POVERTY TRAPS

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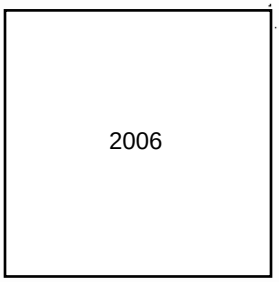

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Chapter 7

DURABLE INEQUALITY

Spatial Dynamics, Social Processes, and the Persistence of Poverty in Chicago Neighborhoods

Robert J. Sampson and Jeffrey D. Morenoff

POVERTY CAN TRAP ENTIRE NATIONS and social groups, not just individuals. The persistence of poverty among social groupings is perhaps the more intriguing and surprisingly understudied puzzle, especially in the case when it is not necessarily the same individuals that make up the groups over time (see also Tilly 1998). In this chapter we consider urban neighborhoods as one such social grouping and investigate the durable consequences of concentrated poverty.

To set the context, we begin with a descriptive and deceptively simple question: how much stability and change is there in concentrated neighborhood inequality over time? The question here is not how individuals change, but whether and to what extent the geographic concentration of poverty became increasingly entrenched in certain urban neighborhoods. For theoretical reasons we focus on the period 1970 to 1990 when inner-city poverty was argued to have undergone dramatic change. Indeed, Wilson (1987) and others (e.g., Jargowsky 1997) have stressed the "social transformation" of the urban landscape with regard to changes in the concentration of poverty during the 1970s and 1980s. Yet this chapter shows that the more striking trend is the *persistence* of poverty over time. Put simply, while the decade of the 1970s did see substantial increases in poverty, there is decidedly more variation *between* neighborhoods than there is change *within* neighborhoods over time. This finding gives support to the notion of poverty traps that possess durable features. We also find that neighborhood change is highly asymmetric—once a neighborhood passes a certain threshold of poverty or racial composition, any further change is likely to be in the direction of its becoming increasingly poor and black.

Once the basic patterns of durable inequality are uncovered, we then turn to the multidimensional picture of how neighborhoods get locked

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into trajectories of poverty. Vulnerability to increases in poverty from 1970 to 1990 is systematically structured by the initial conditions of neighborhoods in 1970, including not just poverty but racial isolation and low home ownership. Perhaps more important, we build into this analysis a direct focus on spatial and temporal dynamics as predictors. It turns out that changes in race-ethnic composition and home ownership, along with geographic proximity to changes in ghetto poverty, are also consequential for understanding the deepening concentration of poverty. The spatial findings reinforce the importance of thinking about inequality in relational rather than essentialist terms. That is, despite the vulnerabilities or assets associated with a neighborhood's internal characteristics, its rate of poverty change is directly linked to changes in the surrounding ecological network of neighborhood poverty.

The third and final section turns to the mechanisms that reinforce poverty traps, and by implication the consequences of durable inequality. Here we move outside the "black box" of poverty to consider its connection to important social processes such as mutual trust, shared expectations for social control, and alienation. If path dependence or persistent poverty have causal relevance at the neighborhood level, presumably it is because they generate self-reinforcing processes that further "lock in" poverty (Bowles 2000; Pierson 2000). To test such models requires dynamic models and data that no one, to our knowledge, has assembled. Nevertheless, we can examine some reasonable approximations that may be generative of future research. Our general argument is that concentrated poverty is socially reproduced in part by undermining key processes of community organization, which we assess by linking structural data from the census on stability and change with an original survey of 8,872 residents of Chicago neighborhoods. Controlling for the socio-demographic location of individual respondents, we find that persistent poverty and increases in poverty from 1970 to 1990 predict lower collective efficacy and higher moral cynicism of neighborhood residents in 1995—a span of some twenty-five years. Although ambiguities remain, this finding is consistent with the scenario that the structural dynamics of concentrated urban poverty generate systemic social processes that may contribute to the stigmatization of urban neighborhoods and a further deepening of poverty. We conclude with thoughts on how such models might be more rigorously tested in future work.

The Persistence of Poverty Regimes

The facts motivating our first set of questions are pretty basic and presumably noncontroversial. Most urban analysis would agree that poverty concentration has increased in recent decades. For example, Wilson (1987)

argues that the geographical concentration of low-income residents, especially of African Americans and female-headed families, stems from macroeconomic changes related to the deindustrialization of central cities and the out-migration of middle-class residents. Massey and Denton (1993) argue that the greater the race/class segregation in a metropolitan area, the fewer the neighborhoods that can absorb economic shocks and the more severe the resulting concentration of poverty. In either case, economic stratification by race and residence fuels the neighborhood concentration of cumulative forms of disadvantage, intensifying the social isolation of low-income, minority, and single-parent residents from resources that could support collective social control (see also Jargowsky 1997).

Most research on the "Wilson-Massey" debate has attempted to assess whether the out-migration of the black middle class or racial segregation best explain the social transformation of urban communities. Of course it turns out that both mechanisms appear to have been operative, with the weight of recent evidence pointing to differential out-migration of the black nonpoor (Quillian 1999). In this chapter we do not attempt a causal analysis that adjudicates between these interpretations. Instead we step back and ask, just what has been transformed and by how much? The metaphor of social transformation implies radical change, a repositioning of neighborhoods in the ecological system. What do the data tell us?

We begin with some basic illustrations of how neighborhoods in Chicago have changed over the past three decades with respect to poverty and racial/ethnic composition. We conceptualize neighborhood as an ecological subsection of a larger community—a collection of both people and institutions occupying a spatially defined area that is conditioned by a set of ecological, socio-demographic, and often political forces. Operationally, we use the neighborhood boundaries that were constructed for the Project on Human Development in Chicago Neighborhoods (PHDCN), an ongoing study explicitly designed to examine social context. The PHDCN research team combined Chicago's 847 populated census tracts to create 343 "Neighborhood Clusters" (NCs). The overriding consideration in forming NCs was that they should be ecologically meaningful units composed of geographically contiguous census tracts and should be internally homogeneous with regard to distributions on a variety of census indicators. The study settled on an ecological unit smaller than the established 77 community areas in Chicago (average size = 40,000) but large enough to approximate local neighborhoods—on average, around 8,000 people. Major geographic boundaries (e.g., railroad tracks, parks, freeways), knowledge of Chicago's local neighborhoods, and cluster analyses of census data were used to guide the construction of relatively homogeneous NCs with respect to distributions of racial-ethnic mix, SES, housing density, and family organization.

