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THE DIFFERENTIAL DECLINE OF MIDDLE AND UPPER CLASS NEIGHBORHOODS
IN CENTRAL CITIES OF THE UNITED STATES:
PATTERN AND PROCESS

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By

John Paul Herr, B.S., M.A.

The Ohio State University
1976

Reading Committee:

Kevin R. Cox, Ph.D.
Lawrence A. Brown, Ph.D.
Edward Taaffe, Ph.D.

Approved By

Kevin R. Cox
Adviser
Department of Geography
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VITA

July 26, 1941 . . . . Born - Lancaster, Pennsylvania
1969 . . . . . . . . B.S. in Education, Millersville State College, Millersville, Pennsylvania
1969 - 1971 . . . . NDEA Title IV Fellow, Indiana University, Bloomington, Indiana
1971 . . . . . . . . M.A. in Geography, Indiana University, Bloomington, Indiana
1971 - 1975 . . . . Teaching Associate, Department of Geography, Ohio State University, Columbus, Ohio
1975 - 1976 . . . . Lecturer, Earth Science Department, Indiana University at South Bend, South Bend, Indiana

PUBLICATIONS


FIELDS OF STUDY

Major Field: Geography

Studies In Political Geography

Studies In Urban Geography
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INTRODUCTION

Chapter 1

In recent years much has been said about the urban crisis in general and in particular the fact that central cities are coming to be inhabited predominantly by the lower classes as upper class households move to suburban areas. This process of suburbanization appears to be related to the decline in quality of central city environments while suburban communities through political and economic measures continue to maintain a high level of environmental quality. This decline in environmental quality would seem to be both cause and effect of the changing social composition of central cities. Flight to the suburbs from the central city by businesses and upper and middle class households for better environments leaves central cities with fewer resources, but with greater needs. This then is further inducement for more flight to the suburbs by those able to do so, leaving central cities in an even worse condition.

This dismal evaluation of the plight of central cities is rejected by some critics who point out that cities have always played a major role in transforming migrants from rural areas or immigrant groups from abroad into middle class households who then
abandon the center of the city.\footnote{An example of this argument is presented by Irving Kristol, "The Negro Today Is Like The Immigrant Yesterday," \textit{New York Times Magazine} (September 11, 1966), pp. 50-52 and 124-142.} It is pointed out that since colonial days cities have been dynamic population centers constantly receiving new migrants who replace previous groups which have become part of the middle class. These new migrants to the city have traditionally settled in areas adjoining the central business district where jobs and services are more accessible. As they became more prosperous they moved from the tenements near the central business district to new neighborhoods farther from the center of the city. The older neighborhoods were then occupied by a new group of migrants who came to the city.

The most recent migrants to arrive in the cities have been poor blacks primarily from the rural American South. According to this argument, in time they too will follow the path of previous central city inhabitants to middle class neighborhoods farther away from the center of the city.

Proponents of this point of view also argue that central cities have long had relatively poor quality environments.\footnote{David Ward, "The Emergence of Central Immigrant Ghettoes in American Cities: 1840-1920," \textit{Annals of the Association of American Geographers}, LVIII, No. 2 (June, 1968), pp. 343-59.} Densities were frequently very high and, therefore, congestion was often worse for central city neighborhoods than at the present time. Likewise, because cities were frequently industrial rather than service oriented, levels of air pollution were very high.
Housing quality too is said to have been relatively poor in many cities. Thus current dismay over the worsening of central city conditions is felt by these critics to be unwarranted.

However, several important differences appear to exist between cities of this earlier era and the modern city. First, central cities do not appear to be transforming current black immigrants into middle class citizens as rapidly as had been the case with white ethnic groups in the past. This appears in part to be attributable to the fact that black migrants face the problem of racial discrimination, thus limiting their ability to improve their economic status as rapidly as had white ethnic groups. This is compounded by the greater magnitude of black migration to central cities than of any previous group.

Second, unlike the situation in the past central cities no longer are able to expand their boundaries because they are frequently completely surrounded by suburban jurisdictions. Thus as groups move from old neighborhoods to new ones on the periphery of the city they are no longer within the central city, but instead in suburban jurisdictions. Since those moving out are usually not lower class groups, central cities are left with an increasingly large percentage of lower class households who have few resources with which to provide public services, but have a higher need for them.

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Third, due to the revolution in transportation which made automobiles widely available, households are able to live farther away from central cities. This enables the more prosperous urban residents to live away from the problems of central cities, but still avail themselves of the amenities of central cities. This too helps deprive central cities of resources and increases the proportion of central city residents who are lower class.

Fourth, partly as a result of the factors listed above, business and industry are leaving central cities, reducing the number of jobs available to central city residents. In addition the greater technology of today's society reduces the need for unskilled and semi-skilled workers and, therefore, makes it more difficult for unskilled workers to move into the labor force.\(^4\)

Fifth, with an increasing metropolitan population and an expanding housing stock the spatial distribution of new housing vacancies becomes an important determinant of the pattern of new residential growth. Because vacant land is available primarily in peripheral locations new housing stock is infrequently constructed in central city areas. In the post World War II era ownership of a single family dwelling has become an important goal of many Americans. The attainment of this goal is aided through easy financing by private lending institutions and federal government policies which make money available for new housing. Since this

credit is much more easily available to middle and upper class households than lower class households the former are induced to leave central cities leaving behind the latter.

Sixth, whereas central city environments are deteriorating the environments of suburban jurisdictions are being maintained or improved, and, therefore, become more attractive vis-a-vis central cities. Suburban jurisdictions frequently offer both lower taxes and higher levels of service than central cities. For example, suburbs are able to allocate more resources to education while maintaining lower tax rates than central cities. Given that school quality appears to play an important role in residential location this is likely to contribute to loss of middle and upper class households by central cities.

For these reasons one could argue that central city environments are, or are likely to become, relatively worse than in previous eras.

Since the new migrants to the cities are not being rapidly transformed into middle class households, areas which had previously housed lower classes are no longer sufficient and lower class households are expanding into non-lower class areas. This along with suburban alternatives of higher environmental quality puts additional pressure on the non-lower class to flee to the suburbs. The expansion of lower class residents into new areas occurs differentially across the city usually following the path of least resistance. Some areas, because their residents have more financial resources and information are able to resist this
encroachment while those with few of these resources are not. One would expect that those who are able to resist are less likely to move to the suburbs. Likewise, those whose neighborhoods are not adjacent to the expanding lower class neighborhoods are not likely to move to the suburbs. Therefore, both the relative location of neighborhoods with regard to expanding lower class neighborhoods and the ability of these neighborhoods to respond to encroachment would appear to be important determinants of the spatial and social correlates of residential change.

A process hypothesized by Harvey and termed a "blow-out hypothesis" would seem to be consistent with this conceptualization of the problem. Harvey suggests that middle class households are disappearing from central cities in greater proportion than upper class households. According to him upper classes do not face the same incentives to suburbanize as middle class households because of their relative locational position. Middle class areas are frequently in closer proximity to the expanding lower class areas than upper class households and, therefore,

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suffer more from the negative externalities produced by lower class households. Upper class households, therefore, are more likely to remain in central cities as middle class households withdraw to independent suburbs.

One might also expand this hypothesized response to the jurisdiction-wide deterioration of environmental quality since those who are most able to manipulate their environment are also least likely to relocate in the suburbs. For example, one might find that educational expenditures per pupil are declining for the city as a whole, but upper class neighborhoods may through the threat of moving to the suburbs be able to get some special consideration for their schools. Alternatively, they may also send their children to private schools. In a similar fashion, upper class areas may be able to get more police protection for their area. Upper class areas may, therefore, be less affected by jurisdiction-wide deterioration than middle class households which do not have the ability to resist this deterioration in the quality of the city environment.

6 Externality here refers to social costs or benefits which a household receives from being in close proximity to the unit generating those effects. In the case of negative externalities the recipient is not compensated for those costs nor does the recipient pay for them in the case of positive externalities. The welfare effects of these externalities in urban areas is discussed in David Harvey, "Social Processes, Spatial Form and the Redistribution of Real Income In An Urban System," Regional Forecasting, ed. by M. Chisholm, et. al., (London: Butterworth, 1971); and in Kevin R. Cox, Conflict, Power and Politics In The City: A Geographic View (New York: McGraw Hill Book Company, 1973)
It is the purpose of this research to examine the differential rates of change between upper and middle class areas by looking at the pattern and the process of residential change across cities in the United States. In testing hypotheses related to the process of residential change, a sample of 34 cities of the United States were selected to analyze the pattern of change at an aggregate level. The major hypothesis that middle class households are disappearing from the central city in larger proportions than upper class households is tested by evaluating the relative numbers of people in middle and upper class areas in the two categories in 1960 and 1970.

In a second step an attempt will be made to explain the differential blow-out rates across the thirty-four cities with variables thought to be important at the city-wide scale. A third level of analysis involves testing a number of hypotheses about intra-urban inducements to blow-out. These hypotheses are tested in a regression analysis where the dependent variable is a set of blow-out scores derived from the first stage of analysis.

The term social class as used in this study is not primarily a measure of prestige as are most measures constructed by sociologists, but is designed by the author as a measure of relative position with regard to financial and educational resources. Both of these are important to the hypotheses being tested since both are likely to enhance the ability to achieve the type of neighborhood preferred and are also important in enhancing the quality of the urban environment. The index is similar to the Duncan Index in that it uses education and income as its two dimensions. Otis Dudley Duncan, "A Socio-economic Index For All Occupations," in Albert J. Reiss, Jr., et. al., Occupations and Social Status (New York: Free Press of Glencoe, 1962), pp. 109-38.
Included in this study are first, a review of existing models of residential change and literature which might suggest alternative ways of viewing residential change; second, the conceptual model developed for purposes of this analysis; third, a discussion of data and the methodological approach used here; fourth, a presentation of the results of the three stages of analysis; and finally, the conclusions to be derived from the study.
Introduction

The purpose of this dissertation is to evaluate the process of residential change as it contributes to differential suburbanization by middle and upper class households. However, the model of residential change to be developed must first be put in context with respect to the existing literature. This is the objective of this chapter.

The first section of the chapter places the processes of residential change and suburbanization in the context of the patterns they are called on to explain; this involves an evaluation of the literature dealing with the social class composition of central cities as compared to their suburbs. Also of concern are the relative changes occurring in that social class composition over time.

The review then focuses on the forces underlying the changing social class geography of the city. As conceived here housing environments within the metropolitan area are allocated through competition in both the market and political processes. These competitive processes operate within the context of differing preferences for locations, differing attributes of locations
and differing resources with which households compete for locations. Since an urban area is an open system the equilibrium conditions resulting from these competitive processes are continually being disturbed by new inputs into the system in the form of in-migrants, or of new housing stock. Other disequilibrating forces may include rising incomes or lower transportation costs. These forces may result in some households relocating and others attempting through the political process to protect their neighborhoods against change. The end result is likely to be a change in the social class geography of urban areas. An attempt is made here to put these processes in the context of the existing literature.

Social Class Composition of Central Cities and Suburbs

Much of the literature on urban problems and the policies designed to deal with those problems assumes a specific geography of social class: lower class households are found in central cities and upper class households in suburbs. In many cities such a dichotomous classification of locations by social class is quite meaningful. However, there are also urban areas which do not conform to this pattern. For example, some of the research examined here indicates that some urban areas have high and low status households in the central city and middle status

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\text{Status, income, and class are used in this chapter as closely related, but not exactly the same. Change from one term to another in this review reflects the literature being discussed at that point.}\]
households in the suburban areas. Other research focusing on the process of suburbanization suggests that there are social processes at work that may induce middle class relocation to suburban areas at a faster rate than upper class relocation. On this basis one might expect a tendency in some urban areas toward middle class suburbs and a central city polarized between lower and upper class.

Schnore, in a series of studies, examined the social class composition of central cities and suburbs across a large number of urban areas and found several distinct social class geographies. Using years of education completed as a measure of social status the most frequently found pattern was that of high status households in suburbs and middle and lower status households in central cities. However, the second most frequently found pattern was that of middle status households in suburban areas and upper and lower status households in the central cities. A few urban areas had other patterns of social class residential location, but their numbers were insignificant.

The first pattern identified by Schnore was found most frequently in older urban areas in the northeastern portion of the

United States. The second pattern on the other hand was found most frequently in smaller and newer urban areas in the West and North Central regions of the United States.

Schnore and Pinkerton in examining changes in social composition of central cities and suburbs between 1950 and 1960 found cities tending toward the patterns found by Schnore. In other words some cities were evolving toward a social class distribution where upper class households would be found in suburban areas and lower and middle class households in central cities. Another group of cities were changing toward middle class suburbs and an upper and lower class central city. Of the 363 urban areas examined about 60 per cent fell into the first category and about 28 per cent into the second category. The remainder were distributed among four other relatively unimportant categories.  

Schnore and Jones suggest that there is an evolution of urban areas: an initial dichotomous pattern of upper status central cities and lower status suburbs changing over time into one with lower and upper status central cities and middle status suburbs. The final stage of this evolutionary process would have a dichotomous pattern of lower status central cities and upper

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status suburbs.⁵ The evolutionary process would appear to be consistent with the findings by Schnore and Pinkerton that the social class geography at any point in time is closely related to the age and size of the urban area.⁶

Guest, in an evaluation of the hypothesized evolutionary cycle, finds some support for it although his analysis was conducted at the census tract level while Schnore and Pinkerton's generalizations were made across urban areas.⁷ In the context of Schnore's generalization, Guest also cautions "against interpreting cross sectional relationships between the age of metropolitan areas and the location of social status groups as indicative of some universal evolutionary tendency for metropolitan areas."⁸ Instead he indicates a need for longitudinal studies. In general Guest rejects the evolutionary hypothesis as an important explanation of metropolitan social class geography. He suggests that further attempts to explain this phenomenon should focus on new methodological and theoretical approaches.⁹

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⁸ Ibid., p. 242.

⁹ Ibid.
Schnore, while not addressing himself to the process generating the distribution of social class groups at any point in time, did try to identify some of the correlates of such distributions. Initially he attributed much of the variation to differences in the amount of annexation occurring across cities. However, in more recent work the effect of annexation was found to be relatively insignificant.

In an expanded evaluation of these correlates Schnore and Winsborough introduce several additional independent variables. They conclude that employment in manufacturing is the strongest correlate of variation in social class composition within urban areas. In other words the higher the proportion of urban workers employed in manufacturing the higher the status of the suburbs in comparison to the central city. However, the theoretical links between employment in manufacturing or, indeed, any of the other variables introduced and the dependent variable appear very weak. Moreover, despite the statistical relationships found, Schnore and Winsborough provide no reason why employment in manufacturing or


any of the other variables examined should lead to any particular social class geography. One might, therefore, question whether these variables are causally linked to the dependent variable or whether the relationships are spurious. For example, the older manufacturing cities of the northeast also have physical characteristics different from those of the newer cities of the southwest. It could be that it is these physical characteristics which are causally related to the dependent variable rather than the proportion of workers employed in manufacturing.

In a different approach to the same issue Davis examined changes in neighborhood income levels in Washington, D.C. He found a tendency for middle income households to locate outside the central city when pressured by expanding low income neighborhoods. The end result is then a polarized central city inhabited by lower and upper income households with middle income households moving to the suburbs. These empirical findings would in addition seem to be consistent with a pattern of social class geography also hypothesized by Harvey.

The findings of Davis and the social class distribution hypothesized by Harvey suggest a social class geography in urban areas similar to that found for some places by Schnore, and

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12 J. Tait Davis, "Middle Class Housing In The Central City," Economic Geography, XLI (July, 1965), pp. 238-51.

Schnore and Pinkerton. On the basis of Davis and Harvey's studies, one might expect an increasing number of urban areas to exhibit a pattern of middle class suburbs and upper and lower class central cities. The work by Schnore and his co-authors suggests that this pattern is true of only a minority of urban areas. Later in this dissertation an attempt will be made to evaluate this distribution of social classes with respect to central cities and their independent suburbs.

**Housing Allocation and Social Class Geography**

Having evaluated the patterns of social class geography of urban areas as presented in the literature, attention is now turned to the second purpose of this review: to examine the processes by which those patterns are generated. Since households are allocated to urban environments through the housing market and to a lesser extent the political process, an understanding of the changing social class geography assumes familiarity with those processes.

The model of the urban housing market developed here assumes a competitive process in which buyers or households compete for available housing environments. The components of this model include households with variable characteristics such as preferences for housing attributes and resources giving them power in both the market place and the political process. The model also assumes housing environments characterized by varying attributes. These include accessibility, the physical attributes of the building and
lot, neighborhood attributes and a set of services provided by the local government in the jurisdiction where the unit is located.

In any one housing market various disequilibrating forces such as in-migration may be at work creating dissatisfaction among certain households. Under these circumstances households may engage in various adjusting strategies. They may choose to locate in other environments or alternatively they may restructure their present environment so as to protect themselves from the changes that are occurring. These strategies are implemented through the market process and through the political process. The outcome of these strategies can substantially alter the social class geography of urban areas. The social class geography that emerges may be seen as a result of an interplay between the preferences of households and their ability to satisfy those preferences through market or political processes.

In this process of allocating housing environments to households the attributes of housing have been seen in the literature as of varying importance. Various models developed in the housing and neighborhood change literature seem to emphasize one or another of the attributes of housing environments frequently to the exclusion of all others. For example, land use models of the Alonso, Muth, Wingo type emphasize the role of
accessibility; filtering models emphasize the physical attributes of the housing unit; and invasion-succession models emphasize neighborhood effects. While these same models assume that a competitive process allocates these housing attributes they sometimes overlook the role of household preferences. Another set of models assumes that preferences for neighborhood social and ethnic composition are the primary determinant of household location. The model developed here assumes that most


of these components have some impact on the allocation of households to locations and an attempt is, therefore, made to integrate themes from a variety of these approaches. Consider now in greater detail some of the components of this model.

1) The Attributes of Housing Services: When households bid for housing they are in fact competing for a variety of housing attributes. Here we consider the relevant attributes and the importance of each in determining the utility of the total bundle of housing services.

The most obvious of these housing attributes is the physical characteristics of the unit itself. In this category are such considerations as architectural style of the building, whether it is a single or multiple family dwelling unit, the number of rooms or the square feet of floor space, and the state of repair of the dwelling. These attributes have received attention in the literature on neighborhood change. In particular, the filtering literature has emphasized the importance of the age of the housing stock in determining housing quality.19

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A second attribute of housing for which households compete is accessibility to a set of services or employment opportunities. Accessibility is important as a result of its impact on household transportation costs. In the literature dealing with this attribute the center of the city is assumed to be the most accessible point, with accessibility declining as one moves away from the center of the city. However, this decline in accessibility is offset by an increase in the size of lots made possible by lower land values for the less accessible locations. In this literature housing utility is then determined not by accessibility alone, but also by lot size.

