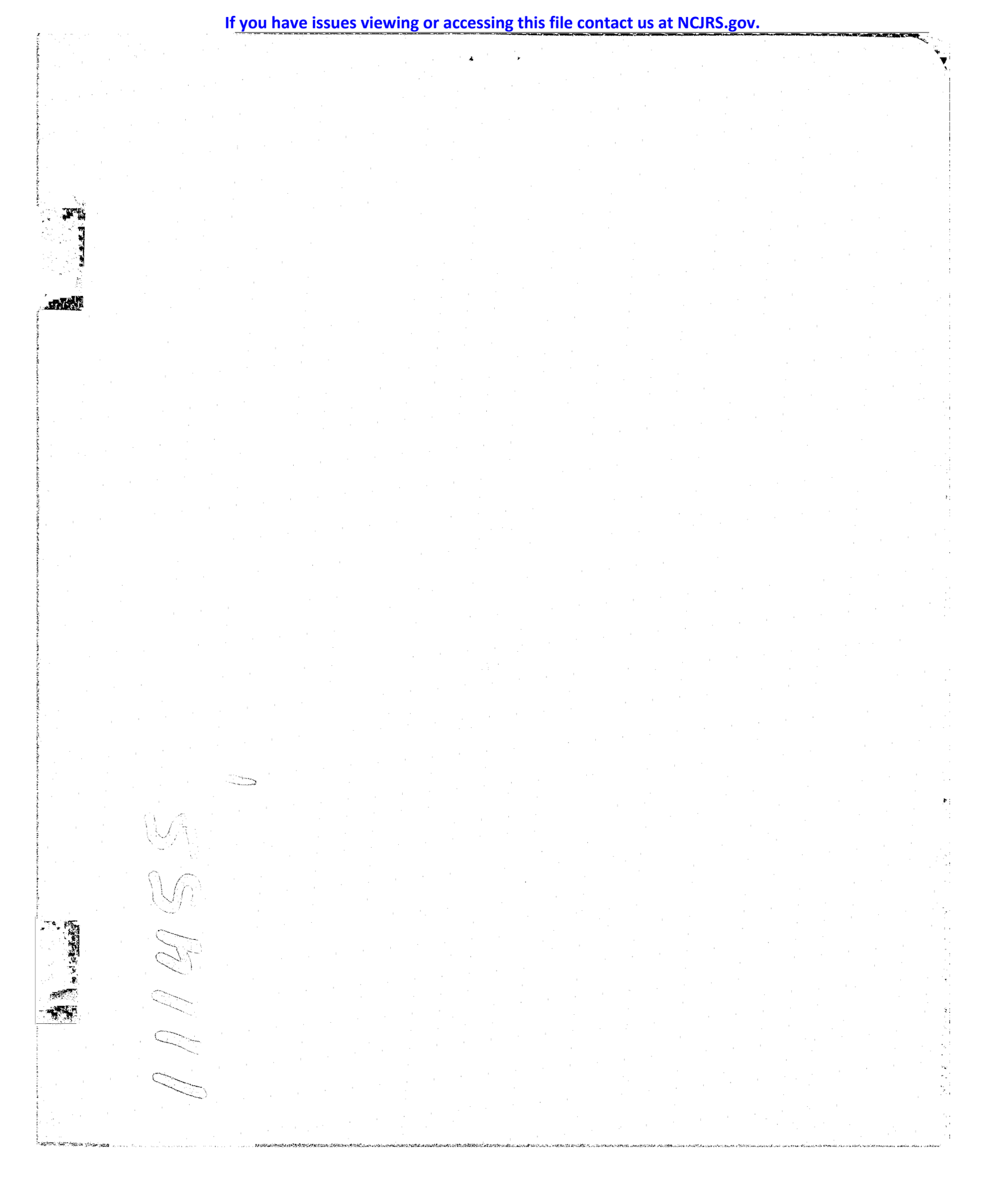

A Longitudinal Analysis of Neighborhood Delinquency Rates

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Final Report

The general problem addressed in this project has been the empirical examination of several assumptions that have traditionally characterized ecological models of crime and delinquency. Most troublesome in this respect has been the ongoing treatment of neighborhood delinquency rates as the outcome of a stable set of urban dynamics that have geographically sorted the city into a series of "natural areas". By far, the most important of these ecological processes reflects the residential mobility of a city's residents and the settlement of various socio-economic groups into distinct areas in the city. It was assumed by Park and Burgess that such geographic settlement patterns were "natural" in that they were driven by the distribution of land values and the economic dynamics of an ongoing, competitive housing market. Clifford Shaw and Henry McKay, who introduced the ecological model into American criminology, interpreted the relatively stable spatial distribution of delinquency rates in Chicago over a forty year period in light of this assumption of a stable set of ecological housing dynamics. Such an orientation enabled them to reach their controversial conclusion that Chicago's neighborhoods maintained their delinquency "character" regardless of the racial and ethnic groups residing there.