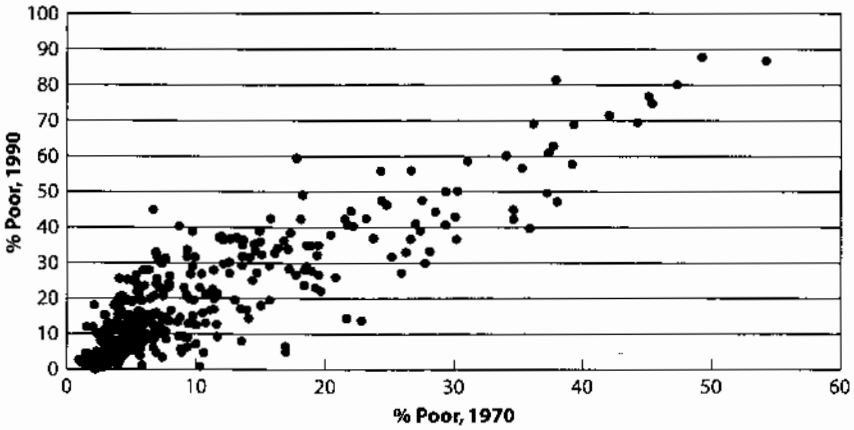

Figure 7.1. Persistence of poverty, 1970–1990: Chicago Neighborhood Clusters

Our initial analysis is based on Census data from 1970 to 1990. Figure 7.1 tells a story of both stability and change in neighborhood poverty.[1] On the one hand, there is a very high correlation ($r = .87$) between neighborhood poverty rates in 1970 and 1990, as evidenced by the strong linear relationship on the scatterplot. Neighborhoods that were poor in 1970 generally continued to be poor in 1990. In fact, in supplemental analysis, we decomposed the total variance in neighborhood poverty rates over the decades 1970, 1980, and 1990 and found that most of this variance (67%) is due to differences *between* neighborhoods rather than differences over time within neighborhoods, implying that between-neighborhood differences in poverty were quite stable over time. On the other hand, there was also significant change during this time period, as the poverty rate for the average neighborhood increased from 11 percent in 1970 to 20 percent in 1990. This change was even more pronounced at the upper tail of the neighborhood poverty distribution. The 75th percentile of the distribution corresponded to a poverty rate of only 14 percent in 1970, but by 1990 it had more than doubled, increasing to 30 percent. In short, there was a dramatic growth in neighborhood poverty between 1970 and 1990, but despite this change, there was stability in the relative rank order of neighborhoods vis-à-vis poverty. Neighborhood poverty was both a persistent and increasingly prevalent condition.

To bring the paths of neighborhood change into sharper relief, we analyze decade-to-decade change in neighborhood poverty in table 7.1, using

[1] We measure neighborhood poverty as the percentage of families in poverty and refer to this measure hereafter as either neighborhood poverty or the neighborhood poverty rate.

TABLE 7.1
Neighborhood "Mobility" in Poverty, 1970–1990 (Row Percentages in Parentheses)

Neighborhood Poverty 1970	*Neighborhood Poverty 1980*						
	0–4.9%	*5–9.9%*	*10–19.9%*	*20–29.9%*	*30–39.9%*	*40%+*	*Total*
0–4.9%	66 *(58.4%)*	33 (29.2%)	12 (10.6%)	2 (1.8%)	0 (0.0%)	0 (0.0%)	113 (100.0%)
5–9.9%	5 (4.6%)	*34 (31.2%)*	53 (48.6%)	15 (13.8%)	2 (1.8%)	0 (0.0%)	109 (100.0%)
10–19.9%	0 (0.0%)	5 (7.1%)	*14 (20.0%)*	34 (48.6%)	15 (21.4%)	2 (2.9%)	70 (100.0%)
20–29.9%	0 (0.0%)	0 (0.0%)	3 (11.5%)	*1 (3.8%)*	15 (57.7%)	7 (26.9%)	26 (100.0%)
30–39.9%	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	*4 (23.5%)*	13 (76.5%)	17 (100.0%)
40%+	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	7 *(100.0%)*	7 (100.0%)
Total	*71* (20.8%)	*72* (21.1%)	*82* (24.0%)	*52* (15.2%)	*36* (10.5%)	*29* (8.5%)	342 (100.0%)

TABLE 7.1 (*Cont.*)

Neighborhood Poverty 1980	*Neighborhood Poverty 1990*						
	0–4.9%	*5–9.9%*	*10–19.9%*	*20–29.9%*	*30–39.9%*	*40%+*	*Total*
0–4.9%	56	10	5	0	0	0	71
	(78.9%)	(14.1%)	(7.0%)	(0.0%)	(0.0%)	(0.0%)	(100.0%)
5–9.9%	8	*29*	32	3	0	0	72
	(11.1%)	*(40.3%)*	(44.4%)	(4.2%)	(0.0%)	(0.0%)	(100.0%)
10–19.9%	2	11	*45*	20	2	2	82
	(2.4%)	(13.4%)	*(54.9%)*	(24.4%)	(2.4%)	(2.4%)	(100.0%)
20–29.9%	0	0	7	*24*	19	2	52
	(0.0%)	(0.0%)	(13.5%)	*(46.2%)*	(36.5%)	(3.8%)	(100.0%)
30–39.9%	0	0	0	5	*18*	13	36
	(0.0%)	(0.0%)	(0.0%)	(13.9%)	*(50.0%)*	(36.1%)	(100.0%)
40%+	0	0	0	0	4	*25*	29
	(0.0%)	(0.0%)	(0.0%)	(0.0%)	(13.8%)	*(86.2%)*	(100.0%)
Total	*66*	*50*	*89*	*52*	*43*	*42*	342
	(19.3%)	*(14.6%)*	*(26.0%)*	*(15.2%)*	*(12.6%)*	*(12.3%)*	(100.0%)

the following six-category typology of neighborhood poverty: 0–4.9 percent, 5–9.9 percent, 10–19.9 percent, 20–29.9 percent, 30–39.9 percent, and 40 percent or above. Like mobility tables, the cross-tabulations displayed in table 7.1 depict inflows and outflows among poverty categories over time. The upper panel of table 7.1 displays patterns of neighborhood change from 1970 to 1980, and the lower panel covers the time period from 1980 to 1990. The trend toward more concentrated neighborhood poverty is reflected in the margins of both tables. Whereas in 1970 only 7 of the 342 NCs (2.0%) had poverty rates of 40 percent or above (a conventional threshold for defining "ghetto poverty" areas), this category expanded over time to include 29 NCs (8.5%) in 1980 and 42 (12.3%) in 1990. Thus, the number of high-poverty areas increased sixfold from 1970 to 1990. In percentage terms, the higher poverty categories grew more during the 1970s, but the growth in concentrated poverty continued during the 1980s. Perhaps the most distinctive feature of neighborhood change over both decades was its asymmetrical nature: neighborhoods tended either to stay in the same poverty category (i.e., cells on the main diagonal) or move to a higher poverty category (i.e., cells to the right of the main diagonal) over time, but "upgrading" (i.e., cells to the left of the main diagonal) was quite rare.

Given this asymmetry, it is still important to distinguish between which neighborhoods remained relatively stable in terms of poverty and which got worse over time. We now turn our attention toward understanding change in poverty, rather than the level of poverty at any given period, as our main outcome of interest. Since the trends depicted in table 7.1 toward higher poverty were pervasive across both decades, we focus on the combined time period, 1970–1990. One important question about change in poverty is how it is related to "initial" conditions. In other words, having established that neighborhood poverty is a persistent condition, we now ask whether the neighborhoods that experienced the largest increases in poverty between 1970 and 1990 were those that were already very poor or those that were in transition toward becoming poor.

Figure 7.2 addresses this question by plotting the neighborhood poverty rate in 1970 against the change score (% poor in 1990 – % poor in 1970). The graph shows that there is a positive and moderately strong correlation ($r = .52$) between the level of poverty in 1970 and change between 1970 and 1990. That is to say, poverty increased the most among those neighborhoods that were already poor in 1970. In this regard, neighborhood poverty appears to represent a spiraling trap. For example, neighborhoods that were already 40 percent poor in 1970 experienced an average poverty increase on the order of 31.6 percentage points between 1970 and 1990. Figure 7.2 also shows that the relationship between initial conditions and change was not uniform across all neighborhoods. Instead, it is

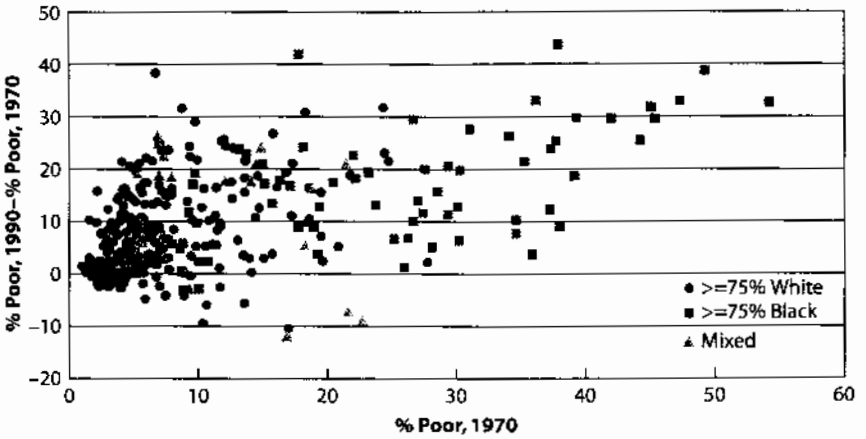

Figure 7.2. Initial condition and change in poverty, 1970–1990: Chicago Neighborhood Clusters

conditioned by a third factor, racial composition. The association was strongest among neighborhoods that were at least 75 percent black in 1970 ($r = .61$) but weaker among neighborhoods that were at least 75 percent white ($r = .39$), and nonsignificant among other "mixed" neighborhoods ($r = -.08$).[2] Thus, the trap of neighborhood poverty was particularly nettlesome for poor black neighborhoods.