Third, housing is also characterized by some neighborhood quality. In this case the housing unit itself plays no role. Important instead are all of the factors that make the neighborhood a better or worse place in which to live. These may include the state of repair of surrounding houses, the quality of local schools, the behavior patterns of people who live in the neighborhood, the amount of traffic on local streets, or for some households the ethnic or racial composition of the neighborhood. That these are important is attested to by the large literature
focusing on race or socio-economic status, and their contribution to neighborhood change.  

Finally when purchasing housing one also acquires a bundle of services provided by, and obligations to, the local government of the jurisdiction in which the housing unit is located. Services may include some level of police and fire protection, some level of educational expenditures and of general welfare services. Also attached to property ownership is an obligation to pay taxes at some rate determined by the local government in question. This will be a property tax, though income taxes are also levied increasingly frequently. While all services and obligations are to some degree attached to property ownership everywhere, they usually vary in magnitude from one jurisdiction to another. These services and obligations vary in urban areas in particular. This may be attributed to the presence of numerous political jurisdictions composed of households with varying needs, preferences, and abilities to support service provision.

These various attributes of housing make up the bundle of housing services for which households compete in the market place.

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20 Duncan and Duncan, The Negro Population; Rapkin and Grigsby, The Demand For Housing; and Molotch, Managed Integration: Dilemmas. This point of view seems to be supported by a number of studies which find that race and income are the major determinants of neighborhood change. James T. Little, "Residential Preferences, Neighborhood Filtering, and Neighborhood Change," Institute for Urban and Regional Studies, Working Paper HMS 3 (St. Louis: Washington University, June, 1974); and Hugh O. Nourse and D. Phares, "The Filtering Process In The Inner Suburbs," Racial Transition In The Inner Suburb: Studies Of The St. Louis Area, ed. by Sutker and Sutker (New York: Praeger, 1974), pp. 80-104.
However, one might expect that the importance of these attributes will vary according to the utility derived from each and the tradeoffs which have to be made between them. Consider now the role of preferences in the allocation of households to environments.

ii) Preference Functions: The conceptualization envisaged here does not assume homogenous preference functions with respect to housing environments. Instead it is assumed that households have differing perceptions of what constitutes a desirable bundle of housing services.

That differing preferences for neighborhood environments exist is substantiated by a number of studies. For example, Boal found in Belfast that households were segregated into Protestant and Catholic neighborhoods: each group perceived the neighborhood of the other as an unfavorable environment in which to live. Similarly segregation along ethnic lines in Boston is cited by Gans and Firey as attributable to variable preferences. In fact a body of literature has developed around a social choice hypothesis in which the mosaic of ethnic and racial neighborhoods in cities is said to be the result of peoples' preferences to live near those with similar backgrounds and value systems. Bell


\[22\] Gans, The Urban Villagers.

\[23\] Firey, Land Use In Central Boston.
cites preferences for a lifestyle called "familism" as the reason that some households move to the suburbs. A study by Duncan and Duncan purports to show that segregation by occupation is a result of such social choice. A recent study by Moriarty comparing the "economic competition hypothesis" and the "social choice hypothesis" lends support to the latter rather than to the former.

However, the validity of these findings is open to some question. It can be argued, for example, that competitive processes in a context of homogenous preference functions might generate the same patterns as those found in the Duncan and Duncan study. Most of these social choice studies have also assumed that the preferences of differing groups are mutually exclusive. In other words it is assumed that each member of a group prefers to live among other members of the same group and no household prefers to live among those of a differing group. This assumption precludes


the possibility of different groups competing for the same environments or neighborhoods. In the case of Belfast where religion was the primary dimension differentiating preferences this seems to have been the case. Likewise this assumption of mutually exclusive preferences may have been true of much of the segregation by ethnic groups in American cities in the past. However, the major dimensions of preferences for neighborhoods in most American cities at the present time appear to be racial and economic. The available evidence seems to indicate that differing preferences for these two components of residential environments are not mutually exclusive. For example, while most whites appear to prefer white neighborhoods, many blacks appear to have a preference for mixed black and white neighborhoods. Likewise while most middle class households prefer middle class neighborhoods, lower class households prefer more socially integrated neighborhoods. Since it is impossible for both sets of preferences to be met the group whose preferences are satisfied is, therefore, decided by a competitive process.

Some of the literature examined here, however, would seem to suggest that households have preferences of varying intensity for the racial and socio-economic composition of neighborhoods. This variable intensity of preference is based on certain household characteristics. For example, there is some evidence that white households with children have a stronger preference for all-white neighborhoods than households without children. Support for this is found in the Bagley Community in Detroit where white households with children were more likely than households without children to consider relocating when their neighborhood became racially integrated. Bell reported that households listing "familism" as a preferred lifestyle were more likely to choose suburban locations than other households. Presumably this can be at least partially attributable to the greater socio-economic homogeneity found in many suburban communities. That socio-economic homogeneity is preferred by households with

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children is supported by Downs. He maintains that households with children would prefer to have their children associate with playmates who will give peer group support to the value system preferred by the parents.

There is also reason to suspect that housing tenure might be associated with preferences for differing neighborhood composition. This would appear to be particularly true in the case of neighborhood racial composition. Apparently many whites believe that property values will decline when a neighborhood is integrated. White households owning their own housing are, therefore, more likely to be concerned with integration than renters. However, for reasons to be discussed later they may be less likely to re­locate than renters when threatened by integration. Absentee owners may also be concerned with the effects of integration, but their decision to sell does not of necessity mean a change in social class composition.


Not only do preferences vary across households; the major attributes of housing seem to vary in importance. From the discussion above the major dimensions of preferences would seem to be for racial or socio-economic compatibility in neighborhoods rather than for accessibility or physical characteristics of the housing unit. The evidence seems to be mounting that both neighborhood and jurisdictional attributes of housing are increasing in importance as determinants of household location. The issues of education, tax rates, and crime protection are appearing more frequently in the popular and academic literature as stimuli for neighborhood change. Attention now turns, therefore, to the relative importance of the housing attributes identified above.

Research indicating that neighborhood socio-economic considerations have important effects on housing values suggests the importance of neighborhood quality in household location decisions.\textsuperscript{36} As already indicated what constitutes neighborhood quality seems to vary across households. However, in general households appear to be concerned with socio-economic and racial characteristics of a neighborhood as indicators of a number of important neighborhood attributes. Neighborhood socio-economic and racial characteristics may be seen by households as indicators of the crime rates, the peer group support which might be

\textsuperscript{36}In this case lower housing values are assumed to be an indication of reduced demand meaning that households would rather not locate there.
expected in the community, and the propensity to maintain property. Evidence that these attributes of neighborhoods are of concern to households is provided by Leven, Rapkin and Grigsby, Little, and Downs.

The literature dealing with neighborhood effects is rather extensive. Moreover, neighborhood effects are usually assumed to be more important as a determinant of residential change than either housing characteristics or accessibility. According to the invasion-succession process, for example, a neighborhood changes as competing groups or land uses increase in importance. Residential change in the neighborhood resulting from this invasion-succession process supposedly occurs as a result of the incompatibility of the competing groups or land uses. The original

37 Charles L. Leven, et. al., Urban Decay In St. Louis, Institute For Urban and Regional Studies, St. Louis, Missouri, March, 1972, Distributed by National Technical Information Services, U. S. Department of Commerce.

38 Rapkin and Grigsby, The Demand For Housing In Racially Mixed Areas.

39 Little, "Residential Preferences."

40 Downs, "Residential Segregation By Income."

41 The invasion succession literature in particular is based on an assumed neighborhood effect even though it may not always be discussed in those terms.

42 Duncan and Duncan, The Negro Population of Chicago.
inhabitants and potential inhabitants of the neighborhood may find the negative externalities generated by the new group sufficiently distasteful to induce them to locate elsewhere. These externalities may stem from different behavior patterns, different attitudes about the maintenance of property, or higher crime rates. These differences appear to be related to socio-economic status. When lower socio-economic status households move into a neighborhood the present or potential residents are, therefore, induced to locate elsewhere.

Evidence of the importance of these negative externalities is presented by those researchers examining racial change in neighborhoods and to a lesser extent socio-economic change. For example, it has been found that as blacks move into a neighborhood there is a "tipping point" where the process of change from a white to a black neighborhood is accelerated. This tipping point or percentage of blacks that will induce rapid residential change appears to be between ten and twenty-five per cent. However, Pryor suggests that it is not the percentage of blacks in the neighborhood which is important, but instead the proximity to

43 Leven, et. al., Urban Decay; Rapkin and Grigsby, The Demand For Housing In Racially Mixed Areas.

"nearly-all-black" neighborhoods. In either case it is the externalities or potential externalities that set the process of change in motion. Blacks, for example, appear to possess what Harvey says is a trait of lower classes in general and one which they would rather not have: the ability to induce those in close proximity to move. It appears then that neighborhood quality is one of the more important attributes of housing quality.

There is also reason to believe that the attributes of housing determined by the jurisdiction in which it is located are becoming increasingly important. In particular, disparities between central cities and suburbs in the provision of public goods and tax rates levied to provide those public goods are becoming more pronounced. This difference usually takes the form of lower taxes and higher quality public services in suburban political jurisdictions rather than in central cities. As conceived by Rothenberg these disparities lead to suburbanization by those who stand to gain most from the lower taxes. A similar theoretical argument is provided by Stigler who points out that when local governments engage in differing amounts of

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redistribution of wealth migration is induced. If a local government imposes a tax or provides benefits that are more progressive in their impact than a tax in a neighboring jurisdiction, those residents who are contributing more in taxes to the local jurisdiction than they receive in benefits have an incentive to migrate to a jurisdiction where taxation and provision of public goods are less progressive.\textsuperscript{48} Given that central cities have large lower income populations whose need for services exceeds their ability to pay, it is thought that there is considerable redistribution of wealth to them from the upper and middle income households located there.

There has been little empirical research conducted on the relative importance of the jurisdictional component of housing quality. However, there is some indirect evidence that it is an important attribute of housing. In particular, suburban zoning regulations limiting the number of multiple family dwellings, or the number of two and three bedroom apartments indicates that households attach considerable importance to keeping out of their jurisdictions those imposing additional costs or reducing the

services available for those already residing there. Consistent with this is the finding by Bradford and Kelejian that the larger the proportion of low income households in the city the greater the tendency toward upper income suburbanization.

In other literature on the social class geography of urban areas the roles of accessibility and lot size are frequently assumed to be important in determining the location of various income groups. For example, in land use models of urban structure it is assumed that the allocation of households to sites is accomplished by trading off accessibility and spacious lot size. Lots in less accessible locations are potentially more spacious as a result of lower land costs. In addition the income elasticity of demand for space is assumed to be greater than the income elasticity of demand for accessibility. As income

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51 Alonso, Urban Economics, pp. 55-63; Muth, Cities and Housing; Wingo, Transportation and Urban Land.

52 Muth, Cities and Housing, p. 30.
increases households are, therefore, willing to pay more for transpor-
tation in order to obtain the more spacious lots found at
greater distances from the point of maximum accessibility.

More to our point, however, these models suggest an income
geography such that the lowest income households occupy the most
accessible locations close to the center of the city and higher
income households occupy sites farther from the center of the
city. Over some time the only changes in this geography are
likely to be an outward movement of all groups if real incomes
increase, if there is an increase in the size of the lower income
population, or if transportation costs decline. Any of these
changes are likely to result in movement of upper income house-
holds outward -- and possibly out of the political central city for
the highest income groups.

In evaluating this literature there is some evidence that
households have less strong preferences for accessibility to work
places than these land use models have assumed. In fact survey
research by Butler, et. al. seems to indicate that accessibility
to work places is relatively unimportant to households in their
locational decisions. This appears to be true up to some thresh-
old travel time of about forty minutes. Moriarty also finds

53 Ibid., p. 17-45.

54 Edgar W. Butler, F. Stuart Chapin, Jr., George C. Hemmens,
Edward J. Kaiser, Michael A. Stegman, and Shirley F. Weiss,
Moving Behavior and Residential Choice: A National Survey,
Washington: Highway Research Board, Research Program Report 81
accessibility to workplace relatively unimportant in residential choice. Guest, too, finds very little relationship between the social status of neighborhoods and distance from the C.B.D., suggesting that households may not be allocated to sites strictly on the basis of the accessibility-lot size trade off. The validity of land use models for explaining the social class geography of urban areas is, therefore, open to some question.

Finally, there is considerable research that would seem to indicate that characteristics of the housing unit itself are very important in household location. The filtering literature, for example, emphasizes that age of the unit is important. Within submarkets households are assumed to filter upward to newer housing stock. This means that as new housing is built within that submarket the upper income households will move into the new

55Moriarity, "Socio-Economic Status;" and Moriarity, "A Test of Alternative Hypotheses."
56Guest, "Neighborhood Life Cycles."
57There is a debate within the filtering literature over whether households filter up or housing filters down. Differing positions on this are taken by: Ratcliff, Urban Land Economics; Fisher and Winnick, "A Reformulation;" and Lowry, "Filtering and Housing."
58The housing market can be divided up into single family dwellings, rental single family, multiple family units, etc. Each of these categories can be conceived as a market within which filtering can occur. Relatively little movement occurs between submarkets. These submarkets are discussed in William G. Grigsby, Housing Markets and Public Policy (Philadelphia: University of Pennsylvania Press, 1963).
units leaving the slightly older for those with slightly less income. This process continues until households at the lowest income level also move to the slightly better quality housing vacated by the next higher income group.

According to these models change occurs in neighborhoods as the old residents move to newer and, therefore, better housing elsewhere and are replaced by new residents: the new residents will be moving from older and, therefore, poorer quality housing. At any given time the social class composition of a neighborhood will consequently be a function of the age of the housing stock. Given that the outer portion of the city is where vacant land is available for construction most new housing is likely to be constructed in outlying areas, whereas, the oldest housing is likely to be found near the center of the city. If one could assume that households do indeed move from older housing to newer and that higher income households successfully compete for the newer housing then one might expect to find the lowest income households near the center and upper income households on the outer edges of the city. Such a process would result in upper income households being the first to be lost to the political central city. The resulting social class geography would be that found by Schnore in a majority of the urban areas examined by him.59

However, some empirical analysis indicates that age of the housing stock is of much less importance in the process of filtering than neighborhood socio-economic characteristics. In fact it has been found that proximity to blacks is more likely to result in declines in the price of housing than aging of the unit. In recognition of this process some research has focused on the filtering of neighborhoods rather than of housing units. A neighborhood may be said to have filtered downward if, when ranked by a housing price index for two successive times, it is ranked lower at the second time than the first. If, on the other hand, it is ranked higher, it may be said to have filtered upward. This body of literature emphasizes that neighborhoods filter as a result of changes in socio-economic composition in that neighborhood or in nearby neighborhoods. This would seem to indicate that characteristics of the housing unit itself are of lesser concern in the filtering of housing than the quality of the neighborhood. The apparent filtering of housing may then have been attributable to changing socio-economic characteristics of the neighborhood rather than to the age-related deterioration of housing.

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60 Leven, et. al., Urban Decay.


62 Leven, Urban Decay, p. 3.
All of the above attributes of housing may enter into residential preferences. However, the evidence seems to indicate that neighborhood and jurisdictional considerations are considerably more important than either accessibility or physical quality of the unit. In attempting to explain neighborhood change, an examination of neighborhood and jurisdictional considerations would, therefore, appear to be more productive than an examination of accessibility or housing quality attributes.

As conceived in this dissertation the allocation of the preferred housing attributes to households occurs through a competitive process according to the resources available to each household. The role of resources is addressed in the following discussion.

iii) Resources: The competitive process referred to earlier is thought to occur in two arenas. First, households are allocated to housing units through the market process where the ability to compete is determined by the economic resources available to a household and the knowledge it has about the market place. Second, competition for high quality environments may also occur in the political arena where the same two resources can be important. 63

In the market place higher income may be important in enabling a household to outbid its competitors for a preferred

63 Cox, Conflict, Power and Politics In The City.
neighborhood. Lower income households on the other hand may be forced to accept less preferred neighborhoods. In a more complex way higher education may also facilitate successful competition in the market place. More highly educated households may, for example, have a wider range of information sources and, therefore, be aware of many more housing alternatives. Higher education may also provide households with more information about how market processes bring about change. As a result such households may be more sensitive to potential threats to a neighborhood than less educated households. Pryor has suggested, for example, that the prime inducement to rapid racial change is a large concentration of blacks in proximity to the neighborhood in question which creates expectations that racial change is inevitable.\textsuperscript{64} Little, et. al., make similar points with respect to the importance of expectation in inducing change in a neighborhood.\textsuperscript{65} In such a situation those who understand market processes are likely to be more sensitive to these potential threats. More highly educated households are more likely to understand the process and, therefore, to make necessary adjustments in location decisions.

In the political arena resources also play an important role in the competitive process. Households with higher educational levels may be more articulate and have more information about the

\textsuperscript{64} Pryor, "An Empirical Note On The Tipping Point," pp. 413-17.
\textsuperscript{65} Little, "Residential Preferences."
relative weakness or strength of pressure points in the decision making process. They may, therefore, be able to influence the appropriate public official and gain concessions for their neighborhood in the way of superior public goods. In the same way the highly educated household may be proficient in influencing zoning decisions or organizing neighborhood groups both of which may work to maintain the status quo in neighborhood residential composition.

Superior financial resources also help households compete in the political arena by enabling them to purchase the expertise and information needed to resist changes in their respective neighborhoods. Financial resources may likewise be useful in lobbying efforts at city hall. The promise of contributions to the campaigns of local politicians may, for example, result in special projects aimed at improving the neighborhood of contributing households. Households may utilize resources to hire lawyers to fight zoning changes or initiate programs that would enhance residential stability.

The ability to compete in the political arena seems particularly important to households attempting to preserve or enhance the social composition of the neighborhood where they already live. For example, in the case of the Hyde Park Community in Chicago the availability of resources helped maintain the
composition of a community threatened by forces of change. On the other hand, market competition appears to be more important to relocating households.

In general the distribution of resources when combined with differing preferences for neighborhoods and the attributes of housing will determine the social class geography of cities. Our concern now is with the interplay of the components of this model in producing various social class geographies.

iv) Competitive Mechanisms and Residential Patterns: Within cities the socio-economic quality of neighborhoods appears to be the most important attribute of housing. For upper and middle class white households it also seems that the most preferred aspects of neighborhood quality are middle classness and whiteness. On the other hand black and lower class white households, at least to some extent, seem to prefer heterogeneous or integrated neighborhoods. Under these circumstances neighborhoods will be allocated to households on the basis of ability to compete. Those households with more resources are most likely to obtain the preferred environments, whereas those with few resources will not have their preferences met.

