cities, between the incidence of nonresidential land uses on a street block and the incidence of physical deterioration there. The significant association suggests that resident-based informal control is weaker on blocks that are less homogeneously residential. A study using police calls (Kurtz, Koons, and Taylor 1995) found evidence supporting this line of reasoning. Weaker resident-based informal control is implicit in higher levels of physical deterioration. We hope that future studies will pinpoint the factors responsible for the weakening. Is it due to more outsiders being present on less homogeneously residential blocks? to fewer residents? to residents being less willing to get to know one another on busier streets (Baum, Davis, and Aiello 1978)? or to a combination of these factors? In the language of routine-activity theory: Is it due to fewer natural guardians, more reluctant natural guardians, or more potential victims and offenders?

Jacobs's (1961, 1968) model, in which local businesses contribute to the density of regular street traffic and the street order, is not supported by the present results. Why? We think the answer may lie partly in changes occurring in many urban residential neighborhoods since the 1950s. In central-city neighborhoods now, as compared to 40 years ago, owners of local businesses are more likely to belong to a different ethnic group than the residents. For example, although Koreans run many small stores in Logan, most of the residents are African-American. This cultural distance between residents and shopkeepers probably makes it difficult for the shopkeepers to "decode" events occurring on the street (Merry 1981) and to contribute substantially to the street order. In addition, small businesses now, as compared to small businesses in the same location 40 years ago, may be less likely to have evening store hours. Therefore, in the evening hours, the spaces in front of these establishments can be readily appropriated by individuals who may not be block "regulars."

Because of such changes, the sidewalk in front of a store or a small business now, as compared to that same location 40 years ago, is probably covered by a weaker network of informal controls during the day and evening hours. Of course, other changes in these neighborhoods also may have contributed to a weaker contour of informal resident-based control in these locations and in other locations on a block.

Regarding policy, the results presented here may prove relevant to current concerns about community policing (Greene and Taylor 1988), crime hot spots (Sherman, Gartin, and Buerger 1989), and fear of crime (Lewis and Salem 1986). In recent years, numerous community policing efforts have

focused on reducing signs of physical deterioration on blocks. Our results suggest that such strategies might be enhanced by a recognition of the connection between physical incivilities and land use. Community police officers might be more effective in helping residents reduce incivilities on blocks without nonresidential land uses than on blocks with such land uses. Community police officers also might want to consider the residential or nonresidential characteristics of a block as they evaluate relative risk across a range of blocks for increases in disorder and signs of disorder.

Work on crime hot spots shows that some types of land uses, such as bars, are troublesome (Roncek and Bell 1981), that commercial locations in nonresidential contexts generate large numbers of calls for predatory crimes (Sherman, Gartin, and Buerger 1989, Table 5), and that residential street blocks with more nonresidential land uses have higher crime rates (Perkins et al. 1990). To fully understand the connections, we need longitudinal work linking crime, land uses, and changes in deterioration on street blocks. Such work would be difficult to complete given the slow rate at which land uses change from residential to nonresidential. Nevertheless, the current work generally suggests that urban officials may wish to carefully monitor zoning variance requests, business license requests, and code enforcement in neighborhoods at risk of increasing crime due to other factors because of the implications such decisions may have for informal social control and crime. Of course, scholars would need much more detailed information on effects of specific types of nonresidential mixes and specific business uses to assist these officials effectively.

In work on fear of crime, scholars link safety concerns with physical deterioration (e.g., Covington and Taylor 1991; Taylor, Shumaker, and Gottfredson 1985). Our results suggest that the decisions made by urban officials allowing or not allowing various nonresidential land uses may also have implications for residents' sense of personal vulnerability.

NOTES

1. In one study in which scholars appeared to test Jacobs's healthy-street, mixed-land-use model against the territorial, resident-centered model, Greenberg, Williams, and Rohe (1982) (see also Greenberg and Rohe 1984) examined the relationship between the composition of blocks in neighborhoods and the neighborhood crime rate, using information from six Atlanta neighborhoods. They found that "land use in low crime neighborhoods was both more homogeneous and more residential than was land use in high crime neighborhoods" (p. 153). For several reasons, however, the Atlanta study did not provide a *direct* test of the relative merit of the two models discussed earlier. Although land use was assessed at the block level, the researchers used census blocks, which comprise parts of four different

social groupings spread across four different street blocks rather than the units of interest here—street blocks. Second, the outcome, high or low crime, was assessed at the neighborhood level rather than at the block level. Third, the researchers did not separate out the effects of neighborhood circulation patterns, which also influenced crime, from the effects of land-use mix.