To further elaborate the backdrop of racial segregation against which the changes in poverty occurred, we plot the percentage of a neighborhood's population that was black in 1970 against changes in percent black from 1970 to 1990 (% black 1990 – % black 1970) in figure 7.3. This graph shows that racial change is even more asymmetric than poverty change—the amazing lack of observations in the lower-right quadrant of the graph indicates that none of the NCs that had large percentages of black population in 1970 lost shares over time. In fact, there appears to be a clear threshold effect of around 40 percent black, above which all neighborhoods either maintained or increased their share of black population.

[2] This "mixed" category does include one neighborhood that was 79.7 percent Hispanic in 1970. However, no other neighborhoods in this category had a 75 percent majority of any one racial/ethnic group. If this one Hispanic neighborhood, which increased from 18.9 percent poor in 1970 to 35.1 percent poor in 1990, is removed and the correlation between poverty in 1970 and change between 1970 and 1990 is recalculated for the mixed category, the correlation becomes even more negative ($r = -.12$), but still not significant, in part because of the small sample size ($n = 31$). Nonetheless, this analysis suggests that the dynamics of neighborhood change were somewhat different in mixed neighborhoods; we intend to investigate this issue further in future research.

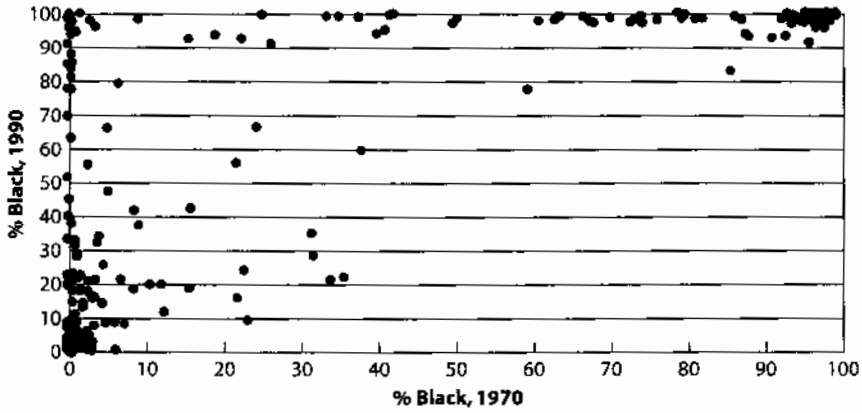

Figure 7.3. Asymmetry of racial change, 1970–1990: Chicago Neighborhood Clusters

As was the case with poverty, figure 7.3 tells a story of change within a stable ecological system: there were great shifts in neighborhood racial composition from 1970 to 1990, but neighborhoods that were initially black stayed that way over time, while at the same time many areas of the city remained off limits to blacks. In light of this pattern, it comes as no surprise that as of 1990 Chicago had the distinction of being one of the most racially segregated cities in America (Massey and Denton 1993).[3]

Another key to understanding the paths of neighborhood change with regard to poverty is geography. Here, the motivating question is whether changes in neighborhood poverty from 1970 to 1990 occurred in a spatially random fashion or whether they were concentrated within certain geographic areas of the city. If location in space didn't matter, but only a neighborhood cluster's own history of poverty did, then a good predictor of a neighborhood's 1990 poverty rate would be its 1970 poverty rate and variations in poverty from the predicted rate would not have any spatial pattern. To test this hypothesis, we first estimate the equation:

$$\text{Poverty90} = \alpha + \beta^{*}\text{Poverty70} + \varepsilon.$$

The expression $\alpha + \beta^{*}$Poverty70 is the 1990 *predicted poverty rate* and ε is the deviation or *residual* from the predicted rate. The residual reflects the

[3] We would note, however, that segregation seems to increase with increasing percent black in a metropolitan area. Many cities in places such as Maine, New Hampshire, and Montana have extremely low segregation levels, but then again these places are also almost lily white. We would be hard pressed to consider them racially progressive.

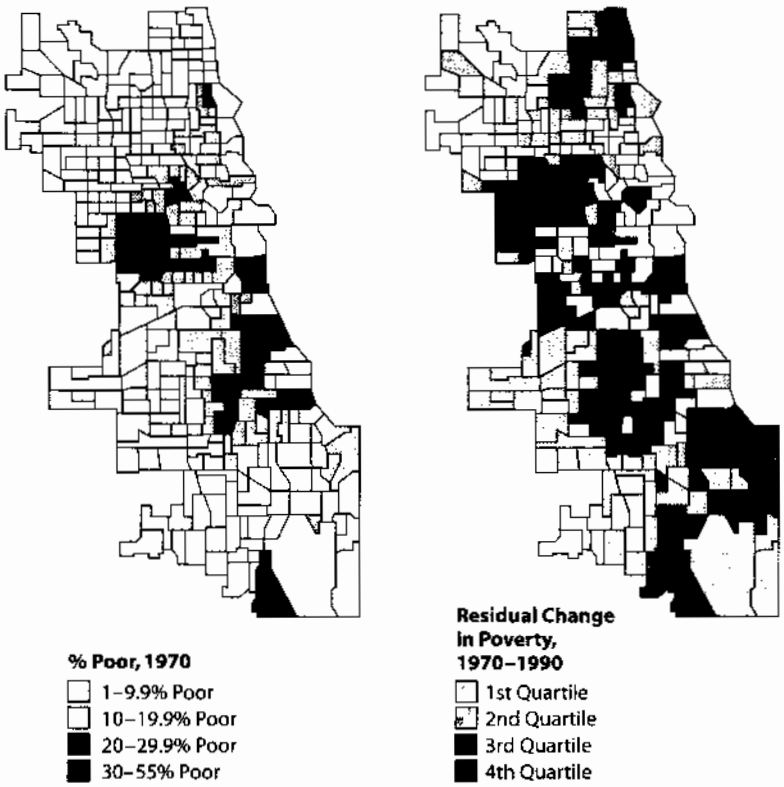

Figure 7.4. The geography of neighborhood poverty (1970), poverty change (1970–1990), and racial composition (1970): Chicago Neighborhood Clusters

amount of change in a given neighborhood's poverty that is unaccounted for or unexplained by its initial level of poverty.[4] We plot the residual for each neighborhood cluster in the map in the right panel of figure 7.4, and in the left panel the map displays the spatial distribution of the level of poverty in 1970.