If one could assume a closed system where there is no in-migration, housing in the least desirable neighborhoods would be allocated to households with little income and education.

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*Molotch, Managed Integration, p. 215.*
Those households with enough resources to acquire slightly higher quality environments would be found around the periphery of the lower class neighborhoods. This assumes, of course, that environments in close proximity to blacks or lower class white neighborhoods are perceived as less desirable. As a result of the negative externalities generated by lower class households, middle class households would prefer to be farther away. However, they do not have sufficient resources to compete with the upper class households who are allocated to the highest quality neighborhoods. The outcome of this bidding process is, therefore, an urban residential pattern where the upper and lower class households are separated by a middle class buffer.\(^{67}\) One can, therefore, conceive of a geographic arrangement in which there are boundaries between lower class and middle class areas and between middle and upper class areas respectively. Consider now the implications of this arrangement for the competitive bidding process.

In a city where the housing market is in equilibrium, the price that middle class households are prepared to bid for housing on the boundary between lower and middle income neighborhoods will be the same as what lower class households are prepared to bid for the same housing. The same situation exists with respect to the boundary between middle and upper class neighborhoods. Neither will lower class households be able to purchase housing in

\(^{67}\)Harvey, et. al., *The Housing Market and Code Enforcement.*
higher class neighborhoods. On the other hand, higher class households are not likely to want to purchase housing in lower class neighborhoods as a result of the less desirable environment there. The situation described here implies a monotonic increase in housing value as one moves from the lowest income areas to the highest income areas. There is as a consequence, no incentive for any household to move nor for boundaries between neighborhoods to shift. The housing market is, therefore, said to be in equilibrium.

However, Bailey has suggested an equilibrium situation which would appear to differ from the one described here. As applied to the expansion of black neighborhoods the assumption is made that whites prefer to live only among other whites; blacks on the other hand, prefer to live in integrated neighborhoods. As a result blacks are willing to pay more than whites for housing on the boundary between white and black neighborhoods. Whites who would prefer not to live next to blacks will pay relatively less for housing on the boundary between the two neighborhoods. As a result owners of that housing will rent or sell to black households. By this process the boundary between blacks and whites may steadily advance into previously all white neighborhoods.

Social class, however, has some complicating effects. When black neighborhoods are adjacent to middle class white

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neighborhoods, the process described results in an expansion of the boundaries of black neighborhoods. However, when black neighborhoods are adjacent to upper income neighborhoods the price differentials for housing between the two neighborhoods are greater. As a result the price that black households are willing to pay for housing on the boundary still may not be high enough to match the reduced price that white households are willing to pay for the same housing. When the premium price that black households are willing to pay for boundary housing is equal to the discount price that white households are willing to pay for the same housing, an equilibrium has been reached. According to this view it can be seen that black neighborhoods may encroach on middle income white neighborhoods, but not on upper income neighborhoods.

Leven has identified this process of occupancy shift at inter-neighborhood boundaries as arbitrage. This concept has been used to explain the steady expansion of black neighborhoods in St. Louis at a time when densities and thus to some extent, demand is declining in the center of those same neighborhoods. The model might also be applied to the boundary shifts between lower and middle income white neighborhoods. However, one might expect the difference in price on the boundary between white and black neighborhoods to be greater than the price difference on the boundary between lower and middle income neighborhoods. The

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69Leven, et. al., Urban Decay.
equilibrium situation would, therefore, be reached after relatively little expansion of the lower income neighborhood.

In most urban areas several processes may contribute to the disruption of this balance. It is these disequilibrating forces and their consequences which are of concern in the next section of this review.

v) Disequilibrating Forces: As a result of a number of forces equilibrium situations are unlikely to exist. First, perhaps the most widely recognized disequilibrating force is that of migration into the system from outside. This could be in-migration by any of the social class groups. However, in most large urban areas, particularly in the northeastern and north-central portions of the United States, the largest proportion of in-migrants have been lower class and black.\footnote{Charles Tilly, "Race and Migration To The American City," \textit{The Metropolitan Enigma} ed. by James Q. Wilson (New York: Doubleday & Company, 1970), pp. 145-69.} The increased number of these households has led to a greater demand for housing in lower class and black neighborhoods.\footnote{Ibid.} One would, therefore, expect that the boundary of such neighborhoods might advance into heretofore middle class neighborhoods unless some method of preventing that encroachment exists.

In-migration by any other social class could have similar effects. An in-migration of upper class households might expand
the boundaries of upper class neighborhoods toward the middle class neighborhoods and an in-migration of middle class households might result in an expansion of boundaries of middle class neighborhoods into both lower and upper class areas. Consequently, in-migration may induce neighborhood change.

Second, changes in real income or declining transportation costs may also induce neighborhood change. According to the land use models discussed earlier, lower transportation costs or higher real income will result in a decline in the importance of accessibility. As the importance of accessibility declines households will supposedly opt for more spacious lots at greater distances from the center of the city. This outward movement will not necessarily change the locations of different social class groups relative to one another. It may, however, result in a change in the social class geography of urban areas in so far as those formerly on the outer edge of the central city have moved across the city boundary into a suburban jurisdiction.

Third, in addition to increases in demand for housing in different neighborhoods, changes in the supply of housing alternatives may also be an important disequilibrating force. Leven found that in St. Louis the destruction of large numbers of low quality housing units in the urban renewal process raised the price that low income and black households had to pay for housing

72 Muth, Cities and Housing, pp. 21-39.
by reducing the supply. An increase in the price that low income households are willing to pay for housing has the effect of moving the boundary between low and middle income neighborhoods farther toward the latter. At the same time that the supply has been decreased for lower class households, the supply of housing opportunities for middle class households has been increasing. This is due to the various government housing programs such as FHA or VA insurance of mortgage loans and the income tax deduction for interest on home loans which stimulate housing construction in suburban areas. This expanded supply then reduces the price that low income households have to pay in order to outbid middle class households for erstwhile middle class housing and, therefore, facilitates a shift in the boundaries between lower and middle class areas toward the latter.

When the housing market equilibrium is disturbed by the forces mentioned above households will experience some dissatisfaction, referred to in the literature on household mobility as locational stress. This results when there is some difference

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73 Leven, et. al., Urban Decay.

74 Marion Clawson, Suburban Land Conversion In The United States (Baltimore: Published For Resources For The Future by the Johns Hopkins Press, 1971), pp. 33-46.

between the preferred environment of a household and its current residential environment. Stress may result, therefore, when the environment or neighborhood changes or when the characteristics of the household change. For example, if a neighborhood is undergoing social integration, households preferring middle class neighborhoods will experience some stress. On the other hand, if there is a change in the household such as the addition of a child when the size of the housing unit is insufficient to meet the expanded needs, stress may also result.

When stress reaches some threshold level households are induced to take some action to alleviate it. In the context of neighborhood changes action may be of two types: households can restructure the present environment either through collective action or through privately altering movement patterns; alternatively, stress can be reduced by a relocation strategy. 76

In the relocation strategy the household is removed from the disutility associated with the original environment to an

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alternative environment. For example, when the quality of the environment declines as a result of increased crime or higher taxes, the resulting stress can be alleviated by relocating to an environment where crime and tax rates are both lower. This relocation of households from the original environment is likely to continue until a new equilibrium is reached.

Although not discussed in those terms the invasion-succession literature appears to be based on such a conceptualization.\textsuperscript{77} As households of a different socio-economic, ethnic, or racial composition move into a neighborhood stress is created for some of the original households. Perhaps even more important, potential stress is created for households that would otherwise choose to locate in that neighborhood. Instead the original residents and the potential in-migrants choose alternative neighborhoods where stress can be minimized. This change will eventually result in a new equilibrium situation in the original neighborhood. In this equilibrium, neighborhoods may have substantially changed their socio-economic, ethnic, or racial composition. When this relocation strategy is adopted to alleviate the stress caused by disequilibrating forces, substantial neighborhood change is likely to be the outcome.

\textsuperscript{77}These alternatives are recognized by Molotch in an evaluation of change in Chicago Communities, Molotch, \textit{Managed Integration}. 
For those households with sufficient resources, on the other hand, a strategy of restructuring the environment may be possible. Restructuring the environment can be accomplished by a variety of techniques. For example, coalitions may be formed to obtain zoning changes to prevent conversion of single family homes to multiple family homes. These coalitions or neighborhood organizations may pressure block busting real estate agencies, or obtain from city governments public projects to upgrade the quality of respective neighborhoods. All of these may be designed to slow the process of change by making the neighborhood attractive for in-migrants who are of the desired type or to persuade existing residents to stay. Molotch found neighborhood organizations engaging in such strategies in Chicago with varying degrees of success. Since many neighborhood groups may be attempting the same thing, it is a competitive strategy: those neighborhood organizations with the most resources are more likely to be successful. This is confirmed in Chicago.

A second type of restructuring strategy is a private one. This may involve altering movement patterns so as to avoid sources

78 The importance of resources and the role of neighborhood organizations in restructuring the environment is conceptualized by Cox, Conflict, Power and Politics In The City.

79 Molotch, Managed Integration, p. 215.

80 Ibid., p. 215.

81 Ibid.
of neighborhood disutility. Patronizing private schools rather than public schools is one such strategy. Individuals may also choose to seek out friends in other parts of the city or shop in different shopping areas so as to avoid contact with those providing disutility. However, this private restructuring strategy requires substantial resources and is, therefore, more likely among upper class households than among lower or middle class households.

The "restructuring-the-environment" strategy has been largely overlooked in the neighborhood change literature. Researchers seem to have assumed that the relocation strategy is the only alternative other than tolerating higher levels of stress. The restructuring strategy is one which would seem to be carried out primarily in the political arena. There is increasing evidence that the political process provides goods and services inequitably across neighborhoods in urban areas. Furthermore, the level of provision seems to be closely related to the bargaining resources available to differing neighborhoods. Owen finds, for example, that school quality is highest in high income neighborhoods while Boots finds that streets are of lower quality in low income neighborhoods. \(^{82}\) It would seem that the success of neighborhood

organizations in obtaining these services is evidence that restructuring the environment is indeed an important strategy in maintaining environmental quality.

**Summary**

In this chapter an attempt has been made to present and evaluate some of the literature relating to the conceptualization of neighborhood change basic to this dissertation. First, attention was given to a body of literature dealing with the differential distribution of middle and upper class households between central cities and suburbs. Second, literature was evaluated that suggests processes by which various social class geographies are generated.

In examining the literature on the distribution of social class groups in urban areas it was found that the predominant pattern is one of upper class suburbs and lower and middle class central cities. However, some urban areas are characterized by middle class suburbs and upper and lower class central cities. Several correlates of these patterns were also examined. Some evidence suggests that cities evolve from a pattern of lower class suburbs and upper and middle class central cities to a pattern of lower and middle class central cities and upper class suburbs. The pattern of middle class suburbs and lower and upper class central cities would then be a transitional stage.

In focusing on the process generating these residential patterns emphasis was put on the housing market. First, the
attributes of housing were identified along with the bodies of literature focusing on those attributes. Housing was conceived as being characterized by four attributes: accessibility, physical characteristics of the housing unit, neighborhood environments and jurisdictional environments.

Second, the role of preferences in determining household location was examined. Preferences for socio-economic, ethnic, and racial attributes of housing were found to vary. However, it was suggested that preferences for these attributes are not necessarily mutually exclusive. Differing preferences may in some cases result in competition for the same neighborhood. The varying housing attributes were also found to vary in importance. It appears that neighborhood attributes of housing are becoming increasingly important in household locational decisions. In particular, racial and socio-economic status of neighborhoods were found to be receiving increasing attention in the literature. The services and tax obligations which are part of housing quality also seem to be attracting increasing attention as determinants of household location. Accessibility was considered and found to be, within certain limits, of relatively little importance in household location decisions. After examining the role of the physical attributes of housing units and particularly the role of housing age in the deterioration of housing quality, it was concluded that neighborhood characteristics contributed more to that deterioration than the age of the unit.
Third, the role of resources in determining the neighborhood quality enjoyed by a particular household was discussed. In particular, it was suggested that education and income are important in competing for desired environments. These resources were seen as important in both the market place and the political process.

Fourth, the residential patterns that one might expect when the housing market is in equilibrium were described. One would expect that the higher quality neighborhoods would be allocated to those households with more resources. The resulting pattern would be for lower class neighborhoods to be surrounded by middle class neighborhoods which are in turn surrounded by upper class neighborhoods.

Fifth, disequilibrating forces were identified along with likely resulting neighborhood changes. The major disequilibrating forces were thought to be in-migration into the system, changes in income levels and destruction of, or additions to the housing stock.

Finally, strategies for coping with the stress caused by disequilibrium were identified. Some households may choose to relocate to other environments where stress will be alleviated. Alternatively, if sufficient resources are available, households may restructure their present environments to remove or avoid the situations creating stress. This restructuring strategy can either be a collective process or a private action.
Having reviewed the literature in the context of a general model of neighborhood change, the next task is to present the specific model of change to be evaluated in this dissertation. The next chapter presents that model and some hypotheses arising from that model.
THE BLOW-OUT PROCESS: A CONCEPTUALIZATION

Chapter 3

Introduction

The purpose of this research is to evaluate across cities of the United States the process of residential change and its contribution to suburbanization. Of particular concern is the differential rate of suburbanization by upper and middle class households in response to locational stress. Much of the literature on residential patterns and residential change reviewed in the previous chapter seemed to indicate that it is upper class households who are most likely to choose suburban locations. This would leave central cities with mostly lower and middle class households. This research questions that assumption considering instead the possibility that middle class households are most likely to suburbanize.

The object of this chapter is to provide a model of neighborhood change which can be empirically evaluated. The components of the model are specified here along with some more or less plausible speculations as to how they interact to produce residential change in American cities. From this model a set of hypotheses is derived for evaluation in succeeding stages of the research.

In the initial portion of this chapter the components of the model are outlined. The model to be evaluated is derived from the
conceptualization developed in the previous chapter emphasizing what are perceived to be its more important elements. As defined here they include households with variable preferences, resources, and housing environments.

In a second section an attempt is made to deduce the outcome of the interaction of the components of the model. First, it is pointed out that as a result of their residential location, households in middle class neighborhoods are subjected to more stress than households in upper class neighborhoods and are, therefore, more likely to choose suburban locations. Second, middle class households also have fewer resources with which to restructure their present environment when faced by increasing stress. They are thus more likely to locate in suburban environments than upper class households. When faced by stress upper class households have the resources necessary to restructure their present environments. The resulting decline in the number of households living in middle class neighborhoods of a city relative to the number of households living in upper class neighborhoods is called blow-out.

Third, variables hypothesized as contributing to variations in blow-out across cities are specified. These include characteristics of the impacted households such as life cycle status and tenure status. Environmental variables to be considered include crime rates, tax rates, school expenditures, the socio-economic composition of the central city, and the relative locations of social class groups.
Finally, on the basis of the conceptualization, specific hypotheses are derived for evaluation in later stages of the dissertation.

Components of the Model

The theoretical model of residential change proposed here is dynamic in nature; that is, given a set of input values for a city, the model should be able to simulate the process of residential change for that city. The components of this model include households with preferences for environments and resources which can be used to compete for the environments preferred.

Associated with household preferences are such characteristics as: social class, race, life cycle stage and housing tenure. For example, it is thought that upper and middle class households with school age children are more likely to prefer all white environments than elderly households. One might also expect owner-occupying households to be more concerned with environmental quality than renting households:¹ in the case of house owners environmental quality will affect exchange value as

¹See Chapter Two for a discussion of the relationship between children or housing tenure and preferences for segregated environments.
well as use value of housing. These household characteristics are included in the model since they are thought to be related to the strength of preferences for racial or socio-economic homogeneity in a neighborhood. The large amount of literature referred to in the previous chapter seems to indicate that this homogeneity is the most important of the housing attributes preferred by households.

In competing for preferred environments resources are assumed to be of critical importance. In particular educational and economic resources are thought to be important determinants of locational choice. As a result of superior resources upper class households may be allocated locations away from stress producing agents and may also be able to maintain neighborhood quality while remaining within the central city. On the other hand households with little in the way of political and economic resources may find that they cannot obtain or maintain the neighborhood that they would like. They are, therefore, more likely than upper class households to choose suburban locations.

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2 The distinction between use and exchange value is that the former refers to the utility that a household receives from use of a housing unit. The exchange value is the price that a seller may obtain for that property in the market place. These values are in all probability seldom equal. These concepts are discussed in greater detail in David Harvey, The Society, The City and The Space Economy of Urbanism, Resource Paper, College Commission on Geography, No. 18, Association of American Geographers (Washington, D. C., 1972), p. 16.

3 See Chapter Two of this dissertation for a review of the importance of resources. Also see Cox, Conflict, Power and Politics In The City, Chapter 4.
The model also assumes housing environments characterized by variation at both neighborhood and jurisdictional scales. As discussed in the previous chapter there seems to be increasing evidence that neighborhood socio-economic and racial composition and the level of public goods provided and taxes imposed by a local government within its jurisdiction are the most important attributes of housing services. These are, therefore, the housing attributes considered here.

At the neighborhood level the behavioral externalities imposed as a result of the social class composition of adjoining neighborhoods, the racial composition of adjoining neighborhoods or perhaps the quality of local schools are all of significance. Harvey points out that these externalities exist as a spatial field effect which might be characterized by a distance decay function. The spatial field or extent of such a neighborhood effect is assumed here to decline with distance from the source in

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4 The division of environmental quality into neighborhood and jurisdictional effects may be similar to Wolpert's dichotomy of interest in neighborhood change. He divides response to change into community response and local government response. The former is based primarily on neighborhood externality effects and the latter on fiscal externalities provided to the entire jurisdiction. Julian Wolpert, Anthony Humphrey, and John Seley, Metropolitan Neighborhoods: Participation and Conflict Over Change, Commission On College Geography, Resource Paper No. 16, Association of American Geographers (Washington, D.C., 1972), pp. 13-18.

a fashion similar to the decline in intensity of social action spaces. That frequency of social interaction with other households declines with distance from an individual's residence has been confirmed for Cedar Rapids, Iowa; there is no reason to believe it is not applicable elsewhere as well.

Jurisdictional components of housing environments include those attributes supposedly varying across, but not within jurisdictions. These may include the level of funding for education, the rate of taxation levied to support city services, and the level of crime control within the jurisdiction. The quantity or level of these attributes is fixed by city government for all residents of that city and by law should be uniform across all residents. Despite this legal principle, however, and as we shall discuss later, there appears to be some variation in their real distribution.