2. For details on sampling and physical assessment procedures, see Perkins, Meeks, and Taylor (1992).

3. At the block level, reliability for all items was excellent (see Perkins, Meeks, and Taylor 1992, Tables 1 and 2). For block-level social and physical characteristics, alpha$_{average}$ was .85, .94, and .89 for the different sections of the instrument; for the items based on sampled addresses, it was .89. In the analyses that follow, we will use $1 - \alpha$ as our measure of error variance.

4. In the southeastern corner of Logan is a 28-block area known as the *sinking homes section*. Buildings located in this area have been structurally deteriorating because of shifts in the land underneath the buildings. As a result, blocks in this area have been either entirely or partially abandoned. Because this represents a rather atypical urban problem, we report analyses excluding these blocks ($n = 116$ blocks). We have also completed analyses including these blocks (available from the first author upon request); they do not provide a substantively different set of findings.

5. Although the Baltimore data are from 1980 and the Philadelphia data are from 1990, our purpose in using the two sites is not comparative but, rather, to test external validity of etiological patterns observed.

6. Complete details of our analytic approach, error term estimation, and modeling procedures are contained in a technical report available upon request from the first author. We use instrumental variables estimation procedures in the analyses we report.

7. One reviewer suggested that physical deterioration or physical incivilities could influence land-use mix, leading to the conversion of residential to nonresidential units. Although this hypothesis is plausible, it represents a theoretical perspective different from the two being tested here. Another reviewer suggested that foot-traffic volume could lead, over time, to a block with more mixed land use and to a more physically deteriorated block. We find this hypothesis to be plausible also. Again, however, it is outside the two theoretical models we test here.

8. For Philadelphia, we used an index combining litter and graffiti.

9. Vacant lots were not included because the conceptual status of the variable was unclear. Vacant lots represent instances of both physical incivilities and nonresidential land use.

10. The two observed variables, NR2PROP and NRDLPROP, have loadings greater than 1.0 because STORPROP has a fixed loading of 1.0 on the latent variable (see Table 1 for definitions of the variables). This fixed loading "drives" the metric for the latent construct and, thus, the loadings of the other two observed variables.

11. We experimented with different reference variables for the two different constructs. No appreciable differences in results emerged.

12. This positive relationship does not emerge simply because Incivall and Nonres are both higher in neighborhoods in which residents are less educated. The indirect effect of education on Incivall via Nonres and the other structural variables (−.08) represents a small portion of education's total effect (−.34). The relationship is not spurious (Blalock 1979, 471) because it emerges even though education has a direct effect on both Incivall and Nonres.

13. In the phi matrix, we observed a significant negative correlation ($\Phi = -.39$; $t = -2.26$, p [two-tailed] $< .05$) between the proportion of the neighborhood population that was African-American in 1980 and the proportion of owner-occupied housing units. This connection is in line with current analyses of urban property relations. The model contained three significant or

near-significant error covariances: between vandalism and litter (–.43; $t = -1.48$), between abandoned property and vandalism (–.58, $t = -2.27$), and between abandoned property and dilapidation (–.42, $t = -2.04$).

14. Modification indexes suggested several error covariances. We retained two negative correlations that were significant: between the measure of viable stores (SFRVIP) and residential dilapidation (PAINTR) (–0.29; $t = -2.23$, $p < .05$) and between viable stores and residential abandonment (RESABP) (–0.20; $t = -1.83$, $p < .10$). We conducted an exploratory factor analysis with the Philadelphia data, allowing nonresidential land uses that were neither stores nor vacant lots to define a second, separate latent construct for nonresidential land use (Nonres2). This solution resulted in a markedly lower chi-square ($df = 16$) of 116 and somewhat better fit measures (GFI = .88; AGFI = .79). In this solution, physical deterioration (Incivall) and nonresidential land use (Nonres) remained significantly positively correlated ($\Phi = .29$; $t = 4.49$, $p < .001$). The correlation between Incivall and the second nonresidential latent construct, defined by other nonresidential uses (Nonres2), is nonsignificant ($\Phi = -.10$). Therefore, even when we allowed two latent constructs to capture nonresidential land use, we still found significant positive correlations between latent constructs for incivilities and store-related nonresidential land use.

15. In a survey of residents in Logan in Philadelphia, Greene, Koons, and Kurtz (1992) found that more than 73% of households reported using the local stores at least once a week or more and 25% reported using them at least four times a week on average. A 1982 survey of Baltimore households in a random sample of 66 neighborhoods revealed that 33% of respondents shopped in their neighborhood, 60% attended church in their neighborhood, and 60% used parks in their neighborhood (Taylor 1994).

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