Neighborhoods where the population was at least 75 percent black in 1970 were also very poor (shaded in dark gray). Initial concentrations of poverty—displayed in the 1970 map—were geographically clustered at the core of Chicago's black belt, in community areas such as Grand Boulevard, Oak-

[4] Residual change scores have the advantage over raw change scores of being statistically independent of initial levels of poverty. In addition, since all NCs in Chicago were used to estimate the regression equation upon which the residuals are computed, these change scores incorporate the dynamics of the entire ecological system (see also Bursik and Webb 1982).

land, Woodlawn, and Englewood to the south; and Garfield Park and North Lawndale along the western corridor. The second map displays residual change in poverty from 1970 to 1990. The change map shows that between 1970 and 1990 relative increases in poverty were found, not at the core of Chicago's black ghetto, but in neighborhoods along the periphery, which pushed further outward with each succeeding decade (see Morenoff and Sampson 1997). Side-by-side, these two maps fit together like a jigsaw puzzle, revealing that most of the "unexpected" change in poverty was occurring in close geographic proximity to high initial rates of poverty.

Explaining Poverty Trajectories

Our next set of analyses tackles the multidimensional predictors of change in neighborhood poverty. In so doing, we pay special attention to two factors highlighted in our descriptive analyses: *initial conditions* and the *spatial dynamics* of poverty. Our dependent variables are the two types of change scores described above: the "raw" change score used in figure 7.2 (% poor 1990 – % poor 1970) and residual change score used in figure 7.4. In modeling raw change, we use the 1970 poverty rate as a predictor to examine the extent to which neighborhood poverty is a path-dependent process. Based on prior research we include a core set of other predictors in this model: 1970 Census measures of %black, %Hispanic, %owner-occupied homes, as well as raw change between 1970 and 1990 in %black, %Hispanic, and %owner occupied. The residual change score already filters out the effect of path dependence, leaving us to model the "unexpected" change in poverty between 1970 and 1990.[5] We include the same control variables, only here all 1970–1990 change measures are expressed as residual change scores. Thus, our statistical models allow us to assess the robustness of the overall process by predicting either raw change or residual change as a function of initial level and change in racial/ethnic composition and owner occupancy, controlling for initial poverty status.

Building on the exploratory analysis presented in figure 7.4, we also address the notion of *spatial dependence* in our statistical models. In this case, spatial dependence refers to the idea that change in a given neighborhood's poverty rate is conditional on poverty changes in surrounding

[5] The residual change model is equivalent to modeling %poor in 1990 as a function of %poor in 1970 and other control variables. Although this alternative formulation may be a more intuitive way of modeling the same phenomenon, we decided to use the residual scores instead because of our additional interest in the spatial dynamics of change (see more below). Using the residual change measure as our dependent variable allows us to model the spatial dependence of change itself, whereas under the alternative formulation we would be modeling the (static) spatial dependence of % poor in 1990, which theoretically is less meaningful.

neighborhoods. Such dependence could come about if changes in poverty are the result of ecological dynamics that extend beyond the boundaries of a given neighborhood, such as the distribution of institutional resources that influence housing decisions—such as the quality of local schools—and other factors that trigger patterns of residential mobility, such as violent crime (Morenoff and Sampson 1997). The important theoretical point is that neighborhoods should not be treated as islands unto themselves, as they are in conventional regression analyses, because it is likely that factors affecting poverty change in one place also affect changes in nearby places, much like a ripple or diffusion process.

We estimate spatial dependence by constructing "spatially lagged" versions of change in poverty. We define y_i as the change in poverty from 1970 to 1990 (either raw or residual change) in NC_i, and w_{ij} as element i,j of a spatial weights matrix that expresses the geographical proximity of NC_i to NC_j (Anselin 1988, 11). For a given observation i, a spatial lag, defined as $\Sigma_j w_{ij} y_j$, is the weighted average of poverty change in neighboring locations.[6] The weights matrix is expressed as first-order contiguity, which defines neighbors as those NCs that share a common border. Thus, $w_{ij} = 1$ if i and j are contiguous, 0 if not. We then test formally for the independent role of spatial dependence in a multivariate model by introducing the spatial lag as an explanatory variable. The spatial lag regression model is defined as

$$y = \rho Wy + X\beta + \varepsilon, \tag{1}$$

where y is an N by 1 vector of observations on the dependent variable; Wy is an N by 1 vector composed of elements $\Sigma_j w_{ij} y_j$, the spatial lags for the dependent variable; ρ is the spatial autoregressive coefficient; X is an N by K matrix of exogenous explanatory variables with an associated K by 1 vector of regression coefficients β; and ε is an N by 1 vector of normally distributed random error terms, with means 0 and constant (homoskedastic) variances.[7]

A common but misleading interpretation of ρ is that for a given neigh-

[6] Spatial dependence may also be treated as a "nuisance," in the form of a spatial error model (Anselin 1988). The spatial lag model was chosen because it conforms to our theoretical approach that specifies spatial dependence as a substantive phenomenon rather than merely a nuisance (see also Tolnay et al. 1996). In all cases shown in the tables, there was no remaining spatial error dependence once the lag model was specified.

[7] This model is often referred to as the simultaneous spatial autoregressive model because the presence of the spatial lag is similar to the inclusion of endogenous explanatory variables in systems of simultaneous equations. The spatial lag parameter can be interpreted as the estimated effect of a one-unit change in the scale of the original variable from which it was created. Estimates of the spatial proximity models were derived using "SpaceStat" (Anselin 1995).

borhood, *i*, it simply represents the effect of a one-unit change in the average rate of change of *i*'s first-order neighbors on the poverty change rate of *i*. This interpretation would seem to suggest a diffusion process, whereby a high rate of "ghetto formation" in one neighborhood diffuses outward and affects the growth in poverty in surrounding neighborhoods. However, the interpretation of ρ as a pure diffusion (or feedback) mechanism—the effect of a one-unit change in Wy on y—is incorrect and does not capture the complexity of the spatial process specified in equation (1). By extending the logic of equation (1), we can demonstrate that the spatial lag model also incorporates the values of the measured X variables and the ε term (i.e., unmeasured characteristics) in spatially proximate neighborhoods. According to equation (1), the value of y at location i depends on the values of X and ε at location i and on values of y in i's first-order neighbors. In turn, the first-order neighbors' values of y are functions of X and ε in i's first-order neighbors and y in i's *second*-order neighbors, and so on. This process continues in a steplike fashion, incorporating the neighborhood characteristics of successively higher-order neighbors of i (see also Tolnay et al. 1996), so that a change in X or ε at location i influences not only the value of y at location i but also (indirectly) at all other locations in Chicago. This spatial process can be expressed mathematically by rewriting equation (1) as follows:

$$\begin{aligned} y = {} & X\beta + \rho WX\beta + \rho^2 W^2 X\beta + \cdots + \rho^m W^m X\beta \\ & + \varepsilon + \rho W\varepsilon + \rho^2 W^2 \varepsilon + \cdots + \rho^m W^m \varepsilon, \end{aligned} \tag{2}$$

where $m \to \infty$. Equation (2) is also known as the "spatial multiplier" process, because it shows that the spatial regression model treats spatial dependence as a sort of ripple effect.[8] The ρ coefficient from the spatial lag model thus captures spatial "exposure" to the observed (X) variables, spatial exposure to unobserved predictors, and endogenous feedback in poverty change. Similar to the inclusion of endogenous explanatory variables in systems of simultaneous equations, we estimated the spatial lag models with maximum likelihood (Anselin 1995).

The results for the spatial lag models of raw change and residual change, displayed in table 7.2, show that consistent findings emerge across the two specifications of change. First, poverty change appears to be both a path-dependent and spatially dependent process. The path dependence is re-

[8] Because ρ is multiplied by the β coefficient for each X variable in equation (2), and $0 \le \rho \le 1$, it is possible to think of ρ as the rate at which the "effects" of each X variable are "discounted" in contiguous neighbors. Thus, if $\rho = .50$, then the effects of the average level of X in the first-order neighbors (Wx) will be half as strong as they are in the focal neighborhood. In the second-order neighbors, the effect will be reduced by one-quarter the size of β ($.50^2 = .25$), and so on for each successive order of contiguity.