The Blow-Out Process

A process hypothesized by Harvey and which he has termed "blow-out" would seem to fall within the conceptual framework

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6 Social action space is discussed by Morrill and Pitts as direct day to day contact. They confirm that there is a decline in intensity of daily contact with distance away from the actor. Holmes also focuses on a distance bias to social interactions. Richard Morrill and Forrest R. Pitts, "Marriage, Migration and the Mean Information Field: A Study In Uniqueness and Generality," Annals of the Association of American Geographers, LVII (June, 1967), pp. 401-22; John Holmes, The Spatial Properties of Urban Interaction Spaces, unpublished Ph.D. Dissertation, Ohio State University, 1974.
developed in this dissertation. Briefly it is hypothesized that middle class households are disappearing from central cities in greater proportions than upper class households. As conceived by Harvey, this process assumes middle class neighborhoods located between expanding lower class neighborhoods and established upper class neighborhoods. It is assumed that households in the expanding lower class neighborhoods impose negative externalities upon those in close proximity. These negative externalities may stem from different behavior patterns, different attitudes toward schools, different attitudes about the maintenance of property or higher crime rates. As a result both upper and middle classes would prefer to maintain some geographic distance between themselves and the expanding lower class.

However, since lower class households are frequently surrounded residentially by middle class households, it is the latter which are usually more proximate to the negative externalities produced. This pattern is apparent in Milwaukee, for example (see Figure 1). In an attempt to avoid the negative externalities imposed by lower class households, middle class households, therefore, choose to locate in suburban jurisdictions, while upper class households are isolated from the lower class households by a dwindling middle class buffer. This process is expressed by Harvey:

Figure 1 MILWAUKEE: Distribution of Social Class and Race, 1960
Social pressures emanating from below (which take on a variety of forms varying from a mere felt presence of a racial or poverty group, through to a fully fledged riot) pressure intermediate groups to move to acquire new use values, while intermediate groups cannot easily persuade richer groups to move by similar social pressures. Something has to give and a blow-out occurs. In this highly simplified model we find that the dynamics in the housing market are powered by social pressures emanating from below. There is abundant evidence for such a contention in most American cities; middle-income groups flee to the suburbs to get away from "them".8

Although mentioned only briefly by Harvey in the context of the above hypothesis it seems that the greater resources available to upper class households for restructuring the environment can result in the same pattern of middle class suburban flight and upper class neighborhood stability. Upper class households may be able to erect or maintain barriers to the entry of lower class households through zoning or through neighborhood organizations which (e.g.) restrict the sale of houses to unwanted groups. As a result of the political and economic resources available to them, upper class households may also be able to extract more from city government in the way of public goods than middle class households.9 For example, the implicit threat of moving to the suburbs and thus removing the resources needed by city governments may result in

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8 Harvey, et. al., The Housing Market and Code Enforcement In Baltimore.

9 One example of superior resources resulting in public programs for a neighborhood is the case of Hyde Park in Chicago. Renewal efforts by the city helped maintain the neighborhood as an attractive residential area. Harvey Luskin Molotch, Managed Integration: Dilemmas of Doing Good In The City (Berkley: University of California Press, 1972), pp. 131-73.
upper class households obtaining for their neighborhood better quality schools or more police patrols. Middle class households are, however, less likely to be able to engage in this strategy.

There are, therefore, two distinct situations which could lead to middle class households disappearing from central cities in larger proportions than upper class households. First, there is the hypothesized process where the relative locations of upper and middle class neighborhoods result in negative externalities being imposed on the latter to a greater extent than the former. In response to this, middle class households choose suburban locations and upper class households choose to remain in the central city. Second, there is the greater ability of upper class households to control their environment through private or public action. This reduces the stress for those households, and therefore, the incentive to suburbanize. Middle class households on the other hand lack the necessary resources to control their environment and thus choose suburban locations. The term "blow-out" includes both of these processes. The focus of this research is in determining to what extent this blow-out phenomenon exists across cities in the United States.

Inter-Urban Variation In Neighborhood Change

Given that the characteristics of both environments and households vary across urban areas in the United States, one might

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10 Cox, Conflict, Power and Politics In The City, p. 100.
expect the blow-out phenomenon to vary in a similar manner. In addition, and classifying the components of the conceptual model according to scale, blow-out might also conceivably vary as a result of the effect of neighborhood effects or jurisdiction-wide effects.

i) Jurisdictional Effects: Consider now the following jurisdictional effects. One might expect the rate of blow-out to be influenced by the potential increment in utility which can be obtained by relocating from the central city to the suburbs. Households might find lower crime rates in a suburban middle class neighborhood than in a central city middle class neighborhood. However, this is thought to be less true for upper class neighborhoods. This may result in part from the greater proximity of middle class neighborhoods in the central city to the lower class neighborhoods where criminal activity is more prevalent. It may also be attributable to the ability of upper class households to extract more police protection from central city governments. The latter is directly related to the greater educational and financial resources available to upper class households.

In the same way disparities in educational expenditures between central cities and suburbs can influence change. Higher expenditures in the suburbs are thought to make them more attractive to middle class households for essentially the same reasons as those mentioned above.
Likewise, differences in tax rates between central cities and suburbs may induce blow-out, but for slightly different reasons. As a result of the regressiveness of the property tax, middle class households will suffer relatively more than upper class households from the higher taxes found in central cities. Lower class households may suffer relatively more than upper or middle class households, but because of limited housing opportunities in the suburbs are unlikely to relocate. Middle class households are thus the most likely to seek out suburban locations.

Given that suburban areas are predominantly upper and middle class the magnitude of the effects described above may be related to the proportion of the central city's population that is lower class. For example, when the lower class proportion is large, one might expect middle class households to suffer disproportionately from the decreased educational budget, higher crime rate and higher taxes. Thus the disparities between central cities and suburbs in these areas will induce blow-out in direct proportion to the relative size of the lower class population.

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ii) Neighborhood Effects: In addition to jurisdictional effects a variety of effects are thought to contribute to blow-out at the neighborhood level. First, as a result of its implications for the distribution of negative externalities variation in the internal structure of cities is likely to result in different patterns of change. Given the negative externalities perceived as imposed by lower class households, one would expect that social class change would be greater in neighborhoods closer to those households. Given the process described above this would appear to be particularly true when middle class households are located closer to lower class whites or blacks.13

Second, the effect of proximity to lower class households is likely to vary with life cycle-related variables. For example, households with children may be more sensitive to proximity to blacks or lower class whites than households without children. This may be so because parents prefer that children not mix with those perceived as having different value systems from their own.14 As a consequence residential change may also be greater for such

13Harvey, et. al., The Housing Market and Code Enforcement In Baltimore.

Similarly, one might anticipate younger households with less equity in housing or less well established ties to the neighborhood to be more inclined to change residence rather than attempt to restructure the present environment.\(^{15}\)

Finally, one might expect housing tenure to affect the process of change in much the same way as life cycle status. For households owning their own homes, the "restructure the environment" alternative would seem a more attractive possibility due to a possible loss of equity consequent to relocation. For renters with no investment to protect the relocation alternative may be more feasible.

From the conceptual model developed here it is now possible to outline some specific hypotheses for evaluation. These are considered in the final section of this chapter.

**Hypotheses To Be Tested**

A variety of hypotheses regarding the pattern and process of neighborhood change can be identified.

A) In central cities the number of households living in middle class neighborhoods is declining more rapidly than the

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\(^{16}\) Molotch, *Managed Integration Dilemmas of Doing Good In The City*, pp. 9 and 131-47.
number of households living in upper class neighborhoods; i.e. a process of blow-out is apparent.

B) The differential rate of decline in the number of households living in upper and middle class neighborhoods respectively (i.e. the degree of blow-out) will vary across cities according to the following hypothesized relationships.

1. The greater the relative proximity of middle class neighborhoods to those perceived as generating negative externalities such as blacks and lower class whites, the greater the likelihood of suburbanization by the households of those particular neighborhoods.

2. The rate of decline in the number of middle class households in proximity to perceived negative externalities will be positively related to:
   a) The proportion of couples with children of school age,
   b) The youthfulness of the population, and
   c) The per cent of homes occupied by renters.

3. Higher crime rates in central cities relative to the suburbs will be positively related to the tendency for the number of middle class households to decline more rapidly than the number of upper class households.

4. Higher tax rates in the suburbs relative to central cities will be positively related to the tendency for the number of middle class households to become proportionately fewer than the number of upper class households.
5. Higher school expenditure in suburbs relative to central cities will be negatively related to the tendency for the number of middle class households to become proportionately fewer than the number of upper class households.

6. A higher percentage of the central city population which is lower class will be positively related to the tendency for the number of middle class households to become proportionately fewer in the central city than the number of upper class households.

Summary

The purpose of the present chapter has been to provide a conceptualization of the problem examined in this dissertation. A model has been developed according to which a set of interacting components result in a hypothesized process of residential change.

The initial section of the conceptualization outlined the important components of the model. These include households and housing environments. Households are characterized by life cycle, housing tenure and by the availability of resources. These characteristics are associated with a set of preferences for environments defined according to neighborhood and jurisdictional characteristics. An imperfect matching of households with environments results in stress. This stress then induces action on the part of affected households to improve the congruence of preference and environment. The adjustment strategy engaged in by households is
assumed in part to be a function of the type and amount of resources available to them.

A second section outlines a process of residential change as it occurs in small areas or neighborhoods within central cities of the United States. In particular it was pointed out that middle class households, as a result of their proximity to lower class households, see themselves as experiencing a decline in environmental quality. Changes in jurisdictional characteristics may also result in a decline in perceived environmental quality. When upper class households are similarly located with respect to lower class households or are faced with a general decline in environmental quality, superior resources enable them to protect their neighborhoods. Since they have fewer resources, middle class households are thought to be the first to leave the central cities for the suburbs. This process of differential neighborhood change is called "blow-out".

Third, the theoretical bases for inter-city variation in blow-out were discussed. Jurisdictional and neighborhood elements of environmental quality as well as household characteristics are included as determinants of such variation. Jurisdictional variables hypothesized to be important in this process include crime rates, public expenditures for education, tax rates, and the relative size of the lower class population. Neighborhood components of the environment included as important to blow-out are the relative locations of upper and middle class households with respect
to lower class households. Variation in household characteristics such as age, housing tenure and the presence or absence of children are also considered as important in a contingent sense.

Finally, a set of specific hypotheses was derived from the conceptualization of neighborhood residential change. These hypotheses are to be evaluated in subsequent stages of the research.

In the following chapter a research design is provided for testing the hypotheses developed from the conceptual model.
Introduction

In evaluating the hypotheses developed in the previous chapter, three stages of analysis are envisaged. As an initial step, the primary hypothesis that there is in fact a blow-out effect must be evaluated across a number of cities.

A second stage of analysis involves an attempt to explain the extent and variation of blow-out across cities in terms of a set of independent variables. One might identify the independent variables at this stage of analysis as jurisdiction-wide variables since they are aggregated to jurisdictional levels and vary across jurisdictions.

In the third stage of analysis the focus is on the variation in blow-out resulting from the relative location and social composition of upper and middle class neighborhoods. Independent variables used here include household characteristics; and, also the relative locations of upper and middle class neighborhoods with respect to black and lower class white neighborhoods.

Evaluating Blow-Out

Evaluation of the blow-out hypothesis assumes a time interval and a sample of cities. Given that blow-out assumes small area
change in social class, it is also necessary to construct a social class index relevant to the concepts under examination; and to determine exactly what constitutes upper, middle and lower class. These operational problems along with their theoretical bases are outlined in the following discussion.

i) Time Interval: Recall that the model of blow-out to be evaluated in this research is:

\[ Y_i = f\left( \frac{UC_i}{MC_i} \right) \]

where \( Y_i \) = the rate of blow-out in the \( i \)th city;

\( UC_i \) = the relative change in the number of people living in upper class neighborhoods for city \( i \) over some time interval;

\( MC_i \) = the relative change in the number of people living in middle class neighborhoods for city \( i \) over some time interval;

\( i = 1 \ldots m \); and

\( m \) = the number of cities in the analysis.

Blow-out occurs in a given city when, over a certain period of time the number of people living in middle class neighborhoods declines relative to the number of people in upper class neighborhoods; this may or may not be accompanied by an absolute decline in the number of people living in middle class neighborhoods. To evaluate blow-out one must, therefore, select a time interval that permits emergence of the stimuli thought to generate the blow-out process. In addition, the interval must allow sufficient time for
some behavioral response. For example, a new rate of property taxation may not be experienced by taxpayers for up to one year following its adoption. Dissatisfaction with that policy may occur immediately or may emerge after several succeeding years. If dissatisfaction results in a decision to move, the search and moving process may also extend over a rather lengthy period of time. The time interval should, therefore, probably be no less than five years and perhaps more. The U. S. Bureau of the Census provides data at ten year intervals. This would appear to be an appropriate interval.

The smallest areal unit providing the social and economic data needed for this study is the census tract. Census tracts are, therefore, used as observations and are referred to as "neighborhoods". The use of census tracts as "neighborhoods", however, is not intended to imply that the tracts possess any organic social qualities such as those usually connoted by the neighborhood concept. "Neighborhood" as used here refers only to small compact areas relatively homogeneous with respect to economic and social characteristics. However, it is recognized that these tracts frequently fall short of the homogeneity and compactness ascribed to them by the Bureau of the Census.

The necessary data are provided at the tract level only for 1950, 1960, and 1970. This means that only two intervals are

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available for analysis. The interval between 1960 and 1970 is chosen in part because there are more cities in 1960 from which to draw a sample than in 1950. The number of cities tracted by the Bureau of the Census rose from seventy in 1950 to two hundred and twelve in 1960. This was achieved primarily by including smaller cities than had been tracted in 1950. In addition, therefore, a larger range of city sizes is available for sampling purposes in 1960.

A further consideration in the selection of the 1960 - 1970 interval is the fact that central city-suburban disparities were much more pronounced then than during the previous decade. Since the greater residential utility of suburban jurisdictions for households is hypothesized as a major contributor to blow-out, an interval where the severity of disparities is greater should exhibit a commensurately increased tendency toward blow-out. The 1960's also saw an increase in central city crime rates, increased militance by blacks, and generally an increase in the relative size of black and lower class white populations in central cities. These changes should increase the intensity of neighborhood or

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negative externality effects for those in close proximity. According to the process hypothesized this should then result in a decline in social class composition in adjoining middle class areas.

ii) Sample Design: In order to obtain a sample of cities representative with respect to city size and regional location within the United States, a stratified sampling design was used. Representativeness with respect to city size and region is important since one might expect the intensity of both behavioral externalities at the neighborhood level and central city-suburban fiscal disparities to vary accordingly. It is felt, for example, that smaller cities are not likely to be characterized by the same degree of economic and racial segregation as larger cities. Negative externalities produced by lower class households are, therefore, more likely to be shared by both upper and lower class households. In the same way fiscal disparities between central cities and suburbs are likely to be less significant producing reduced tendencies towards suburbanization.

For similar reasons blow-out might be expected to vary across regions in the United States. Cities in northeastern

5 Cox, Conflict, Power and Politics, p. 123.

United States, for instance, appear to be characterized by greater central city-suburban fiscal disparities and have larger numbers of blacks and lower class whites in central cities than urban areas of the Southwest.\footnote{Cox, Conflict, Power and Politics, p. 121.} Stratification by region then serves to ensure the selection of cities differing as to the intensity of the variables producing blow-out.

iii) A Social Class Index: Evaluating the initial blow-out hypothesis is also contingent upon the development of a social class index. Towards this end two variables are used: median income and median education. The index constructed, therefore, is based on the two measures regarded as important in the conceptual model developed in Chapter Two. Income, for example, is assumed to be an important resource in competing in the market place for more or less desirable neighborhood environments. It may also be a resource in the political process. City governments, in attempting to retain higher income residents within their jurisdiction, may make concessions to them in the way of
more or better quality public goods. Income also gives households power in the market place. For example, income may be used to purchase the services of specialists such as lawyers capable of arguing effectively against requests for zoning variances. In brief, higher income is hypothesized as facilitating resistance to neighborhood change.

Education is also assumed to be important in competing in the political process and perhaps to a lesser degree in the market place. Higher educational levels may help individuals articulate preferences to decision makers. More educated individuals also tend to have more information. Education may, therefore, help in identifying the critical points of access in the public decision-making process. Pressure can then be exerted on those points to help preserve the neighborhood by gaining concessions for it.


Cox, Conflict, Power and Politics, p. 97-103.

Ibid.
Both income and education are assigned equal weight in the index constructed here. Each census tract is given a z-score based on its median educational level and its median income. These z-scores are then added to yield the index of social class. When households move out of a tract and are replaced by others with different education and income levels the social class score will change accordingly.

iv) The Class Delimitation Problem: In developing an index of blow-out the critical operational consideration is evaluating the rate at which the number of households living in upper class areas changed relative to the rate at which the number of households living in middle class areas changed. Unfortunately this raises the difficult question of what actually constitutes lower, middle and upper class.

In this study social class is a relative concept where the upper strata within a specific metropolitan area are considered upper class and the lower strata as lower class. As a consequence what is upper class in one metropolitan area may not be upper class in another. This definition of class can be justified in the context of the conceptual model outlined above where the focus is on competition through both the market place and the

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II A z-score provides a standardized measure of distance from the measure of central tendency. It is derived by dividing the standard deviation into the actual distance from the measure of central tendency.
political process for the more desirable neighborhood environments. Competition is between those households with relatively few resources (income and education) and those with relatively more. In order to succeed households must have more resources available than competing households and not merely some absolute level of income or education. In addition each metropolitan area is also assumed to be a single market area where the competition is for neighborhood environments only within that area. Absolute measures of social class derived from the society as a whole are, therefore, thought to be less appropriate than a metropolitan area-specific definition. Within each metropolitan area, however, definitions of lower, middle, and upper class are of necessity arbitrary. More will be said about the selection of these divisions later.

The Inter-Urban Scale of Analysis

As indicated in the conceptualization there are two processes contributing to blow-out. First, there are externality or neighborhood effects which fall disproportionately on middle class households and thus induce residential relocation to the suburbs. Second, there are jurisdiction-wide effects which are also hypothesized to result in blow-out. The inter-urban stage of analysis is concerned exclusively with jurisdiction-wide effects and the contribution they make to explaining variations in blow-out across the sample cities. This section includes a specification of the model to be evaluated, a definition and explanation of the
specific form of the variables used and a specification of the sample of cities across which the analysis is conducted.