The field of urban sociology has long recognized that the stable processes of residential relocation considered by Shaw and McKay were dramatically altered after World War II. However, spatial models of crime and delinquency have continued at least implicitly to interpret the geographic distribution of these behaviors in terms of a stable ecological system. In an effort to

determine the extent to which the ecological redefinition of the city since the time of Shaw and McKay has altered these patterns, we examined the changes in the relative distribution of delinquency that occured in the 74 local community areas of Chicago between 1930 and 1970. Five indicators of the ecological composition of these neighborhoods were chosen to conform as closely as possible to those used in the original Shaw and McKay research: the change during successive ten year periods in the percent nonwhite, the percent foreign born white, the percent of males who were unemployed, the percent of dwelling units that were owner occupied, and the percent of households with more than one person per room (see Bursik, 1986b). While the ecological redefinitional process may gradually unfold over time, a special consideration in this analysis was the possibility that some neighborhoods may have undergone dramatic transformations almost completely unrelated to past developmental patterns. Therefore, it was necessary to also investigate the possibility that some areas of the city were exceptions (or outliers) to the overall pattern of urban change.

The analysis of the 1930-1940 patterns of change indicated that Shaw and McKay's assumption of general ecological stability was warranted: although a significant dimension of ecological change was found to underly the five indicators, there was not a great amount of systematic ecological redefinition among Chicago's communities. That is, the traditional areas of social disorganization continued to persist. Relatedly, although there was a significant amount of patterned change in the spatial distribution of delinquency rates related to this ecological change, only 15 percent of the variation in delinquency rates could be attributed to a local community's changing role in the ecological system. Therefore, the pattern originally observed by Shaw and McKay was generally substantiated.

However, this was definitely not the case during the 1940-1950 period. Due to the onset of suburbanization, a pronounced housing shortage for blacks in Chicago, a resumption of black inmigration from the South, and economic gains made by black residents during the war years, the patterns of residential settlement changed dramatically. This was indicated by two very strong dimensions of ecological change that appeared during this decade, primarily reflecting neighborhood change in racial/ethnic composition and changes in the housing status of these communities. New neighborhoods were being transformed into areas of relative instability such as were traditionally found in Chicago in the zone of transition during its earlier history. Since the formal and informal networks necessary to the effective self-regulation of a community are extremely difficult to maintain during periods of rapid compositional change, this redefinition was strongly associated with the changing delinquency rates of Chicago's neighborhoods.

This pattern became even more pronounced during the 1950-1960 period. Although the ecological redefinition of Chicago became somewhat less systematic, the rate of neighborhood change accelerated, leading to an even stronger association between neighborhood change and delinquency rates. During the final period of 1960-1970, many of the neighborhoods previously characterized by rapid change were beginning the process of entrenchment as new social networks were formed and strengthened. Thus, the relationship between ecological change to changes in delinquency began to weaken during this time as the neighborhoods began to stabilize. Overall, the analysis indicated that the assumption of ecological stability has not been warranted in Chicago since the 1940-1950 period. Therefore, cross-sectional analyses of neighborhood patterns of crime and delinquency seriously risk confounding the effects of ecological redefinition with the effects of ongoing community dynamics.

During each period of analysis, several communities were found to be exceptions to the general patterns of change characterizing Chicago. The most interesting of these represents the community of Burnside, which emerged as an outlier in both 1940-1950 and 1950-1960. Although the community maintained its status as an extremely stable blue-collar area with a large concentration of foreign born whites and owner-occupied homes, it was characterized by the largest increases in delinquency between 1940 and 1950. In fact, a similar finding in an earlier analysis formed the basis of a second major focus of our grant proposal: the increase may have reflected an organized protective response to rapid racial changes that were occurring in nearby areas. Such an orientation is contrary to the usual assumption of ecological models that delinquency rates are primarily the outcome of internal community dynamics related to social disorganization. However, the fact that a significant spatial autocorrelation existed between changes in delinquency rates in adjacent areas (.334) suggested that the issue was worth pursuing.