TABLE 7.2
Maximum Likelihood Spatial Regression Models of Change in Poverty, 1970–1990

	Raw Change in %Poor 1970–1990		*Residual Change in %Poor 1970–1990*	
	Coeff.	*Std. Err.*	*Coeff.*	*Std. Err.*
%Poor 1970	0.25	(0.06)**		
Spatial Dependence	0.27	(0.06)**	0.31	(0.06)**
%Black 1970	0.04	(0.01)**	0.01	(0.01)
Change (raw/residual) %Black 1970–90	0.14	(0.02)**	0.14	(0.02)**
%Hispanic 1970	–0.01	(0.03)	0.03	(0.03)
Change (raw/residual) %Hisp 1970–90	0.11	(0.02)**	0.12	(0.02)**
%Owner Occupied 1970	–0.12	(0.02)**	–0.06	(0.01)**
Change %Own Occ 1970–90	–0.34	(0.06)**	–0.26	(0.05)**
Intercept	6.03	(1.56)**	2.11	(0.89)*
R^2	0.62		0.47	

** $p < .01$; * $p < .05$

flected in the significant coefficient for %poor in 1970 on raw change in poverty. The spatial dependence coefficient is also highly significant in both models, suggesting poverty change in one place is conditioned by similar changes in nearby places. Both models also imply that neighborhoods that experienced greater increases in percent black between 1970 and 1990 experienced significant growth in poverty change over that time period, but prior initial concentrations of black population were associated only with raw poverty change, not residual change. This finding dovetails with the residual change map in figure 7.4, which showed that most poverty change occurred around rather than in Chicago's traditional black belt. The models also suggest that owner occupancy acts as a buffer against poverty—higher prior levels and change in owner occupancy were both associated with significant declines in poverty over time. The initial distribution of the Hispanic population was not a significant predictor of poverty change in either model, but increases in Hispanic composition over time were associated with growing poverty rates. This implies that the substantial inflow of Hispanic migrants to Chicago from 1970 to 1990 (most of it occurring from Mexican migration) does explain part of the increase in neighborhood poverty over time.

CONSEQUENCES OF INEQUALITY

Now that we have a reasonable sense of temporal and spatial dynamics, the third part of our analysis tackles the legacy of durable inequality for

key social processes in urban neighborhoods. This analysis speaks most directly to the idea of neighborhood poverty traps. We begin with a focus on how poverty undermines mechanisms of social organization in modern cities that may be facilitated by, but do not require, strong (or dense) ties and associations.

Erosion of Collective Efficacy

As Warren (1975, 50) noted some time back, the common belief that neighborhoods have declined in importance as social units "is predicated on the assumption that the neighborhood is exclusively a primary group and therefore should possess the 'face-to-face,' intimate, affective relations which characterize all primary groups." Rejecting this outmoded assumption about the function of local communities in mass society, Sampson et al. (1997) highlighted the combination of a working trust and shared willingness of residents to intervene in situations that bear on social order and the sustainability of communities. This linkage of trust and cohesion with shared expectations for control was defined as "collective efficacy." We argued that just as self-efficacy is situated rather than global (one has self-efficacy relative to a particular task), a neighborhood's efficacy exists relative to specific tasks such as maintaining public order.

Viewed through this theoretical lens, collective efficacy is a task-specific construct that highlights shared expectations and mutual engagement by residents with respect to issues of social control (Sampson et al. 1999). Moving from a focus on private ties to social efficacy signifies an emphasis on shared beliefs in neighbors' conjoint capability for action to achieve an intended effect, and hence an active sense of engagement on the part of residents. As Bandura (1997) argues, the ultimate meaning of efficacy is captured in expectations about the exercise of control, elevating the agential aspect of social life over a perspective centered on the accumulation of resources. This conception is consistent with the redefinition of social capital by Portes and Sensenbrenner as "expectations for action within a collectivity" (1993, 1323).

We suggest that collective efficacy, like social capital, is endogenous to structural and cultural contexts (Bourdieu 1986). Sampson et al. (1997) argue that extreme resource deprivation and racial exclusion act as a centrifugal force that hinders collective efficacy. Even when personal ties are strong in areas of concentrated disadvantage, daily experiences with uncertainty, danger, and economic dependency are likely to reduce expectations for taking effective collective action (Woolcock 1998, 207). Wilson's (1987) "socially isolated" areas, for example, are thought to be characterized by dense personal ties that are nonetheless disconnected from the capacity to capture resources from the larger society. Lack of collective capacity in turn renders a neighborhood vulnerable to further decay and

a relative lack of desirability in the pecking order of places to live. Therefore, we hypothesize that if concentrated poverty serves as a trap, it does so partly through a "vicious circle" whereby collective efficacy is undermined, itself setting in motion a cascading set of disadvantages (outmigration, violence) that contribute to deepening and reinforcing poverty. We are not able to model these feedback processes, but we can take a first step by looking at the predictive effects of initial conditions and change in poverty on later collective efficacy. If these prove consequential, there is reason to explore more deeply the connection of declines in collective efficacy with reciprocal declines in the social position of neighborhoods and ultimately the stratification of places.[9]

"Anomie" and Cynicism

Our focus on another outcome draws inspiration from the classic Durkheimian notion of anomie—a state where the rules of the dominant society, and hence the legal system, are no longer perceived to be binding in a community or for a population subgroup (Kapsis 1978, 1139). Anomie in this sense is conceived as part of a social system and not merely a property of the individual, breeding a sense of normlessness, perceived lack of control, and ultimately moral cynicism about the rules of the society and their application, regardless of individual values. A key ingredient of cynicism is lack of trust in the larger society. While conceptually different, there is thus an analogy between the emphasis in collective efficacy on active control and trust in neighbors with the idea that underlying cynicism is a lack of trust in societal institutions.

There are strong theoretical reasons to expect that moral and legal cynicism are consequences of deprivation. Bullough (1967) and Kapsis (1978) suggest that members of economically and racially isolated communities, especially those least able to exercise political influence to obtain community services, are more likely than others to report alienation and power-

[9] There are alternative interpretations of how neighborhoods become trapped in poverty, the most common one being the differential selection of individuals into and out of neighborhoods. Poor neighborhoods are often seen as undesirable, especially with respect to housing (Galster 1987), and so it follows that richer individuals are better able to capitalize on the desire for living in better endowed neighborhoods. Such a natural "sorting" process would imply that poverty changes are unevenly spread throughout the city. On the other hand, racial segregation is clearly a barrier to the pure selection argument (Massey and Denton 1993)—neighborhoods may be said to select individuals as well, constraining their sorting decisions. Moreover, our theoretical argument implies that neighborhoods that are the poorest have the least collective capacity to counter threats to neighborhood quality, and so their public spaces, local government services, level of crime, and rate of housing abandonment will make them the least desirable neighborhoods and increase their stigma, leading to further decline. As noted earlier, the data needed to fully disentangle these processes are not available (for a discussion of different approaches and an assessment of the evidence on migration, see Quillian 1999).

lessness. Sampson and Bartusch (1998) argue that concentrated poverty fosters a sense of cynicism and detachment from notions about self- and societal control. There is also speculation in the literature on poverty traps that attenuation in perceived locus of control might be one of the causal links that serves to reinforce poverty (Bowles 2000). It follows that pronounced cynicism and anomie set in motion a self-fulfilling prophecy of sorts; to the extent that communities maintain a reputation or actual conduct that sets them apart from striving for societal success in traditional ways, their economic status will be further undermined.