The model to be evaluated assumes that variation in blow-out can be at least partially explained by jurisdiction-wide variables. Included in the model, therefore, are variables indexing the levels of public goods provided, levels of taxation, and attributes of the city population which possibly could result in a redistribution of real income.

Jurisdiction-wide effects contribute to blow-out in part as a result of the differential provision of public goods across neighborhoods of a city. For example, the quality of education may vary across neighborhoods within cities since better facilities and teachers are frequently provided to upper class neighborhoods than to lower or middle class neighborhoods. The same differential provision may be true of crime protection. This may be attributable to the strategic bargaining power of upper class households. As a result of the implicit threat to suburbanize, these households may obtain from city government more favorable treatment for their schools and more police patrols. Favorable treatment of upper class households in the provision of public goods may also arise from the fact that they have more educational and financial resources with which to influence public decision

13 Cox, Conflict, Power and Politics, p. 60.
making. Consequently middle class households may find it more advantageous than upper class households to locate outside the central city.

Blow-out may also be associated with the income level of households in a jurisdiction. These lower incomes may mean that the local government must tax its residents at a higher rate. When local governments impose higher taxes the impact is frequently experienced more severely by middle class households than by upper class households. Lower class households may be impacted even more than middle class households. However, due to exclusionary practices by suburban governments they are unable to escape to those suburbs. This higher tax rate would, therefore, contribute to blow-out. Regressiveness in the tax structure is supported by the fact that the primary source of revenue in local jurisdictions is the property tax which is usually thought to be regressive. This regressiveness may also be exaggerated by under assessment of upper class areas. Such under assessment may again be a response by city government to the implicit upper class threat of moving to the suburbs.

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14 Ibid., p. 197-103.
A number of the jurisdiction-wide variables, however, will only contribute to blow-out in a context of central city-suburban differences. For example, low per pupil expenditures within the central city will only result in blow-out if expenditures in the suburbs are higher. The contribution of each of these differences to blow-out is evaluated, therefore, by using an index of the difference between the central city and its suburbs with respect to a given variable. These measures are referred to in this research as disparity indices.

The magnitude of the effect of disparities in crime rates, educational expenditures or tax rates may be a function of the redistribution occurring in the provision of education and crime protection. When the percentage of the city's population that is lower class increases this redistribution is likely to increase: central city governments must tax all of their population to meet the increased demand for services by the lower class segment.17 Since it has been suggested that under these circumstances upper income households are able to extract more in the way of tax breaks, educational benefits, and crime protection from city government, it is conceivable that middle class households suffer the most from redistributive policies. As a result one might

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17This change in the mix of goods is a fairly typical problem of cities with a large black or lower class population. This is discussed in John Riew, "Metropolitan Disparities and Fiscal Federalism," Financing The Metropolis, edited by John P. Grecine (Beverly Hills: Sage Publications, Inc., 1970), pp. 137-61.
expect blow-out to increase as the lower class proportion of the city's population increases. The proportion of the city's population which is lower class is, therefore, incorporated in the model evaluated here even though the relative size of this group alone is not expected to be related to blow-out. However, the lower class proportion is expected to have an effect on the contribution of the other variables to blow-out. The percentage of the city population which is lower class is thus introduced into the model combined with each of the disparity variables as interaction terms. It is expected that the effects of educational expenditures, crime rate, and tax rate disparities will be increased when they interact with the per cent lower class. In other words the ability of disparities in crime rates, educational expenditures, or tax rates to induce blow-out is enhanced when the relative size of the lower class segment of the population increases. This is thought to result from the negative effects that this group has on the provision of public services to middle income households.

The symbolic form of the model to be evaluated at this stage of the dissertation is as follows:

$$ Y_i = f(C_i, T_i, E_i, C_{i \text{LC}}_i, T_{i \text{LC}}_i, E_{i \text{LC}}_i) $$

where

- $Y_i$ = rate of blow-out in the $i$th city;
- $C_i$ = disparity in crime rates between central city and suburbs in the $i$th city;
- $T_i$ = disparity in tax rates between central city and suburbs for the $i$th city;
$E_i$ = disparity in per pupil expenditures between central city and suburbs for the $i$th city;

$C_{i,LC_i}$ = interaction between the crime disparity index and percentage of the population that is lower class for the $i$th city;

$T_{i,LC_i}$ = interaction between the income level disparity and percentage of the population that is lower class for the $i$th city;

$E_{i,LC_i}$ = interaction between the per pupil expenditures disparity and the percentage of the population that is lower class for the $i$th city;

$i = 1 \ldots m; \text{ and}$

$m = \text{number of cities in the analysis.}$

This model will be evaluated across the sample of thirty-four cities.

**Intra Urban Scale of Analysis**

At the third stage of analysis the focus of the research shifts from inducements to blow-out that exist at the jurisdictional level to inducements to blow-out present at the neighborhood level. Methodological considerations at this stage of analysis include: the sample of cities to be examined; the spatial extent of neighborhood effects; and a specification of the components of the model.
i) Sample of Cities: For practical purposes the sample of cities under examination here must be reduced from the thirty-four used in the blow-out analysis. Fourteen cities have, therefore, been selected for analysis. This is necessitated by the greater volume of data needed for each city in the intra-urban analysis. These data include: the percentage of households in each tract with children; the percentage of heads of households in each tract over age forty-five; the percentage of housing units in each tract that are owner occupied; and a set of co-ordinates for each tract used to calculate its relative location with respect to imputed sources of negative externalities.

Cities deleted from the intra-urban analysis were those having a scarcity of upper and middle class neighborhoods, those where census tract boundaries changed substantially between 1960 and 1970, and those having almost no upper class neighborhoods. These criteria were important since the construction of a proximity index is carried out across upper and middle class census tracts within each city. Too few upper and middle class tracts, the lack of upper class tracts, or excessively large units created by aggregating tracts whose boundaries changed, all reduce the accuracy of the proximity measure calculated.

ii) The Spatial Extent of Neighborhood Effects: As we have seen the primary hypothesis of this research is that the number of households living in middle class neighborhoods is declining more rapidly or increasing less rapidly than the number of households
living in upper class neighborhoods. This change is hypothesized to be a result of both factors at a jurisdictional level and effects taking the form of behavioral externalities at a neighborhood level. More specifically, the behavioral externalities are thought to be generated by blacks or lower class whites. It is this latter contribution to blow-out which is of concern in this section.

One of the specific hypotheses evaluated at this stage of analysis is that proximity of middle class households to blacks or lower class whites will induce blow-out. Proximity is assumed to be important because of the spatial correlates of what to this point have been called neighborhood effects or behavioral externalities. Such externality effects may derive from different attitudes about the maintenance of property, different attitudes about education, or different preferences regarding acceptable crime rates. Since upper and middle class households may find these behavior patterns distasteful, they try to avoid them by locating elsewhere or avoiding by residential exclusion those who would impose them. In Chapter 3 it was suggested that middle

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19 This avoidance is found to be the basis of change in St. Louis by Charles L. Leven and Murray L. Weidenbaum, Urban Decay In St. Louis (Institute for Urban and Regional Studies, Washington University, St. Louis, Missouri, June 1974).
class households opt for the residential relocation strategy, whereas upper class households are more likely to engage in a residential exclusion strategy.

This raises important operational questions about the spatial field of these negative externalities. One approach, for example, considers households in tracts contiguous to blacks as impacted by negative externalities and households in tracts not contiguous to blacks as not impacted. Another perhaps more realistic approach assumes that externality effects decline with distance from the source of those effects in conformity to some continuous and monotonically decreasing function. Harvey points out, for example, that externalities exist as a spatial field effect which might be characterized by such a function. Such a distance decay assumption will be the one made here.

In addition to the distance decay effect, however, one might also expect the intensity of the negative externalities at a given distance from the source to be some function of the number of producers of those externalities and the magnitude of the externalities they each produce. In this research the number of blacks or lower class whites in a neighborhood and the degree of their

\[20\] James T. Little, Residential Preferences, Neighborhood Filtering, and the Neighborhood Change, Working Paper IMS 3 (Institute For Urban and Regional Studies, Washington University, St. Louis, Missouri, June, 1974).

lower classness may, therefore, be important in determining the intensity of externalities. In brief, there is also a mass effect in addition to a distance decay effect.

In order to incorporate both the distance decay effect and the mass effect into an estimate of the impact of negative externalities a potential model is used.\(^{22}\) As discussed in the conceptualization upper and middle class households perceive that blacks impose negative externalities apart from their social class characteristics. Lower class white households are also thought to impose negative externalities as a result of their lower classness. A slightly different form of the model is, therefore, used for the two cases of proximity to blacks and proximity to lower class whites respectively. In the former case the effect of blacks is considered irrespective of social class. In calculating the "negative externality potential" resulting from proximity to blacks the following model is applied across upper and middle class tracts for each of the fourteen cities:

\[
PB_j = \sum_{i=1}^{n} \left( \frac{B_i}{D_{ij}} \right)
\]

where \(PB_j = "negative externality potential"\) resulting from the

proximity of the population of the jth neighborhood to blacks;  

\[ B_i = \text{the number of blacks in the } i\text{th neighborhood}; \]

\[ D_{ij} = \text{distance from neighborhood } i \text{ to neighborhood } j; \]

\[ b = \text{distance exponent}; \]

\[ i = 1 \ldots n \text{ (} n = \text{the number of neighborhoods in the city}); \text{ and } \]

\[ j = 1 \ldots p \text{ (} p = \text{the number of upper and middle class neighborhoods in the city}). \]

In calculating the negative externality potential of proximity to lower class whites the number of lower class white households is weighted by the degree of their lower classness. The model is again applied across upper and middle class neighborhoods for each of the fourteen cities:

\[ \text{PLCW}_j = \sum_{i=1}^{n} \frac{C_i \cdot W_i}{D_{ij}^b} \]

where \( \text{PLCW}_j \) = "negative externality potential" resulting from the proximity of the jth neighborhood to lower class whites;

\[ W_i = \text{the number of whites in the } i\text{th neighborhood}; \]

\[ C_i = \text{a measure of the lower classness of the } i\text{th neighborhood}; \]

\[ \text{The delineation of these neighborhoods within each city will be discussed in a later chapter.} \]
\[ D_{ij} = \text{distance from neighborhood } i \text{ to neighborhood } j; \]
\[ b = \text{distance exponent; } \]
\[ i = 1 \ldots n \text{ (} n = \text{the number of neighborhoods in the city); and } \]
\[ j = 1 \ldots p \text{ (} p = \text{the number of upper and middle class neighborhoods in the city).} \]

iii) Model Specification: A major consideration of this research is the extent to which middle class households serve as a buffer between upper class households and lower class or black households and hence produce a set of locational relationships conducive to blow-out. A measure of such locational relationships is, therefore, used as an independent variable. This measure is the correlation coefficient between the social class scores for each upper and middle class tract and their respective potential measures. A high positive correlation coefficient would indicate that upper class households are more impacted as a result of location than middle class households. A negative correlation coefficient would indicate the converse. A coefficient of near zero, on the other hand, would indicate that upper and middle class households are not located differentially with respect to the producers of negative externalities.

In addition to proximity, the life cycle and tenure characteristics of the populations of middle class neighborhoods which are in close proximity to black and lower class white neighborhoods are also hypothesized as important in the process of residential
change. It is thought, for example, that youthful households and households with young children are more likely to relocate as a result of the negative externalities imposed on them by blacks or lower class whites. Thus, younger households are more likely to relocate as a result of the depressing effect of negative externalities on property values. Mobility of elderly households is reduced by their inability to get financing for housing elsewhere. Banks are reluctant to make loans to elderly households due to their age. Furthermore, such financing may be necessitated by the depreciation of current homes. This results from the proximity of those homes to negative externalities. Elderly households may also be less likely to relocate than youthful households due to the social equity built up in their neighborhood. For example, knowledge, friendships, and perhaps attachments to familiar physical surroundings all tend to reduce mobility for those with lengthy duration of residence.

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24 In the Bagley Agea of Detroit this was reflected in the pattern of movers. Eleanor Paperno Wolf and Charles N. Lebeaux, Change and Renewal In An Urban Community (New York: Frederick A. Praeger, Publisher, 1969).

Young children would also seem to exercise an accelerating effect on blow-out. Parents apparently would prefer to have their children not mix with either lower class or black children.26

Finally, one might expect tenure status to play a role in the process of change. As has been shown elsewhere residential change is more frequent among renters than among homeowners.27 Due to their investment in the neighborhood homeowners are more likely to reject a relocation strategy.

Proximity to negative externalities is hypothesized as contributing to blow-out. Likewise, age, children and tenure variables are also thought to be important. However, it is not the effects of proximity, age, children, or tenure variables taken individually which are of concern, but instead their joint or interaction effects. For example, it is hypothesized that neighborhoods in close proximity to blacks and with many children will experience a greater reduction in social class scores than either neighborhoods elsewhere with many children, or neighborhoods in close proximity to blacks.


with few children. The life cycle, tenure and proximity considerations should, therefore, be incorporated into the model as interaction effects.\(^{28}\) One might, then, expect blow-out when middle class households live close to blacks and lower class whites, but expect that it will be greater when those households have children, when they are young, or when they rent their homes.

A model is, therefore, developed to relate these proximity, age, children and tenure variables to blow-out. The model is evaluated first, with respect to the effect that proximity to blacks has on blow-out; and, second, with respect to the effect that proximity to lower class whites has on blow-out. The model to be evaluated is, therefore, as follows:

\[
B_i = f(P_{ik}, A_i, CH_i, T_i, P_iA_i, P_iCH_i, P_iT_i)
\]

where \(B_i\) = blow-out in the \(i\)th city;

\(P_{ik}\) = proximity of middle class households to the \(k\)th group in the \(i\)th city;

\(A_i\) = per cent of the middle class households over age 45 in the \(i\)th city;

\(CH_i\) = per cent of the middle class households with children under age eighteen in the \(i\)th city;

\[ T_i = \text{per cent of the middle class households owning their homes in the } i\text{th city}; \]

\[ i = 1, \ldots, n (n = \text{the number of cities in the analysis}); \text{ and} \]

\[ k = 1 \text{ when black; } k = 2 \text{ when lower class white}. \]

In this third stage of analysis then the focus is on the change in social class composition of neighborhoods within cities.

**Summary**

In the three stages of analysis outlined here a number of procedures were presented whereby the hypotheses stated earlier can be evaluated. In the first stage of analysis the 1960-1970 time interval was specified as most appropriate. An explanation was then offered for selecting a sample of cities stratified by size and region of the United States. Since blow-out involves social class change across cities, a social class index was defined. This index includes measures of income and education, both deemed to be resources relevant to the problem and process under investigation. A relative definition of social class specific to each city was decided upon. In this way one can evaluate the change in the number of households living in upper class neighborhoods compared to middle class neighborhoods within each metropolitan area independent of some national measure of class.

In a second level of analysis a model was specified in an attempt to explain blow-out with what are called jurisdiction-wide variables. These jurisdiction-wide variables are characteristics varying across, but not within, cities. Included in this part of
the analysis as independent variables are considerations such as educational expenditures, crime rates, and taxation. The additional contribution of each of these is also to be evaluated as they interact with the proportion of the city's population that is lower class. Particularly important for some of these jurisdiction-wide considerations from a theoretical viewpoint are differences in their provision or availability between each central city and its suburbs. Measures of these differences called disparity indices were, therefore, proposed as explanatory variables.

In a third stage of analysis the focus is on neighborhood or behavioral externality effects. The primary concern in this stage is the impact that proximity of middle class and upper class households to groups perceived as imposing negative externalities has on the degree of blow-out. In addition to proximity the effects of age of households, the number of households with children and the housing tenure status of households are to be examined for their effect on blow-out as they interact with proximity.

These three stages of analysis hopefully can provide some summary statistics by which to support or reject the hypotheses under consideration. First, the existence or non-existence of blow-out can be determined. Second, the contribution of jurisdiction-wide variables to explaining blow-out can be evaluated across all the cities in the analysis. Third, neighborhood
contributions to blow-out are examined using proximity to negative externality generating areas combined with social variables.

What follows are the results of these three empirical analyses.
RESULTS AND DISCUSSION OF ANALYSIS OF BLOW-OUT

Chapter 5

Introduction

Having outlined the research design in the previous chapter, it is now necessary to specify more precisely the details of the methodology and to evaluate the hypotheses derived from the conceptualization. In this chapter, the extent and variation of blow-out is determined. In succeeding chapters, attempts are made to explain that variation.

Prior to evaluating the blow-out hypothesis, a number of operational procedures must be specified. First, the details of the sample selection procedure are outlined. This includes the specification of criteria for stratification by city size and region of the United States. Second, the units of observation or "neighborhoods" within each city to be examined for social class change are defined, and problems accompanying the use of those units discussed. Third, methods used in constructing a social class index are made explicit. Finally, the divisions between the three social classes used in this analysis are specified and justified. Using the procedures outlined here, the results of the evaluation of the hypothesis are presented and discussed.
Methodology

i). Sample Design: As indicated in the research design a sample of cities is selected for analysis from the total population of SMSA's. Given that the 1960-1970 time interval is used, the sample of cities must be selected from one of those two points in time. Since the number of cities identified as SMSA's increased from 1960 to 1970, sampling the population of SMSA's for 1970 might result in the selection of urban areas not classified as SMSA's ten years earlier. The 1960 population of SMSA's is, therefore, used for sampling purposes.

In selecting the cities a stratified sampling design is employed.¹ Stratification according to urban size includes four categories: (i) SMSA's with central city populations from 50,000 to 250,000; (ii) SMSA's with central city populations from 250,000 to 500,000; (iii) SMSA's with central city populations from 500,000 to 1,000,000; and (iv) SMSA's with central city populations over 1,000,000. Central city populations are used in the stratification since this research focuses only on change in that portion of the urban area.