Although the adaptation of a community to external dynamics may have long term characteristics, it is likely that such processes will be most apparent in short-term adaptations to immediate compositional change in adjacent areas. The longitudinal nature of the data used in this research therefore made it possible to investigate the extent to which the omission of these external dynamics might lead to a serious misspecification of ecological models (see Heitgerd and Bursik, 1984, 1987). Four sets of variables were used to model the changes in local delinquency rates that occurred between 1960 and 1970. The first three represent the dynamics internal to a community that are traditionally considered to be related to delinquency rates: changes during the ten year period in the household status of the community (a composite variable based on the percent of the dwelling units that were owner-occupied, the

percent male unemployment rate, and the percent of households with more than one person per room), changes in the racial and ethnic composition of the community (based on the percent nonwhite and foreign born white), and the stability of the area (the number of residents who had resided there at least five years). The fourth variable reflected racial change in areas adjacent to the local community.

As was expected from social disorganization theory, the stability of an area and the changes in its household status were strongly related to subsequent changes in an area's delinquency rate. More importantly, changes in the racial and ethnic composition were not, indicating that it is the existence of local networks of formal and informal social control that are related to the ability of a community to control itself and not its racial/ethnic composition. Finally, after controlling for these internal dynamics, the external compositional change variable had a significant effect on changes in local delinquenry rates. Thus, delinquency represents a response to both external and internal dynamics. The effects of these variables accounted for the spatial autocorrelation among delinquency rates, for the autocorrelation of the residuals from the model dropped to insignificance.

One problem that was encountered in the analysis was that an extremely high correlation existed between a neighborhoods nonwhite composition and that of the adjacent communities. While such a pattern is entirely expected given the residential settlement patterns of blacks in Chicago, it does indicate that the beta weights for the internal and external compositional variables might be highly confounded. However, when the adjacency variable was dropped from the model, the beta weight for the internal compositional variable remained insignificant. Therefore, we are confident that the findings are fairly robust.

Of course, it was not to be expected that these effects were consistent for all of Chicago's communities. In particular, the effect of the adjacency compositional variable was expected to differ given the internal composition of the neighborhood. In addition, the effect was expected to be most pronounced in those areas with the greatest levels of stability, for it is only in these areas that delinquency might be used as part of an organized resistance to impending change. Although our findings can only be considered tentative given the extremely small number of local communities, both expectations were supported: external compositional change had the greatest effect on the delinquency rates of the most stable areas with high proportions of foreign born whites.

We feel that such patterns may provide a possible response to a serious criticism of the social disorganization model that has been made in the past. It has been noted that there are some very stable, organized areas in large cities that, nevertheless, have high delinquency rates. Researchers who emphasize only the internal dynamics of a community have not been able to explain such anomalies and have often been forced to turn to mixed model explanations. Our findings suggest that such patterns may in fact be attributable to processes that are fully ecological in their origin.

The final area of work conducted under this grant investigated the general assumption that the level of delinquency in a community is recursively dependent on the dynamics attributed to social disorganization. General human ecologists have stressed that the elements of the "ecological complex" are reciprocally related; in fact, Duncan and Schnore have argued that this relationship is the most fundamental premise of the ecological approach. Therefore, we were interested in the extent to which the level of delinquency in an area might directly or indirectly cause changes in the composition of an

area as well as being an outcome of that composition. Several very interesting patterns emerged from this analysis (see Bursik, 1986a).

There was neither a lagged nor concurrent effect of the socioeconomic status of a community on the changes in delinquency rates between 1960 and 1970. However, the finding that high rates of delinquency were strongly related to subsequent significant increases in the socioeconomic composition was completely unexpected. Although a full understanding of this path will necessitate some very subtle future analysis, the possibility exists that this is due to the gentrification phenomenon. It should also be noted that a similar positive relationship was noted between 1960 and 1970 in Los Angeles by Schuerman and Kobrin. Whatever the source of this relationship, it is apparent that delinquency rates have an important effect on the nature of other ecological processes.

Of equally important interest is the existence of a strong reciprocal relationship between changes in the racial composition of a community and changes in its delinquency rate. A two stage least squares estimate of the model indicated that increases in the racial composition of an area are related to concurrent increases in the delinquency rate; such a finding is consistent with several ecological theories of crime as well as the longitudinal findings reported earlier in this report. What such theories do not predict, however, is that changes in the delinquency rate also cause changes in the racial composition and, more importantly, the standardized magnitude of this path is nearly one and a half times the size of the traditionally considered relationship. Most likely this confirms the proposal of Watts and Watts that in such neighborhoods those who are able to leave the neighborhood do so, resulting in an increase in the relative proportion of minority residents in the area. Although such a proposition cannot be resolved definitely without

data on residential mobility, the findings indicate that delinquency rates in themselves play an important role as agents of ecological change.

Although several other investigations were undertaken as part of the funded research (see page 9), we consider these three analyses to have the most important implications for the continued relevance of ecological models to the study of crime and delinquency. Unless recent developments in urban sociology are more fully integrated into these models, such as was attempted here, our understanding of these processes will be extremely limited.

Products

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