There is a vast literature on the psychometric measurement of individual differences in "anomia" (the individual-level analog to social anomie). The Srole (1956) anomia scale, for example, has generated an entire body of validation research (see, e.g., Kapsis 1978). By contrast, we are concerned here with neighborhood differences in anomie-like perceptions of moral and legal cynicism (see also Wilson 1971). As Claude Fischer (1995, 547) observed in a recent assessment of twenty years of research on the matter, subcultural theory, to which anomie theory is linked, is, at its core, an ecological theory about places, not a theory of persons (see also Fischer 1973). As reviewed in Sampson and Bartusch (1998), however, survey research on subcultures and moral cynicism has focused primarily on individual-level variations, and with varying results. Remarkably little research in this area takes a contextual perspective, the exception being ethnography (e.g., Suttles 1968; Anderson 1990, 1999). Theoretically, we believe there is a connection between our focus on contextually shaped norms and the recent work of Anderson (1999) on ecological patterns of the "code of the street."

In short, we propose that subcultures of moral and legal cynicism and the attenuation of social efficacy are not necessarily (or only) about individual-level variations, especially those by race/ethnicity. Individual-level variations still matter, on the other hand, a point Fischer (1995, 548–49) carefully acknowledges in a call for contextually based research on subcultural orientations. We therefore integrate these analytical perspectives by simultaneously examining individual-level variations in moral/legal cynicism and collective efficacy in conjunction with an analysis of whether structural characteristics explain their neighborhood-level variance—above and beyond the socio-demographic characteristics of the people residing in those neighborhoods. In this way we partition the variance in efficacy and cynicism into between-individual and between-neighborhood components, with our main theoretical interest residing in the latter.

Survey Data and Methodology

We use the Community Survey of the Project on Human Development in Chicago Neighborhoods (PHDCN), a multidimensional assessment by

residents of the structural and cultural properties of their neighborhoods in 1995. To gain a complete picture of the city's neighborhoods, 8,782 Chicago residents representing all 343 NCs were personally interviewed in their homes. The basic design for the survey had three stages: at stage 1, city blocks were sampled within each NC; at stage 2, dwelling units were sampled within blocks; and at stage 3, one adult resident (18 or older) was sampled within each selected dwelling unit. Abt Associates carried out the screening and data collection in cooperation with the research staff of PHDCN, achieving a final response rate of 75 percent. The design yielded a representative probability sample of Chicago residents and a large enough within-cluster sample to create reliable between-neighborhood measures. The samples within clusters were designed to be approximately self-weighting, and thus the between-neighborhood analysis is based on unweighted data (Sampson et al. 1997, 924).

Modifying Srole's (1956) anomia scale, *cynicism* is measured by five items assessing beliefs about the legitimacy of law and social norms (see also Sampson and Bartusch 1998). Respondents reported their level of agreement with five statements: "Laws were made to be broken"; "It's okay to do anything you want as long as you don't hurt anyone"; "To make money, there are no right and wrong ways anymore, only easy ways and hard ways"; "Fighting between friends or within families is nobody else's business"; and "Nowadays a person has to live pretty much for today and let tomorrow take care of itself" (1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, and 5 = strongly agree). The common idea is the sense in which laws or societal rules are not trusted or considered binding in the present lives of respondents. Taken as a whole, that is, the items tap variation in respondents' ratification of acting in ways that are fatalistic and "outside" of common-law understanding.

To assess *collective efficacy*, we replicate Sampson et al. (1997) and combine two related scales. The first is a five-item scale tapping shared expectations for social control. Residents were asked about the likelihood that their neighbors could be counted on to take action if: children were skipping school and hanging out on a street corner, children were spray-painting graffiti on a local building, children were showing disrespect to an adult, a fight broke out in front of their house, and the fire station closest to home was threatened with budget cuts. Social cohesion/trust was measured by asking respondents how strongly they agreed that "People around here are willing to help their neighbors"; "This is a close-knit neighborhood"; "People in this neighborhood can be trusted"; "People in this neighborhood generally don't get along with each other" (reverse coded); and "People in this neighborhood do not share the same values" (reverse coded). Social cohesion and informal social control were strongly related across neighborhood clusters ($r = .80$), and, following Sampson et al. (1997), were combined into a summary measure of the

higher-order construct, "collective efficacy." The aggregate-level or "ecometric" reliability (see Raudenbush and Sampson 1999) of collective efficacy is .85.[10]

The nested structure of the PHDCN data is addressed by adapting hierarchical linear models (HLM) that account for the nonindependence of observations within neighborhood contexts (Bryk and Raudenbush 1992). We estimate two equations simultaneously: within-neighborhood and between-neighborhood. The major advantage of HLM for present purposes is that it unifies levels of analysis rather than forcing a choice of one against the other; that is, both individual and neighborhood-level relationships are simultaneously modeled and estimated.[11] As Garner and Raudenbush (1991, 253) argue, such partitioning allows the appropriate interpretation of the explanatory power of hierarchical models.

Our analysis strategy accounts for a rich array of individual and neighborhood covariates. The within-neighborhood model regresses our measures of cynicism and collective efficacy on ten person-level characteristics: *race/ethnicity* (composed of indicators for Latino-American, non–Latino African American, and "other"; non–Latino Caucasian is the reference category); a composite measure of *socioeconomic status* (first principal component of education, income, and occupational prestige); *sex* (1 = female, 0 = male), *marital status* (composed of separate indicators for married and separated or divorced); *home ownership*, *mobility* (number of moves in the past five years); and *age*. Using cynicism as the example, the within-neighborhood model can be written as:

$$(\text{Cynicism})_{ij} = \beta_{0j} + \sum_{q=1\text{-}10} \beta_q X_{qij} + e_{ij},$$

[10] Our goal is to measure as reliably as possible the differences among neighborhoods in collective efficacy and anomie. Such a task is different than assessing differences among individuals. In the former case, neighborhood reliability is defined as: $\Sigma\, [\tau_{00}/(\tau_{00} + \sigma^2/nj)] \,/\, J$, which measures the precision of the estimate, averaged across the set of J neighborhoods, as a function of (1) the sample size (n) in each of the j neighborhoods and (2) the proportion of the total variance that is between-groups (τ_{00}) relative to the amount that is within-groups (σ^2). A magnitude of .85 means that we have considerable power to reliably tap parameter variance in collective efficacy at the neighborhood level. The aggregate reliability for cynicism was lower, at .54. This result is not altogether surprising given the attitudinal nature of the survey questions and the "individualistic" bent of the psychometric history of anomie scales (Sampson and Bartusch 1998). Our ability to detect neighborhood differences is thus somewhat attenuated, but we are still within the bounds of acceptability. For further discussion of tools for assessing ecological contexts, see Raudenbush and Sampson (1999).

[11] All models were estimated with HLM 5.0, which provides robust standard errors. For statistical details on the empirical Bayes and maximum-likelihood estimation, see Bryk and Raudenbush (1992, chap. 3) and Sampson et al. (1997, 924).

where β_{0j} is the intercept; X_{qij} is the value of covariate q associated with respondent i in neighborhood j; and β_q is the partial effect of that covariate on cynicism. The error term, e_{ij}, is the unique contribution of each individual, which is assumed to be independently, normally distributed with constant variance σ^2. Importantly, because the person-level covariates are centered about the sample means, β_{0j} is the mean cynicism in a neighborhood after the effects of the ten person-level covariates have been adjusted.