¹The theoretical rational for the particular stratification used is discussed in the research design.
The regions used are those defined by the Bureau of the Census and are as follows: (i) the North East; (ii) the North Central; (iii) the South; and (iv) the West. Four city size and four regional categories yield a total of $4 \times 4 = 16$ strata. A twenty per cent sample is drawn from each of these strata; this provides a total sample of thirty-four cities.

ii) Units of Observation Within Cities: Within each of these cities the observational units to be employed, and heretofore referred to only as "neighborhoods," are census tracts. Data were gathered for census tracts across the sample of central cities for the two points in time. However, some tracts had to be deleted from the analysis. In addition to deleting suburban tracts, other deletions include those tracts added to a central city by annexation after 1960. These were omitted since they could change the social class composition of the city through means other than neighborhood change. Assuming the blow-out focus, only changes in

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2 The states in each of these regions in alphabetical order are: the North East—Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont; the North Central—Indiana, Illinois, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; the South—Alabama, Arkansas, Delaware, Georgia, Florida, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia; and the West—Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.
social class composition resulting from neighborhood change are relevant. Other problems are posed by alterations in tract boundaries over the time interval in question. Given that in a later stage of analysis an attempt will be made to explain blow-out in terms of the relative location of census tracts, the unit of analysis must remain the same across the two points in time. In this respect the use of census tracts as observations presents a problem since tract boundaries sometimes change. For a minority of cities census tract boundaries changed substantially between 1960 and 1970. This occurred in cities where considerable population growth resulted in an increase in the number of tracts through sub-division of existing tracts. This situation is easily remedied here by aggregating the data for the latter point in time to the same boundaries as existed at the first point in time. In a few other cities census tract boundary changes resulted from a redrawing of some tract boundaries. In this case several tracts have to be aggregated at both points in time in order to obtain boundary congruence. For most cities, however, there was very little or no change in census tract boundaries between 1960 and 1970.

iii) Social Class Index: The social class index developed here incorporates measures of both income and education. A variety of standardization procedures are necessary, however. As a first step, income and educational data have to be made comparable
between the two points in time. This is necessitated by the fact that in this evaluation of blow-out the relative positions of tracts with respect to social class within a city and between the two points in time are of primary concern. However, both educational and income levels for urban areas increased between 1960 and 1970, due to inflation and rising real income. The 1970 median income and median education figures for each tract are, therefore, deflated by an amount that makes median income and education values for the SMSA as a whole equal for 1960 and 1970. This is accomplished by multiplying the data for each tract for 1970 by a constant of less than one. Since income and educational levels increased differentially from one SMSA to another the deflator is determined by the extent of the increase in each of the metropolitan areas respectively. By this procedure median income and education levels of a tract can be compared across the two points in time to determine if the relative position of that tract with respect to the other tracts has changed.

Having made the data for the two points in time comparable, z-scores are then computed for each census tract in the central city for both median education and median income across the two points in time. Scores are also computed for the median income and median education levels for the SMSA. These are included since divisions into lower, middle and upper classes will be made with respect to the social class score derived from them. The z-scores for education and income are then added yielding a social class score for each tract for both 1960 and 1970.
iv) A Classification of Social Class: At this point it becomes necessary to define what constitutes "lower", "middle", and "upper" class. Bradford and Kelejian in a similar analysis used the twentieth family income percentile as a definition of the poor. The rationale for using the twentieth percentile was that this corresponded to the percentage of the total population falling below the officially designated poverty line in 1960. In defining upper status families they were less arbitrary and repeated the analysis using the number of families above the fiftieth, sixtieth, seventieth, eightieth, and ninetieth percentiles respectively.

The definitions used by Bradford and Kelejian were also sample-wide. However, by using a sample-wide definition, cities located in areas where the standard of living is relatively low will appear to have an abnormally large lower class and perhaps a small upper class. Since the primary focus of this research is on the relative positions of tracts within a particular urban social space the class definitions used here are specific to each city.

Lower class tracts are arbitrarily defined here as having a social class score more than one standard deviation below the social class score derived from the combined SMSA median income and median education z-scores. If the central city median were used

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instead, the social class score for a tract might remain the same even though it declined relative to the entire SMSA. In this case the blow-out score would not accurately reflect the relative changes in the number of upper and middle class households in the central city. Using the SMSA median provides an index of the status of the central city with respect to the entire urban area.

The boundary between "middle" and "upper" class definitions is more important as a result of its potentially greater impact on the blow-out score. For example, any delimitation of the boundary between upper and middle classes runs the risk of falling just above or below a cluster of census tracts scores. These tracts could with only a slight change in social class scores fall into the other class at the second point in time, and thus substantially affect the blow-out score for that city. In order to avoid the possibility that the blow-out score obtained is an artifact of the social class delimitation chosen, five blow-out scores are computed for each city. Each score is based on one of five cutoffs at intervals of .25 from one through to two standard deviations above the SMSA median social class score. These five scores are then averaged to obtain the blow-out score for each city used later in the analysis.

Utilizing the procedures outlined here the extent and variation of blow-out across urban areas will be determined. Also to be evaluated is the relationship of blow-out to city size and region of the United States. The results of these tests follow.
Results

The evaluation of the blow-out hypothesis involves determining relative rates of decline in the number of people living in upper and middle class census tracts. This is determined by calculating a blow-out score using the following expression:

$$\text{Blow-Out}_i = \frac{\text{PUC}_i(t_2) / \text{PUC}_i(t_1)}{\text{PMC}_i(t_2) / \text{PMC}_i(t_1)}$$

where $\text{PUC}_i$ = population of upper class neighborhoods for the $i$th city;

$\text{PMC}_i$ = population of middle class neighborhoods for the $i$th city; and

$i = 1 \ldots m$ ($m = 34$).

The calculation of blow-out scores yielded values ranging from 0.0 to 3.85. A score greater than 1.0 indicates that the number of people living in middle class areas has declined more or increased less than the number of people living in upper class neighborhoods. Conversely, a score less than 1.0 indicates that the number of people living in upper class neighborhoods has declined more or increased less than the number of people living in middle class neighborhoods; the opposite of blow-out is, therefore, indicated.

As shown in Table 1 only seven of the thirty-four cities analyzed exhibit the expected blow-out scores. They are: Ann Arbor, Jackson, Monroe, Los Angeles, San Diego, Albuquerque, and Ogden. However, some cities approach it much more closely than others and across all cities the blow-out scores vary considerably.
<table>
<thead>
<tr>
<th>Cities</th>
<th>Blow-Out Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northeast</td>
<td></td>
</tr>
<tr>
<td>Philadelphia</td>
<td>.281</td>
</tr>
<tr>
<td>Boston</td>
<td>.726</td>
</tr>
<tr>
<td>Rochester</td>
<td>.000</td>
</tr>
<tr>
<td>Bridgeport</td>
<td>.000</td>
</tr>
<tr>
<td>Portland, Maine</td>
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<tr>
<td>Syracuse</td>
<td>.571</td>
</tr>
<tr>
<td>Utica</td>
<td>.986</td>
</tr>
<tr>
<td>Worcester</td>
<td>.157</td>
</tr>
<tr>
<td>North Central</td>
<td></td>
</tr>
<tr>
<td>Chicago</td>
<td>.345</td>
</tr>
<tr>
<td>Milwaukee</td>
<td>.106</td>
</tr>
<tr>
<td>Kansas City</td>
<td>.702</td>
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<td>Dayton</td>
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<tr>
<td>Rockford</td>
<td>.197</td>
</tr>
<tr>
<td>Saginaw</td>
<td>.222</td>
</tr>
<tr>
<td>Ann Arbor</td>
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</tr>
<tr>
<td>Muncie</td>
<td>.871</td>
</tr>
<tr>
<td>Lima</td>
<td>.905</td>
</tr>
<tr>
<td>Jackson</td>
<td>1.021</td>
</tr>
<tr>
<td>South</td>
<td></td>
</tr>
<tr>
<td>Houston</td>
<td>.521</td>
</tr>
<tr>
<td>Atlanta</td>
<td>.587</td>
</tr>
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<td>Miami</td>
<td>.912</td>
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<td>Norfolk</td>
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<td>Raleigh</td>
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<td>Greenville</td>
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<tr>
<td>Monroe</td>
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<tr>
<td>Wheeling</td>
<td>.170</td>
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<tr>
<td>West</td>
<td></td>
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<tr>
<td>Los Angeles</td>
<td>1.485</td>
</tr>
<tr>
<td>San Diego</td>
<td>1.433</td>
</tr>
<tr>
<td>Portland</td>
<td>.947</td>
</tr>
<tr>
<td>San Jose</td>
<td>.684</td>
</tr>
<tr>
<td>Albuquerque</td>
<td>1.166</td>
</tr>
<tr>
<td>Ogden</td>
<td>2.089</td>
</tr>
</tbody>
</table>

*a: Within each regional category the cities are listed according to size from the largest to the smallest.

*b: Cities conforming to the hypothesized pattern.
in magnitude. For example, Rochester and Bridgeport both have blow-out scores of zero. On the other hand, Ann Arbor has a score of 3.85.

In addition to evaluating the extent of blow-out in American cities, we are also concerned with the correlates of blow-out in terms of city size and regional location. First, one might expect a relationship between blow-out and size of city for reasons specified in the research design. However, a systematic relationship is not apparent: the simple correlation is a meager -.09.

Second, some relationship between regional location of cities and blow-out scores is also expected. This would appear to be supported by the higher blow-out scores of the Western Region. Application of an analysis of variance test indicates that regional differences are significant only at the .10 level. Contrary to expectations, then, higher blow-out scores are in the West.

Discussion

The blow-out scores derived from this analysis would seem to be consistent with some previous research on the social class geography of urban areas. A majority of the cities examined here exhibited a pattern indicating a decline in the number of upper class households relative to the number of middle class households for central cities. This is not the pattern hypothesized in Chapter 3. However, it would seem to be consistent with the findings of
Schnore and Pinkerton that a majority of cities in the United States are tending toward upper class suburbs and lower class central cities. As in their study this research also found a substantial minority of cities tending toward polarized upper and lower class central cities and middle class suburbs.

There is some indication of the expected pattern of blow-out, therefore, but the cities where it is found are neither in the expected size category nor in the expected region of the United States. There is no significant relationship between blow-out scores and city size. Given the processes hypothesized by Harvey, it was expected that large cities would exhibit a greater tendency toward blow-out. As discussed in Chapter 4 this was thought to be due to the greater negative impact on middle class households of both jurisdictional and neighborhood effects. Small cities are thought to be less segregated than large cities resulting in a more equitable sharing of negative externalities. Disparities between central cities and suburbs are also thought to be less pronounced. As a result there is less tendency toward blow-out. The fact that no relationship was found between city size and blow-out scores indicates either that large cities do not possess

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the above characteristics or that those characteristics do not encourage blow-out. The latter seems more probable. However, this will be examined in greater detail in succeeding stages of the analysis.

The relationship between blow-out scores and regional location is also contrary to the expected pattern. A greater tendency toward blow-out was found in Western cities while it was least likely in Northeastern and Midwestern cities. For reasons similar to those cited for expecting a positive relationship between city size and blow-out it was expected that the cities of Northeastern United States would experience greater blow-out. Western and to some extent Southern cities were thought to have fewer blacks and lower class whites in central cities, and therefore, fewer negative externalities for upper and middle class households. Smaller central city-suburban fiscal disparities were also expected in Western and Southern cities. A smaller tendency toward blow-out was, therefore, expected for these cities. In fact the opposite was found. Western cities most frequently had high blow-out scores. This, too, would lead one to question whether the processes discussed in the conceptualization in Chapter 3 do indeed result in blow-out. Further examination of this possibility will be conducted in the following two stages of the research.

Summary

In evaluating blow-out several procedural steps were followed. First, the population of cities was stratified by four size
categories and four regions of the United States. This resulted
in sixteen strata. A twenty per cent sample of cities was chosen
from each stratum. The resulting thirty-four cities were then
evaluated for blow-out.

Second, within each of the cities the areal units selected as
observations were census tracts. For a few cities, however, the
boundaries of census tracts had changed between 1960 and 1970. In
order to achieve tract congruence between the two points in time,
therefore, some aggregation of census tracts was necessary.

Third, for each census tract a social class score was deter­
mined. In so doing the income and education measures were made
comparable across the two points in time. From these data z-scores
were calculated for both education and income variables. These
z-scores were then added to yield a social class score for each

Fourth, having derived a social class score for each census
tract, social class divisions were arbitrarily determined. A
lower class tract is one with a social class score more than one
standard deviation below the SMSA median. An upper class tract is
less clearly defined. Five divisions between one and two standard
deviations above the SMSA median are used and the five resulting
blow-out scores averaged. Using these definitions of class a
blow-out score is calculated indicating the relative changes in
the number of people living in upper and middle class tracts.
In general the variation in blow-out scores is consistent with the findings of Schnore and Pinkerton rather than with the expected blow-out pattern. No relationship was apparent between city size and blow-out scores despite the expectation that large cities would be more likely to experience blow-out. Again the regional distribution of cities with high blow-out scores was similar to the findings of Schnore, et. al. Western cities had the higher scores although Northeastern cities were expected to conform more closely to the hypothesized pattern of blow-out. One would have to conclude that the pattern of blow-out was consistent with that hypothesized by Harvey in only a minority of cities.

Variations in blow-out scores are hypothesized to be associated with a set of neighborhood variables and a set of jurisdictional variables. In the next chapter the contribution of the jurisdictional variables to variation in blow-out scores will be examined.
THE INTER-URBAN SCALE: OF ANALYSIS

Chapter 6

Introduction

In the previous chapter a set of blow-out scores were derived for thirty-four cities. These scores indicate the relative changes taking place in the number of people living in upper and middle class neighborhoods across the sample cities. There is considerable variation in those scores. Part of this variation can perhaps be attributed to the differing degrees of proximity of upper and middle class households to black or lower class white neighborhoods and thus to the negative externalities experienced by each group. However, another portion of this variation is hypothesized to be related to what we have called earlier in this dissertation jurisdiction-wide variables. It is the contribution of these latter variables to the explanation of blow-out that is of concern in this stage of the analysis.

In the initial methodological section of the chapter, the construction of specific variables to evaluate the hypotheses is discussed along with the expected relationships between the dependent and respective independent variables. The results of tests of these hypotheses are then presented. Third and finally, these results are discussed as they relate to the hypotheses stated
earlier and as they relate to the literature upon which the re-
search is based.

Methodology

The effects on blow-out at the jurisdictional level discussed
in Chapter Four are evaluated here with a set of seven independent
variables. The contribution of each of these independent variables
to blow-out is examined in a multiple regression model.

i) Construction of Variables: A number of the independent
variables to be examined in this model are defined as disparity
indices. The rationale for using these was discussed in Chapter
Four. Each index is calculated as follows:

\[
\text{Disparity Index}_{ij} = \frac{CC_{ij}}{OCC_{ij}}
\]

where \( CC_{ij} \) = value of the \( j \)th variable in the \( i \)th central city;
\( OCC_{ij} \) = value of the \( j \)th variable in the remainder of the \( i \)th
SMSA;

\( i = 1 \ldots m \) where \( m = 34 \); and
\( j = 1 \ldots n \) where \( n = 3 \).

While a disparity index of one indicates that central city and
suburbs are equal with respect to that particular variable, an
index of greater than one indicates that a central city has a
higher value than its respective suburbs. Conversely, an index of
less than unity indicates that the suburban value is the higher one.
These variables are designed to index the relative residential attractiveness of central city and suburban residential locations. If, for example, taxes are lower in suburban areas than in central cities, such that the disparity index is less than one for that SMSA, one might expect suburban locations to be more attractive than central city locations. Since middle class households are hypothesized to be more likely to move in response to such attractiveness differentials than upper class households, these disparity indices are expected to be related to blow-out.

ii) Relationship of Independent Variables to Dependent Variables: The basic explanatory variables in the analysis are all measures of central city-suburban disparity. The first of these variables describes relative crime rates. All reported crimes except those involving theft of less than fifty dollars worth of property are used in the calculation of this index. Lower crime rates in suburban areas are thought to contribute to blow-out. As a result of the hypothesized ability of upper class households to protect their neighborhoods from crime (see Chapter Two), they have less incentive to choose suburban locations than the more vulnerable middle class. One would, therefore, expect the relationship between blow-out and crime rate differentials to be positive.

A second central city-suburban difference to which central city residents are thought to be responsive is that of per pupil expenditures for education. Higher expenditures in the suburbs are
thought to result in middle class choice of suburban locations and upper class choice of central city locations. This again is thought to be due to the perverse distribution of public goods within central cities and the availability of private schools for those who can afford them. The expected relationship between disparities in educational expenditures and blow-out is, therefore, negative.

Third, one might expect on the part of central city residents a similar response to tax rate differentials. However, there are operational problems. As a result of highly fragmented metropolitan areas it is not possible to obtain a single tax rate for the suburbs supporting a range of services similar to that supported by the tax rate of the central city. For example, in some suburban communities the local tax rate may not include school taxes if education is provided by a school district that is not coextensive with the jurisdiction providing other services. In such a case central city and suburban tax rates may not be comparable. As a surrogate for tax rate disparities, per capita income disparities are used. The rationale for this is that when incomes are higher,

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1In constructing these disparity indices, the suburbs or the area "outside the central city" is defined as the non-central city portion of the SMSA. This means that per pupil expenditures for education outside the central city are an average for all the suburbs. This is derived by subtracting the number of pupils in the central city from the SMSA total and the central city educational expenditures from the SMSA total. The former is then divided by the latter to yield suburban per pupil expenditures.
a lower tax rate can yield an equal amount of revenue. This assumes, of course, that incomes are closely related to property values which are then subject to the local property tax. One would expect a negative relationship between blow-out and per capita income disparities.

Finally, in the conceptualization developed in Chapter Three it was hypothesized that central city populations characterized by high percentages of lower class households will tend toward greater blow-out. This greater blow-out is thought to be due to redistributive effects in taxation and in the provision of public services by city governments. Considerable redistribution of wealth may occur when all the city's residents are taxed to provide services whose main benefits accrue to lower class households. Redistribution may also occur when the public services provided by the city are distributed regressively. Blow-out might be expected to occur in these circumstances since lower class households are not able to relocate and upper class households have no incentive to do so leaving middle class households most likely to choose suburban locations. These effects might be apparent in the provision of education, crime protection, or in taxation since these are the major functions of city governments. Given this hypothesized effect a larger percentage of the city's population which is lower class is expected to increase the contribution that disparity variables make to blow-out. As a result the per cent of the city's population which is lower class is incorporated into the model as
an interaction term with each of the other variables. The larger the lower class percentage of the city's population the greater the expected contribution of the disparity variables. Thus the expected signs of the respective interaction terms are the same as each of the disparity variables taken additively.

These variables are used in an evaluation of the hypotheses regarding jurisdictional effects on blow-out. The expected relationships of these variables to the dependent variable are summarized in Table 2; empirical results follow.