The core between-neighborhood model can be written as:

$$\begin{aligned}\beta_{0j} = {} & \theta_{00} + \theta_{01}\,(1970\ \text{Poverty}) + \theta_{02}\,(\Delta\ \text{in Poverty 70–90}) + \theta_{03}\,(1970\ \text{Black}) \\ & + \theta_{04}\,(\Delta\ \text{in Black 70–90}) + \theta_{05}\,(1970\ \text{Latino}) + \theta_{06}\,(\Delta\ \text{in Latino 70–90}) \\ & + \theta_{07}\,(1970\ \text{Home-ownership}) + \theta_{08}\,(\Delta\ \text{in Home-ownership 70–90}) \\ & + \theta_{09} + (1990\ \text{Density}) + \theta_{10}\,(1990\ \text{Log Population Size}) + U_{0j},\end{aligned}$$

where θ_{00} is the average cynicism score, and θ_{01} to θ_{10} are the regression coefficients of the estimated effects of the structural predictors (1970 and change scores) on the adjusted neighborhood level of cynicism. We also include population density and size in 1990 based on previous research linking them to 1995 social processes in the Chicago data (Sampson et al. 1999). U_{0j} is the neighborhood-level error term, or the unique contribution of each neighborhood, assumed to be normally distributed with variance τ. Based on preliminary analysis, we constrain all within-neighborhood slopes to be constant across neighborhoods. Our interest is in the main effects of poverty on variance across neighborhoods in legal cynicism and collective efficacy, adjusting for individual-level differences in socio-demographic composition.

Results

Table 7.3 presents the coefficients and standard errors of the HLM decomposition of variance for both cynicism and collective efficacy.[12] Model 1 presents just the person-level predictors to reveal differential patterns in the data as we integrate levels of analysis. Note that the coefficient for

[12] Integration of HLM with spatial models is only possible in an indirect way because of software limitations (see Sampson et al. 1999; Morenoff et al. 2001). In addition, preliminary investigation showed no spatial autocorrelation for legal cynicism, and robust results for collective efficacy using a two-stage spatial-HLM procedure. In this table we therefore estimate a straightforward HLM model. All multivariate models are based on listwise deletion of missing data ($N = 7{,}654$ respondents). On average, the models with complete data on all items captured more than 85 percent of the original sample. Further analysis of missing data patterns revealed nothing systematic that would appear to bias the major conclusions.

TABLE 7.3
Individual- and Neighborhood-Level Predictors of Cynicism and Collective Efficacy: PHDCN, 1995

	Cynicism						*Collective Efficacy*					
	(1)		(2)		(3)		(1)		(2)		(3)	
	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.
Intercept	2.36	(0.01)**	2.32	(0.21)**	2.30	(0.21)**	0.02	(0.04)	−0.03	(0.71)	−0.24	(0.71)
Individual-Level												
Female	−0.07	(0.02)**	−0.07	(0.02)**	−0.07	(0.02)**	−0.03	(0.04)	−0.03	(0.04)	−0.03	(0.04)
Married	−0.11	(0.02)**	−0.11	(0.02)**	−0.11	(0.02)**	0.05	(0.04)	0.03	(0.04)	0.03	(0.04)
Separated/Divorced	−0.07	(0.02)**	−0.07	(0.02)**	−0.07	(0.02)**	−0.06	(0.06)	−0.06	(0.05)	−0.06	(0.05)
Own Home	−0.01	(0.02)	−0.01	(0.02)	−0.01	(0.02)	0.41	(0.05)**	0.33	(0.05)**	0.33	(0.05)**
Black	0.09	(0.02)**	0.05	(0.03)	0.05	(0.03)	−0.31	(0.08)**	−0.09	(0.09)	−0.08	(0.09)
Hispanic	0.04	(0.02)	0.03	(0.03)	0.02	(0.03)	−0.03	(0.07)	0.10	(0.07)	0.11	(0.07)
Mobility	0.01	(0.01)	0.01	(0.01)	0.01	(0.01)	−0.06	(0.02)**	−0.06	(0.02)**	−0.06	(0.02)**
Age	0.00	(0.00)**	0.00	(0.00)**	0.00	(0.00)**	0.01	(0.00)**	0.01	(0.00)**	0.01	(0.00)**
SES	−0.10	(0.01)**	−0.10	(0.01)**	−0.10	(0.01)**	0.11	(0.02)**	0.09	(0.02)**	0.09	(0.02)**
Other Race	0.09	(0.03)**	0.07	(0.03)*	0.07	(0.03)*	−0.24	(0.08)**	−0.11	(0.08)	−0.11	(0.08)
Neighborhood Level												
Population Density 1990			0.00	(0.00)	0.00	(0.00)			0.00	(0.00)**	0.00	(0.00)**
%Owner Occupied 1970			0.09	(0.06)	0.09	(0.06)			0.39	(0.18)*	0.28	(0.18)
%Poor 1970			0.42	(0.19)*	0.40	(0.19)*			−1.44	(0.54)**	−1.07	(0.54)*
%Black 1970			0.02	(0.05)	0.02	(0.05)			−0.37	(0.14)**	−0.16	(0.16)
%Hispanic 1970			0.01	(0.08)	0.00	(0.09)			−0.51	(0.24)*	−0.17	(0.26)
Resid Change %Poor 1970–90			0.34	(0.15)*	0.32	(0.14)*			−2.47	(0.46)**	−2.22	(0.44)**
Resid Change %Black 1970–90			−0.04	(0.07)	−0.06	(0.08)			−0.54	(0.22)*	−0.31	(0.24)
Resid Change %Own Occ 1970–90			−0.06	(0.16)	−0.05	(0.16)			1.12	(0.49)*	1.24	(0.48)**
Resid Change %Hisp 1970–90			0.06	(0.07)	0.05	(0.07)			−0.60	(0.18)**	−0.44	(0.19)*
LN Total Pop 1970			−0.37	(2.33)	−0.29	(2.40)			5.20	(7.79)	10.38	(7.77)
LN Homicide Rate 1970					−0.39	(0.82)					−4.08	(2.51)
LN Homicide Rate 1990					0.76	(0.86)					−6.22	(2.75)*
%Var explained at individ level	4.48		4.56		4.55		2.19		2.58		2.59	
%Var explained at neighb level	57.36		58.81		58.49		42.08		74.95		75.97	

Note: All neighborhood-level coefficients and standard errors have been multiplied by 100
** $p < .01$; * $p < .05$

African Americans is both positive and significant ($p < .01$), meaning that blacks report higher levels of cynicism and lower levels of collective efficacy than do whites. The other pattern is that higher-SES respondents, females, older respondents, and those either married or separated/divorced report lower levels of estrangement from societal norms. For collective efficacy, on the other hand, sex and marital status are not important, while home-ownership and residential mobility emerge as strong predictors.

Model 2 introduces neighborhood context into the picture. Race/ethnic composition, home ownership, density, and population size all fail to predict neighborhood variance in cynicism. By contrast, concentrated poverty in 1970 and increases in poverty from 1970 to 1990 emerge as independent and significant predictors of both cynicism and collective efficacy in 1990.[13] The greater the initial level of concentrated poverty, and the greater the unexpected increases in concentrated poverty, the more cynical and collectively inefficacious the neighborhood turns out to be, adjusting for the individual characteristics of the survey respondents (see also Cohen and Dawson 1993). Moreover, once neighborhood-level differences are accounted for, the coefficient for blacks is reduced to insignificance. Other person-level predictors do not change. For example, the coefficients for SES, marital status, and sex remain invariant, whereas the coefficient for African Americans is cut by almost 50 percent.

A similar pattern obtains for collective efficacy, although here the reduction in the coefficient for blacks is even greater in scope—it declines by approximately 70 percent when neighborhood characteristics are added to the model. The coefficient for "other" race drops as well for both outcomes, although it remains marginally significant for cynicism. It seems, then, that African American status is confounded with neighborhood context—blacks appear more cynical and perceive lower efficacy because they are disproportionately likely to live in residential environments of concentrated and increasing poverty. As we have already shown, the magnitude of difference in residential niches by race/ethnicity is striking—African Americans, relative to both whites and Latinos, are much more likely to reside in ecologically distinct environments of poverty. The data suggest that it is precisely this contextual reality of ecologically structured disadvantage—and not race at the person level—that is the driving component of the legal cynicism and collective efficacy results.

Another interesting fact in table 7.3 is that collective efficacy is shaped

[13] Because of the correlation between initial status and percentage change in poverty, for these analyses we examine residual poverty change from 1970 to 1990, which is, by definition, independent of 1970 poverty. We prefer residual poverty on theoretical grounds as well, because the ongoing ecological dynamics of Chicago neighborhoods are taken as the backdrop against which changes in poverty are assessed (see also Bursik and Webb 1982).

more by initial structural context and ensuing dynamics than is cynicism. More of the neighborhood variance is explained in collective efficacy compared to cynicism (75% and 59%, respectively), and a larger number of structural-dynamic factors predict collective efficacy. For example, areas characterized by high levels of minorities (Latino and black) in 1970 and residual changes in minorities from 1970 to 1990 experience lower levels of collective efficacy in 1995, regardless of individual-level race/ethnicity. It may be that segregated minority areas are stigmatized in ways that lead to reduced trust and expectations for social control. Another factor that stands out is one often overlooked in the explanation of poverty traps—home ownership (see Hoff and Sen 2000; Galster 1987). In our data, both the initial level and residual change in home ownership are clear contextual predictors of increased collective efficacy.[14]

In any case, the main message from the results in table 7.3 that we would like to emphasize is the consistent predictive power of initial poverty and changes in poverty for explaining later social-process outcomes. This pattern holds up even when we introduce measures of neighborhood violent crime (Model 3). Because we know that concentrated poverty is linked to violent crime (Sampson et al. 1997), it is important to explicitly entertain this rival hypothesis. For example, it may be that experience with personal victimization or the perception of rampant crime in the neighborhood breeds hopelessness and cynicism about social norms of responsibility and action. We construct measures of violent crime by taking the log of the homicide rate in 1970 and 1990.[15] Although concentrated poverty is rather highly correlated with the homicide rate ($r = .65$ in 1970 and .64 in 1990, $p < .01$), the results are invariant to the latter's consideration. This test reveals that lagged concentrated poverty and recent increase in poverty continue to be robust predictors of legal cynicism and collective efficacy, adjusting not only compositional differences but also rates of violent crime in the neighborhood.

Conclusions

Based on our three sets of analyses, we offer the following tentative conclusions:

- First, poverty is stubbornly persistent in terms of its neighborhood concentration, which is somewhat surprising when considered in rela-

[14] Although not of major interest to this chapter, density is a significant predictor of lower collective efficacy. This finding is consistent with the results in Morenoff et al. (2001). Because density is controlled, the home ownership association cannot be attributed to lower density.

[15] Homicide is generally agreed to be the best measured of all police-recorded crimes.

tion to the common emphasis in urban poverty writings on the notion of urban social transformation (Wilson 1987). While poverty did increase in the 1970s and 1980s, its pathways were set by initial conditions.

- Second, and relatedly, neighborhoods remain remarkably stable in their relative economic standing despite the inflow and outflow of individual residents. In fact, about 70 percent of the variance in poverty lies between neighborhoods rather than within neighborhoods over time, which means that the overall pattern of neighborhood inequality did not change much over time. There is something enduring about the poverty vulnerability of neighborhoods that is not simply a matter of the current income of residents.
- Third, what change does occur reveals strong patterns of asymmetry by race and class, suggesting that once a neighborhood is beyond a certain threshold or "tipping point" of either percent black or percent poor—but especially the former—further change is invariably in the direction of greater racial homogeneity and more poverty. Amazingly, not one neighborhood more than 40 percent black in 1970 became predominantly white at a later time (figure 7.3). By contrast, a large number of white neighborhoods turned black even as the polar extremes (all black and all white neighborhoods) remained the dominant pattern. Neighborhoods also tended either to stay in the same poverty category or move to a higher poverty category over time (table 7.1)—upgrading (e.g., gentrification) was quite rare at least from 1970 to 1990.[16] Linear models fail to capture these dimensions of asymmetric change.
- Fourth, in multivariate analyses we demonstrated that initial conditions of poverty independently predict the rate of increase in later poverty controlling for race, ethnicity, and home ownership. This conclusion holds whether or not we examine raw change or residual changes that take account of the city's baseline levels of poverty. Furthermore, black neighborhoods are at special risk for rapid poverty in-

[16] We acknowledge that focusing solely on poverty rates, which tap only one end of the distribution of neighborhood socioeconomic status, may lead us to understate the amount of gentrification that did take place. Moreover, gentrification may have occurred at a geographic level lower than that of the neighborhood cluster, such as the census tract or block group. We are currently exploring this issue, along with an analysis of concentrated affluence that explicitly takes into account the upper end of the income distribution. Interestingly, our preliminary analysis reveals that initial conditions of poverty in 1970 do predict later pathways of economic change at the upper end of the distribution. Specifically, using an inequality measure that taps the proportional balance of incomes (affluent families – poor families/total families), poverty in 1970 shows a strong negative relationship to later concentrated affluence. Once a neighborhood reached approximately a 25 percent level of poverty in 1970, it never climbed above 0 (equality) on the proportional inequality index in later decades.

creases, whereas home ownership emerges as a major protective factor at the neighborhood level.

- Fifth, neighborhoods that changed the most were those that were spatially proximate to initial concentrations of poverty, so poverty change was geographically systematic—so much so that spatial proximity to change in poverty matters as much as the internal characteristics of a neighborhood, including its initial level of poverty. In particular, proximity to increasing poverty is directly related to the rate of change in poverty—whether raw or residual changes relative to the city as a whole.
- Finally, the consequences of durable and increasing poverty appear to be long-lasting, at least with respect to predicting key social processes. Controlling for the socio-demographic location of individual respondents, both persistent poverty and increases in poverty from 1970 to 1990 predict lower collective efficacy and the moral cynicism of neighborhood residents in 1995—a span of some twenty-five years. This finding is consistent with the scenario that certain urban neighborhoods get locked into structural dynamics that generate systematic social processes that in turn may contribute to their further stigmatization and deepening of poverty.

There are, of course, a number of limitations in our analyses that preclude definitive conclusions (see again note 9). For example, the sort of reciprocal feedback processes that might underlie true path dependence and poverty traps remain to be demonstrated. Although we took a longitudinal and dynamic approach, the data were mainly descriptive and some of the models fairly simple. Without data on how spatial processes unfold over time it is impossible to disentangle heterogeneity in neighborhoods from causal spatial dependencies, whether in the form of exposure to risk factors or diffusion of the outcome in question. We also did not examine whether the processes that served to reproduce spatial inequality in the crucial period of 1970 to 1990 extend to the more recent decade of 1990–2000, an era of increasing gentrification.[17]

Despite these limitations, we would stress the logical connections among the preceding empirical findings. No one finding is strongly defensible, but the cumulative pattern is evocative. Indeed, it is hard to imagine that the confluence of findings, each of which was generated somewhat independently, emerged absent the sort of lock-in processes of poverty that we hypothesized. Our ability to measure collective processes also represents what

[17] This is the subject of our current work. Although much remains to be done, the preliminary answer is in the affirmative—poverty traps remain persistent even when secular changes serve to reduce overall levels of poverty.

we believe is an important direction for future resolution of the poverty trap debate. Direct measurement of subcultural orientations and systemic social processes is rare in the social sciences in general and poverty research in particular (Tilly 1998; Mayer and Jencks 1989), especially from a multilevel contextual perspective. By capitalizing on a study designed to investigate social context, we were able to show that communities displaying elevated levels of legal cynicism and lower levels of collective efficacy were those that had been exposed to poverty in 1970 and increases in poverty from 1970 to 1990. Supporting contextual accounts of subcultural orientations and collective efficacy (e.g., Anderson 1990, 1999; Sampson 1997), our findings suggest that there is a durable structure in poverty areas that erodes shared expectations, trust in mainstream institutions, and collective capacity. Unfortunately, poverty traps apparently close faster in such areas and remain locked in place even as different individuals come and go.

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