**Results Of Inter-Urban Analysis**

The variables in this stage of analysis have been referred to as jurisdiction-wide variables since they vary by jurisdiction. Their impact on blow-out is examined here across thirty-four cities. The specific form of the model used to evaluate the contribution of jurisdiction-wide variables to blow-out is as follows:

\[ Y_i = a + b_1 X_{1i} + b_2 X_{2i} + b_3 X_{3i} + b_4 X_{41} X_{1i} + b_5 X_{42} X_{2i} + b_6 X_{41} X_{3i} + e_i \]

where \( Y_i \) = the blow-out score for the \( i \)th city;

\( X_{1i} \) = the disparity in crime rates between the \( i \)th central city and its suburbs;

\( X_{2i} \) = the disparity in educational expenditures between the \( i \)th central city and its suburbs;

\( X_{3i} \) = the disparity in per capita income between the \( i \)th central city and its suburbs;
Table 2. EXPECTED RELATIONSHIPS: INTER-URBAN ANALYSIS

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disparity In Crime Rates</td>
<td>+</td>
</tr>
<tr>
<td>Disparity In Educational Expenditures</td>
<td>-</td>
</tr>
<tr>
<td>Disparity In Per Capita Income</td>
<td>-</td>
</tr>
<tr>
<td>Disparity In Crime Rate and Per Cent Lower Class</td>
<td>+</td>
</tr>
<tr>
<td>Disparity In Educational Expenditures and Per Cent Lower Class</td>
<td>-</td>
</tr>
<tr>
<td>Disparity In Per Capita Income and Per Cent Lower Class</td>
<td>-</td>
</tr>
</tbody>
</table>

\[ X_{4i} = \text{the percentage of the } i\text{th central city population that is lower class; and} \]
\[ e_i = \text{error term for the } i\text{th central city.} \]

The model used here is, therefore, based on Casetti's expansion method.\textsuperscript{2}

Support for the hypothesized relationships is determined first, by whether the Beta coefficient is of the expected sign. Second, the strength of that support can be evaluated by the level of significance indicated by the $T$ values.

The six independent variables shown in Table 3 explain 48 per cent of the variance in the dependent variable. Of those six independent variables the relationships to the dependent variable are statistically significant at the .05 level for two with all of the others relatively insignificant. Only one of the original disparity variables has a sign conforming to the hypothesized pattern. On the other hand, two of the three interaction variables are of the expected sign.

Independent variables significantly related to the dependent variable are: disparities in educational expenditures and disparities in educational expenditures interacting with the per cent lower class. However, only the latter variable is related to the dependent variable in the expected fashion. In their relationship to the dependent variable disparities in educational expenditures are contrary to that expected.

These results indicate that higher suburban educational expenditures are associated with the tendency for the number of upper class households in central cities to decline more rapidly than the number of middle class households. But this tendency is less true as the lower class proportion of the city's population increases. In other words when the per cent lower class is large, the tendency for the middle class households to become a larger proportion of the city's population decreases.

The remaining independent variables are relatively insignificant although they do make a small contribution to explaining
Table 3. INTER-URBAN ANALYSIS RESULTS

Correlation With Blow-Out

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Beta</th>
<th>T Values</th>
<th>Significance Level</th>
</tr>
</thead>
<tbody>
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<td>-.2866</td>
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<td>.671</td>
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<tr>
<td>Disparity In Educational Expenditures</td>
<td>1.0214</td>
<td>2.6392</td>
<td>.014</td>
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<tr>
<td>Disparity In Per Capita Income</td>
<td>-.4235</td>
<td>-.8507</td>
<td>.402</td>
</tr>
<tr>
<td>Disparity In Crime Rates and Per Cent Lower Class</td>
<td>.4863</td>
<td>.7226</td>
<td>.567</td>
</tr>
<tr>
<td>Disparity In Educational Expenditures and Per Cent Lower Class</td>
<td>-1.5041</td>
<td>-2.8144</td>
<td>.009</td>
</tr>
<tr>
<td>Disparity In Per Capita Income and Per Cent Lower Class</td>
<td>.7181</td>
<td>1.1200</td>
<td>.273</td>
</tr>
</tbody>
</table>

\( R^2 = .4859 \)

blow-out. Of these variables disparities in per capita income and disparities in crime rates interacting with the per cent lower class are of the expected sign. Conversely, both disparities in crime rates and disparities in per capita income interacting with the per cent lower class are related to the dependent variable in a fashion contrary to that expected.

In so far as these variables make a contribution to explaining blow-out they indicate that higher per capita incomes in suburbs are associated with blow-out. However, if the lower class proportion of the city's population is large, the likelihood that higher per capita incomes in the suburbs will produce blow-out decreases.
Alternatively, lower crime rates in suburban areas seem to result in more rapid upper class suburbanization. However, when the percentage of the city's population that is lower class increases, the lower crime rates in the suburbs are more likely to result in blow-out.

The T values indicate only a weak relationship between four of the variables evaluated here and the dependent variable. Only the educational disparities variable and its interaction with lower class are statistically significant at an acceptable level. One might, therefore, conclude that only educational disparities are important in producing differential rates of suburbanization between upper and middle class households.

Discussion

This analysis of jurisdictional variables offers only partial support for the process hypothesized as contributing to blow-out. In particular the coefficients of educational expenditure disparity variables seem to support the arguments made in Chapter Two that the services and obligations associated with housing are important in household location decisions. The other variables serving as indices of these services and obligations are, however, relatively unimportant.

In support of the hypothesized process is the relationship of the interaction between educational disparities and the per cent lower class to the dependent variable. This relationship would seem to indicate that when there are large disparities in educational
expenditures combined with proportionately large lower class populations the result is likely to be blow-out. Conversely, if the per cent lower class is relatively small, large disparities in educational expenditures will produce the opposite of blow-out. Contrary to expectations educational expenditure disparities between the central city and the suburbs alone are associated with suburbanization by upper class rather than middle class households.

Taken together these results would seem to suggest that when the lower class proportion in central cities is relatively small the upper class households find it more advantageous to locate in the suburbs than middle class households. On the other hand, as the lower class proportion in the city increases it is middle class households that find it more advantageous to locate in the suburbs.

It was suggested in the conceptualization of this research that as a result of their superior resources upper class households would obtain schools for their neighborhoods which are of better quality than those in middle class neighborhoods. The upper class households would then have relatively little to gain in educational quality by locating in the suburbs. The coefficient of the educational expenditure variable interacting with the per cent lower class is congruent with such a suggestion. However, educational expenditures alone are not related to blow-out in a way that is consistent with such an outcome.

These findings are consistent with a suggestion that perhaps superior educational resources are allocated to upper class
neighborhoods only if the size of the lower class population is relatively large. Under these circumstances a smaller middle class population would also be indicated. A smaller middle class population would have a relatively smaller claim on city government thus allowing upper class households who are, therefore, relatively more influential to obtain better quality schools for their neighborhoods. Conversely, if the lower class proportion is small, then the middle class population is likely to be relatively large. A relatively large middle class population might have the political influence necessary to obtain the superior schools for their neighborhoods as opposed to upper class neighborhoods. While the findings of this research are consistent with such an outcome it is not necessarily evidence that such a distribution of educational resources occurs within cities. The research by Owens\(^3\) does suggest, however, that the resources held by a neighborhood are related to the quality of schools.

All of the other jurisdiction-wide variables hypothesized as being related to blow-out appear to be relatively insignificant. Contrary to expectations both higher crime rates and higher per capita incomes in the suburbs appear not to be significantly related to the differential suburbanization of upper and middle class households. Likewise, their interaction with the percentage

lower class appears not to be a contributor to differential suburbanization. One plausible explanation for the insignificance of crime rates may be that disparities between central cities and suburbs are not a relevant distinction. Crime may instead be perceived by households as a neighborhood problem which is unrelated to a given political jurisdiction. If that is indeed the case, household relocation resulting from differences in crime rates from one neighborhood to another may only be to another neighborhood within the jurisdiction. Consequently, there would be no impact on the differential suburbanization of upper and middle class households. Alternatively it may be that crime rates are relatively unimportant in household location decisions. However, the former explanation seems the most likely.

The insignificance of the disparities in per capita incomes may be attributable to the fact that the variable was intended to serve as a surrogate for differences in tax rates. It was expected that higher per capita incomes would result in lower tax rates which would then differentially affect upper and middle class household location decisions. It may be that a city with a high per capita income has it concentrated in a relatively few households thus making a high tax rate necessary even though per capita incomes for the city appear high. In such cases the distribution of the income may substantially affect the relationship between per capita income and tax rates. Again it may be that differences
in tax rates are of no concern in household location decisions, but this too seems unlikely.

Summary

In this section several methodological procedures for evaluating the impact of jurisdictional variables on blow-out were outlined. The effects of those jurisdictional variables were then examined and the results presented and discussed.

A regression model was specified where the dependent variable was the blow-out score. Included in that model were independent variables hypothesized to be associated with blow-out. These variables included: the disparity in crime rate between the central city and suburbs; the disparity in per capita income between central city and suburbs; the disparity in per pupil expenditures for education between central city and suburbs; and the additional variables in which the percentage of the city's population that is lower class interacts with each of the other three variables.

The disparity measures calculated were indicators of the relative positions of central cities and suburbs with respect to a particular variable. This procedure is based on the premise that attractive suburban alternatives will contribute to blow-out as middle class households choose those locations instead of central city locations. Disparity indices were calculated by dividing central city values by suburban values.
The results of the regression analysis indicate mixed support for the hypothesized relationships. Only the disparities in educational expenditures were significantly related to the blow-out scores. However, the expenditure disparities alone were associated with a tendency for upper class rather than middle class suburbanization. Alternatively when disparities in educational expenditures were combined with a high proportion of lower class households in the city blow-out became more likely. All of the remaining variables were relatively insignificant in their relationship to blow-out.

On the whole jurisdictional variables seem to have a mixed impact on the process of differential suburbanization. Educational expenditure disparities seem to be most important in explaining that differential suburbanization. The next stage of this analysis focuses on potential intra-urban or neighborhood contributions to variations in blow-out scores.
THE INTRA-URBAN ANALYSIS

Chapter 7

Introduction

Having explained a substantial portion of the variation in blow-out scores with what have been termed jurisdiction-wide variables, attention is now focused on the contribution to blow-out of relative location within central cities. In particular, it is hypothesized that a portion of the variation in blow-out can be explained by differing degrees of proximity of upper and middle class households to blacks and lower class whites. It is this hypothesis which is evaluated here.

In this chapter a methodology for evaluating the hypothesis is presented followed by the results and a discussion of the outcome. In the methodological section a procedure is specified for constructing a measure of relative proximity. Also discussed is the construction of the variables thought to intensify or reduce the effects of relative location on blow-out. Procedures are then presented for mapping the phenomena under consideration. Second, in the results section the model is presented along with its evaluation. In addition to the regression model and its results a cartographic analysis is also presented. Third, the results of these analyses are discussed in the context of the conceptualization developed earlier in this discussion.
Methodology

Both a statistical and cartographic analysis are outlined for examining the effect of the relative location of social class groups. In the former, the construction of the potential model presented in Chapter 4 is expanded upon. Additionally, variables serving as surrogates for household preferences are further specified.

i) Statistical Analysis: Central to evaluating the effects of proximity to black or lower class white households on blow-out is the construction of an index of such proximity. As indicated in Chapter 4 that measure is constructed by, first, evaluating potential models and then correlating the potential scores of all upper and middle class tracts with the social class scores of each of those tracts. The potential models employed are:

\[
P_{B_j} = \sum_{i=1}^{n} \frac{B_i}{D_{ij}^b} \\
PLC_{BW_j} = \sum_{i=1}^{n} \frac{C_i \cdot W_i}{D_{ij}^b}
\]

where \(P_{B_j}\) = "negative externality potential" resulting from the proximity of the population of the jth neighborhood to blacks;

\(PLC_{BW_j}\) = "negative externality potential" resulting from the proximity of the population of the jth neighborhood to lower class whites;
$D_i$ = the number of blacks in the $i$th neighborhood;

$W_i$ = the number of lower class whites in the $i$th neighborhood;

$C_i$ = a measure of the lower classness of the $i$th neighborhood;

$D_{ij}$ = the distance from neighborhood $i$ to neighborhood $j$;

$b = \text{distance exponent}$;

$i = 1 \ldots n \ (n = \text{the number of neighborhoods in the city});$

and

$j = 1 \ldots p \ (p = \text{the number of middle and upper class neighborhoods in the city})$.

Consider, in greater detail, the distance exponent employed in these models. As indicated in Chapter 3 it is suggested that externalities exist as a spatial field effect. However, the effect of externalities appears to decline in a non-linear fashion with distance away from the source. Morrill and Pitts' findings for Cedar Rapids, seem to indicate that frequency of social interaction with other households also declines with distance from an individual's residence.\(^1\) The distance coefficient in the gravity model which best characterized the decay of social interaction for Cedar Rapids was 2.74. This coefficient is also used in this dissertation as an approximation of the distance decay of negative

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externality effects from their source, since the effect of those externalities would appear to be co-extensive with social interaction.

In calculating the effect of negative externalities associated with lower class whites or blacks the mass effect of the numerators of the potential models differ. In the case of blacks the perceived negative externalities are thought to be a result of prejudice. The numerator of the potential model, therefore, includes only the number of blacks in each census tract.

On the other hand the externalities associated with lower class whites are thought to be derived from the behavior characteristics of lower class households. Consequently, one might expect that the lower the social class score the greater the negative externality effect. The numerator of this potential model, therefore, includes the number of white households in a census tract multiplied by the degree of their lower classness. However, in order to reflect the greater negative externality effect of lower class neighborhoods the social class scores must be inverted so that the lowest class tract will have the highest score and the highest class tract will have the lowest score. This is accomplished by subtracting all of the social class scores from a constant such as the highest social class score for that city.

In the case of both models the score for an upper or middle class tract indicates the potential negative externalities for households locating there. In order to characterize the locational
pattern of upper and middle class neighborhoods in a city with respect to providers of negative externalities, the logarithms of the potential scores were then correlated with the original social class scores. The logarithms of the potential scores were calculated since a better linear fit with social class scores was obtained for a majority of cities when using them. This procedure yielded measures of relative proximity to blacks and to lower class whites. A positive correlation coefficient would indicate that upper class households are relatively closer to blacks or lower class whites than middle class households. A negative coefficient would indicate the converse. These coefficients are the major independent variables used in attempting to explain blow-out across the fourteen cities examined in this level of analysis. It is expected that the relationship of these variables to blow-out will be negative in both cases. These expected relationships are shown on Tables 4 and 5.

As indicated in Chapter 2 it is thought that households have differing preferences with respect to neighborhood social composition. For example, some upper and middle class households seem to have relatively more intense preferences for upper and middle class white environments. As a result they may be more sensitive to negative externalities provided by black or lower class white households and may, therefore, be more likely to locate elsewhere.

As indicated in Chapter 4 the variables thought to be related to preferences for greater neighborhood social homogeneity are:
Table 4. EXPECTED RELATIONSHIPS WITH RESPECT TO LOWER CLASS WHITE NEIGHBORHOODS

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proximity to LCW</td>
<td>-</td>
</tr>
<tr>
<td>Proximity to LCW and Age</td>
<td>-</td>
</tr>
<tr>
<td>Proximity to LCW and Children</td>
<td>-</td>
</tr>
<tr>
<td>Proximity to LCW and Tenure</td>
<td>+</td>
</tr>
</tbody>
</table>

Table 5. EXPECTED RELATIONSHIPS WITH RESPECT TO BLACK NEIGHBORHOODS

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proximity to Blacks</td>
<td>-</td>
</tr>
<tr>
<td>Proximity to Black and Age</td>
<td>-</td>
</tr>
<tr>
<td>Proximity to Blacks and Children</td>
<td>-</td>
</tr>
<tr>
<td>Proximity to Blacks and Tenure</td>
<td>+</td>
</tr>
</tbody>
</table>
the percentage of the heads of households in middle class neighborhoods under age forty-five; the percentage of households in middle class neighborhoods with children under eighteen and the percentage of housing in middle class neighborhoods that is owner occupied. The percentages were calculated for each city for 1960.

The above variables are calculated within each city for those tracts classified as middle class in 1960. This includes all tracts from one standard deviation below the SMSA median score to one standard deviation above. The rationale for this definition of middle class is provided in Chapter 5. These variables are calculated only for middle class tracts since they are hypothesized to be in closer proximity to negative externality effects than upper class tracts.

Each of these variables is hypothesized to have an impact on the contribution of proximity to blow-out. For example, it is thought that a higher percentage of households under forty-five will intensify the proximity effects of blacks or lower class whites on middle class households. Likewise, a high percentage of households with children under eighteen and a low percentage of owner occupied residences are both thought to increase the effects of proximity. As a result each of these three variables is introduced into the model as an interaction term with the proximity variables. Given that the expected relationship between blow-out and the proximity measures is negative, one would expect that when proximity and the per cent under forty-five years of age are
introduced as an interaction term the relationship would also be negative. This would support the hypothesis that youthful households will intensify the effect of proximity on blow-out. Similarly, the expected relationship between blow-out and the interaction between proximity and the percentage of households with children is also negative. However, the interaction of proximity and per cent owner occupied residences is expected to be positive. This would support the hypothesis that a high proportion of owner occupiers will reduce the tendency toward blow-out.

An additional problem becomes apparent in evaluating this model, however. Specifically, multi-collinearity among the independent variables and in particular among the interaction variables may be important. Since multi-collinearity adversely affects the reliability of the estimating equation each of the three non-proximity variables is dichotomized at the mean and converted into a dummy variable. These dummy variables then interact with the proximity variables in the manner described above, but the severity of the multi-collinearity problem is reduced.

ii) Cartographic Analysis: In addition to statistical analysis a cartographic analysis of proximity effects is also performed for four of the cities. Two maps are provided for each of the four central cities of Atlanta, Dayton, Milwaukee, and Portland, Oregon. First, the social composition of each of the cities is mapped as it appeared in 1960. A second map shows the changes
that have occurred in social class scores for the middle, upper middle, and upper class neighborhoods between 1960 and 1970.

The results of both the statistical and cartographic analyses follow.

Results

i) Statistical Analysis: The variables in this stage of the analysis have been referred to as intra-urban variables since they are indicators of the locational structure of socio-economic groups within each city. The contribution of each of these variables is evaluated first with respect to proximity to lower class whites and second, with respect to proximity to blacks. The model is as follows:

\[ Y_{1i} = a + b_1 X_{1i} + b_2 X_{3i} X_{1i} + b_3 X_{4i} X_{1i} + b_4 X_{5i} X_{1i} + e_i \]  
\[ Y_{2i} = a + b_1 X_{2i} + b_2 X_{3i} X_{2i} + b_3 X_{4i} X_{2i} + b_4 X_{5i} X_{2i} + e_i \]

where \( Y_{1i} \) = blow-out score for the ith city;

\( X_{1i} \) = the relative proximity of upper and middle class neighborhoods to lower class white neighborhoods;

\( X_{2i} \) = the relative proximity of upper and middle class neighborhoods to black neighborhoods;

\( X_{3i} \) = a dummy variable dichotomized at the mean denoting a high or low percentage of households under age 45 in middle class neighborhoods in the ith city;

\( X_{4i} \) = a dummy variable dichotomized at the mean denoting a
high or low percentage of households with children in middle class neighborhoods in the ith city;

\( X^*_i \) = a dummy variable dichotomized at the mean denoting a high or low percentage of owner occupied residences in middle class neighborhoods in the ith city;

\( e_i \) = the error term for the ith city; and

\[ i = 1 \ldots n \ (n = 14). \]

As in the previous chapter support for the hypothesized relationships is determined first by the sign of the Beta coefficients. Second, the levels of significance indicated by the T values are measures of the strength of support for the different hypotheses. These statistics are shown in Tables 6 and 7.

The results of the analysis of proximity to lower class whites shown in Table 6 indicate that the variables evaluated in this portion of the dissertation explain 49 per cent of the variance in the blow-out scores. While none of the four variables in this analysis are significant at the .05 level the variables appear to make varying contributions to blow-out. Additionally only two of the four independent variables are related to the dependent variable in the expected fashion.

Although proximity of middle class neighborhoods to lower class whites has the sign expected in its relationship to the dependent variable it does not appear to make a highly significant contribution to blow-out. However, when interacting with tenure the coefficient is much more significant. The coefficient of this
Table 6. INTRA-URBAN ANALYSIS RESULTS PROXIMITY TO LOWER CLASS WHITES

<table>
<thead>
<tr>
<th>Correlation With Blow-Out</th>
<th>R² = .4922</th>
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</thead>
<tbody>
<tr>
<td>Independent Variables</td>
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<td>Proximity to LCW and Tenure</td>
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</table>

Table 7. INTRA-URBAN ANALYSIS RESULTS PROXIMITY TO BLACKS

<table>
<thead>
<tr>
<th>Correlation With Blow-Out</th>
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</tr>
</thead>
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<td>Independent Variables</td>
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<tr>
<td>Proximity to Blacks and Tenure</td>
<td>-.4189</td>
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</tbody>
</table>
interaction term indicates that contrary to expectations the effect of proximity is significantly reduced when there is a high proportion of renters. Or stated otherwise, a high proportion of homeowners in the middle class neighborhoods would appear to exaggerate the effect of proximity to lower class whites. Conversely, when proximity interacts with the percentage of children in middle class neighborhoods the effect of proximity is exaggerated. While this is the relationship expected it is not as significant as the tenure-proximity interaction term. Finally, age appears to make no contribution to the effect of proximity on blow-out.

The analysis of proximity to black neighborhoods yielded results similar to those above. In this case the independent variables explained 43 per cent of the variance. Proximity of middle class households to blacks is also of the expected sign, but again makes relatively little contribution to blow-out. When children are present, however, that effect is substantially increased. This appears to be the most important variable in the equation and is considerably more important than in the case of proximity to lower class whites. Again it appears that a high proportion of owner occupiers adds considerably to the effect of proximity to blacks. The percentage of the heads of households over age forty-five on the other hand seems to be unimportant with no significant relationship to the dependent variable.

In comparing the two analyses it seems that in the case of proximity to blacks, children play a more important role in
inducing blow-out. Otherwise the results of the two analyses are very similar. In both cases proximity alone seems to be associated with some blow-out effect. A high proportion of home owners seems to exaggerate the effects of proximity on blow-out and age is relatively insignificant.

ii) Cartographic Analysis: The cartographic portrayal of the location of social class groups is shown in Figures 2 through 5. These maps show the relative proximity of middle and upper class neighborhoods to black and lower class white neighborhoods for four cities. Included are lower class neighborhoods or tracts with social class scores below one standard deviation below the SMSA median; middle class neighborhoods or tracts with social class scores from one standard deviation below the SMSA median to one standard deviation above the SMSA median; upper middle class neighborhoods or tracts with social class scores between one and two standard deviations above the SMSA median; and upper class neighborhoods or tracts with social class scores more than two standard deviations above the SMSA median. Also shown is the extent of neighborhoods or tracts with more than twenty-five percent of their population black.

From this visual presentation it is apparent that upper class households are not always protected from blacks and lower class whites by a middle class buffer although in the case of Milwaukee and Atlanta this is most nearly so. On the other hand in Dayton and Portland, Oregon, one finds upper class neighborhoods
Figure 2  MILWAUKEE: Distribution of Social Class and Race, 1960
Figure 3: DAYTON: Distribution of Social Class and Race, 1960
Figure 4. ATLANTA: Distribution of Social Class and Race 1960
Figure 5. PORTLAND: Distribution of Social Class and Race 1960
Figure 6 MILWAUKEE: Social Class Change in Middle, Upper Middle, and Upper Class Areas, 1960-70
Figure 7: DAYTON: Social Class Change in Middle, Upper Middle, and Upper Class Areas, 1960-70
Figure 8. ATLANTA: Social Class Change in Middle, Upper Middle, and Upper Class Areas, 1960-70
Figure 9. PORTLAND: Social Class Change in Middle, Upper Middle, and Upper Class Areas, 1960-70
in juxtaposition with black and lower class white neighborhoods. If one compares these maps with the relative proximity measures for each city shown in Table 8, one finds a certain degree of consistency: in Atlanta and Milwaukee middle class neighborhoods are indeed in closer proximity to blacks and lower class whites.

The maps in Figures 6 through 9 show the magnitude and direction of changes in social class scores in middle and upper class neighborhoods. Those changes have been characterized as increases, small decreases, moderate decreases, and large decreases. A small decrease is a decline in the social class score for that tract of .5 standard deviations or less. A moderate decrease is a decline of .5 to 1.0 standard deviations and a large decrease is over 1.0 standard deviations.

From this analysis it seems apparent that the largest declines in social class scores are not necessarily in neighborhoods in close proximity to black or lower class neighborhoods. In fact, for these particular cities the areas with the largest decline in social class scores would seem to be widely scattered. Similarly areas with increases in tract scores are found both close to and far away from the black and lower class tracts. This, too, would seem to be consistent with the statistical findings that proximity of middle class households to blacks or lower class neighborhoods alone is insufficient to induce substantial blow-out.
Table 8. PROXIMITY INDICES OF MIDDLE CLASS HOUSEHOLDS TO BLACKS AND LOWER CLASS WHITES

<table>
<thead>
<tr>
<th>City</th>
<th>Proximity To LCW</th>
<th>Proximity To Blacks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atlanta</td>
<td>-.501</td>
<td>-.671</td>
</tr>
<tr>
<td>Boston</td>
<td>-.327</td>
<td>-.377</td>
</tr>
<tr>
<td>Chicago</td>
<td>-.428</td>
<td>-.109</td>
</tr>
<tr>
<td>Dayton</td>
<td>-.341</td>
<td>-.277</td>
</tr>
<tr>
<td>Kansas City</td>
<td>-.259</td>
<td>-.527</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>-.534</td>
<td>-.468</td>
</tr>
<tr>
<td>Memphis</td>
<td>-.440</td>
<td>-.693</td>
</tr>
<tr>
<td>Miami</td>
<td>-.438</td>
<td>-.350</td>
</tr>
<tr>
<td>Milwaukee</td>
<td>-.411</td>
<td>-.410</td>
</tr>
<tr>
<td>Norfolk</td>
<td>-.208</td>
<td>-.093</td>
</tr>
<tr>
<td>Philadelphia</td>
<td>-.359</td>
<td>-.221</td>
</tr>
<tr>
<td>Portland, Oregon</td>
<td>-.426</td>
<td>-.151</td>
</tr>
<tr>
<td>Rockford</td>
<td>-.052</td>
<td>-.605</td>
</tr>
<tr>
<td>San Diego</td>
<td>-.613</td>
<td>-.647</td>
</tr>
</tbody>
</table>
Discussion

The results presented here would seem to suggest that there is only limited support for the hypothesized process. Proximities of middle class households to blacks or lower class whites do not appear to be a major contributor to blow-out. Neither appears to be related to blow-out scores at any acceptable level of significance though in both cases the signs of the relationships are as hypothesized. One would have to conclude, however, that there is little support for the process hypothesized by Harvey where an expanding lower class or black population and an established upper class pressure middle class households to the point where they are forced to suburbanize. On the basis of these findings one might also question the generality of Morrill's model, Leven's findings in St. Louis, or Pryor's findings that proximity to a large mass of blacks is a major stimuli for residential change. The results of this analysis would seem to indicate that proximity to blacks or lower class whites alone is insufficient to induce blow-out.

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2 David Harvey, et. al., The Housing Market and Code Enforcement In Baltimore (Baltimore Urban Observatory Incorporated, July, 1972).


4 Charles L. Leven, et. al., Urban Decay In St. Louis, (Institute For Urban and Regional Studies, St. Louis, Missouri, March, 1972), Distributed by National Technical Information Services, U.S. Department of Commerce.

The effect of proximity when tenure is also considered is much more important even though the relationship is the opposite of that expected. It was hypothesized that a high proportion of renters in middle class neighborhoods would result in blow-out when those households were faced with substantial negative externalities. This was thought to be true as a result of the greater mobility of renters. Despite this, it is the cities with high rates of home ownership in middle class neighborhoods that have experienced a greater tendency toward blow-out. These results would seem to suggest that home owners are concerned with the effect that proximity to blacks or lower class whites will have on their property values. This is consistent with the findings of Little who found that proximity to blacks is the most important factor in determining preferences for neighborhoods among homeowners. Significantly, however, the results derived here do not seem to differ between proximity to lower class whites and proximity to blacks. In both the cases of proximity to blacks and proximity to lower class whites high rates of home ownership are associated with blow-out.

It would appear then that these findings are not consistent with the explanations offered in Chapter Two of this dissertation. Instead of the potentially more mobile renters relocating when...

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faced with negative externalities it is the home owners who choose other locations. It would seem then that it is not reduced utility from living in proximity to these groups which is most distasteful to households, but the possibility of reduced property values.

In addition to tenure, the percentage of households in middle class neighborhoods with children also seems to be important in the blow-out process. The "children" variable did intensify the effect of proximity as hypothesized particularly in the case of proximity to black neighborhoods. The effect is considerably less in the case of proximity to lower class whites. This is consistent with the findings of Wolf and Lebeaux and Downs who suggest that households move or seek out suburban locations in order to avoid having their children mix with black children. It also offers further support to the finding of Clotfelter that desegregation of schools increases the sensitivity of white households with respect to neighborhood racial composition. The controversy over busing

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of school children to achieve racial balance would also seem to indicate the concern that white households have about their children mixing with black children. These results would suggest that increases in black enrollment in city schools is likely to result in further suburbanization of whites. However, it appears that it affects middle class more than upper class households and, therefore, contributes to blow-out.

Least significant in their contribution to blow-out are the age-proximity interaction terms. In both the cases of proximity to blacks and lower class whites, age did not reduce or intensify the relationship of proximity to blow-out. The hypothesis that youthful middle class households are likely to relocate to the suburbs when pressured by expanding black or lower class neighborhoods must be rejected. One might, therefore, conclude that social equity invested in a neighborhood, or inability to finance housing elsewhere plays little part in the differential suburbanization of upper and middle class households.

In general it appears that there is only limited support for the hypothesized processes. For the majority of cities examined here, middle class households are indeed in closer proximity to blacks and lower class whites than upper class households. However, that proximity alone has not resulted in blow-out to the expected extent. On the other hand, when children are present that effect is exaggerated. This is particularly true with respect to proximity to
black neighborhoods. A large percentage of owner-occupiers also appears to intensify the tendency toward blow-out.

Summary

In this chapter a methodology was specified for evaluating the intra-urban contribution to blow-out. The results of that evaluation were then presented and discussed.

As in the previous chapter the dependent variable was the set of blow-out scores calculated in Chapter 5. The independent variables evaluated here include a measure of proximity to negative externality producing neighborhoods; the percentage of households in middle class neighborhoods under age forty-five; the percentage of households in middle class neighborhoods with children under eighteen; and the percentage of the houses in middle class neighborhoods occupied by renters. Each of the latter three variables was introduced into the model with the proximity measure as interaction terms. This analysis was performed first with respect to proximity to lower class white neighborhoods and second, with respect to black neighborhoods.

The proximity measures were constructed by using a potential model. For each upper and middle class tract a score was calculated which served as a measure of the potential negative externalities which could be derived from black or lower class white households.
The criteria for mapping the location of the social groups within the city and the changes in social class scores in upper and middle class tracts were also outlined.

The results of these procedures indicated that middle class households are generally in closer proximity to black and lower class white neighborhoods than upper class households. However, such proximity was found not to be a major contributor to blow-out except when a large percentage of the households had children under eighteen. On the other hand it was found that a high proportion of renters in those middle class neighborhoods significantly reduced the contribution of proximity to blow-out.

The overall results were very similar for the analyses of proximity to blacks and proximity to lower class whites. However, the presence of children seemed to be much more important for the neighborhoods in close proximity to blacks than for those close to lower class whites. The major findings here are first that a high proportion of home owners in those middle class neighborhoods close to blacks or lower class whites is associated with blow-out; second, a high proportion of households with children in those middle class neighborhoods close to blacks is also a correlate of blow-out. The following chapter summarizes the results of this dissertation.
SUMMARY
Chapter 8

The primary focus of this dissertation has been on the changing social composition of large central cities across the United States. In recent years much has been said about the loss by central cities of their upper and middle class populations. This is said to result in a loss of fiscal resources to the central city and to be a primary reason for the increasing social and fiscal problems faced by those cities. However, the exact nature of, and the processes leading to, changes in social class composition are open to some question. It has been maintained by most researchers that central cities are losing their upper class populations and to a lesser extent, their middle class populations, both of whom are pressured by expanding black and lower class white neighborhoods. Conversely, a few others have maintained that those households with the most resources—the upper class households—are able to preserve the high quality of their central city environments and thus are not subject to pressures to suburbanize. Middle class households on the other hand are unable to prevent deterioration in their residential utilities and are induced to seek out suburban locations. This latter idea has been referred to in this dissertation as the blow-out hypothesis. In this
research an attempt has been made to evaluate the differential rate of decline in the number of upper and middle class households living in the central city and thus to evaluate the blow-out hypothesis.

A conceptualization of neighborhood change was presented drawing upon various themes in the literature. Alluded to in that discussion were the attributes of housing environments, household preferences for housing environments and how they interact to produce the social and racial mosaic found in most urban areas. The housing environments are assumed to be allocated to households through competition in the market and political arena and on the basis of available resources.

In the conceptualization presented in Chapter 2 four attributes of housing were identified: the physical attributes of the unit; accessibility to a set of services and employment opportunities; neighborhood characteristics; and the services and obligations attached to property ownership in the jurisdiction where the unit is located. The latter two of these were thought to be more important to the process of change than the former.

Households were thought to have varying preferences for neighborhood social composition in particular. For example, black households are thought to prefer racially integrated neighborhoods, and lower class white households socio-economic integration. On the other hand middle and upper class white households appear to prefer an absence of blacks or lower class whites in their
neighborhoods. However, the strength of these preferences may vary. For example, preference for social environmental composition is thought to be more important to those with children, and to owner occupiers than to childless or renter households. Since the preferences of these different groups appear to be incompatible with one another the competitive process resolves the conflict. Consequently, environments are likely to be allocated to households on the basis of available resources.

In addition to the neighborhood characteristics the bundle of tax rates and services associated with housing is also thought to be increasingly important. It appears that in their locational decisions households are responding increasingly to lower taxes and superior services in suburban jurisdictions. Due to the regressiveness of the tax structure in most central cities and the inability of black and lower class households to suburbanize, it was argued that it is middle class households who are likely to gain by suburbanizing. The relative tax rates and levels of expenditures for services such as education and crime protection are, therefore, thought to be important in the changing social composition of central cities.

The resources defined as necessary for competition in the political and market processes are education and income. It is thought that economic resources, and to a lesser extent educational resources, facilitate operation in the market. The first enables households to bid for preferred environments and the second
provides information about the operation of the housing market. In the political process education is probably the most important since it aids households in articulating demands and in knowing where to put pressure on the political process. Income may also facilitate competition in the political arena by enabling households to purchase expertise such as the services of a lawyer.

The competition in the market place is likely to determine the location of households. Competition in the political process is more likely to be important in maintaining the quality of the environment where the household is located.

A third chapter presents the specific model of neighborhood change to be evaluated in the dissertation. It is suggested there that the locational structure of social class and racial groups determined by the market process is such that upper class households are protected from expanding lower class neighborhoods by a middle class buffer. Secondly, it is also suggested in Chapter 3 that upper class households—due to their superior resource—are, when necessary, able to protect their neighborhoods from the negative externalities provided by the expanding black and lower class white neighborhoods. Additionally, there are the relatively greater jurisdictional benefits that middle class households stand to gain by suburbanization.

As a result of these considerations it was hypothesized that the number of middle class households in central cities is decreasing relative to the number of upper class households. There
is, in brief, a process of what has been defined as blow-out. It was hypothesized further that the extent of blow-out would vary as a function of the central city-suburban disparities in educational expenditures, in tax rates and crime rates. These effects, moreover, were expected to be dependent upon the size of the lower class population in the central cities. It was also hypothesized that the extent of blow-out would vary across cities as functions of the proximity of middle class households to black and lower class white neighborhoods. This proximity effect was also thought to vary according to the proportion of households with school age children, the proportion of renter households and the proportion of heads of households under age forty-five, all in middle class neighborhoods.

The first of the hypotheses to be evaluated was that blow-out does indeed occur. In examining this hypothesis in Chapter 5 it was suggested that blow-out would be more prevalent in large cities than small cities and also in cities of northeastern and northcentral United States than cities in the south or west. An appropriately stratified random sample of cities was, therefore, selected for analysis. An index of social class was constructed for each census tract by combining median education and median income. Census tracts were then divided into lower, middle, and upper classes and the relative changes in the number of people living in middle and upper class tracts between 1960 and 1970 calculated. The ratio of these changes was used as a measure of
blow-out. The result of this analysis indicated that blow-out was not a widespread phenomenon with less than one fourth of the cities analyzed yielding the expected blow-out pattern. Neither did the scores vary across city size groups in any regular manner. On the other hand the blow-out scores were related to the regional location. However, it was western cities that were most likely to have experienced blow-out, whereas, cities in the northeast were the least likely. From these results it was concluded that there is only minimal support for the hypothesized pattern of blow-out.

In Chapter 6 an attempt was made to explain the variation in blow-out scores with a set of jurisdiction-wide variables. The variables examined here were thought to be indices of the relative benefits that middle and upper class households could derive by suburbanization. Included were measures of the disparity between central city and suburbs in educational expenditures, in tax rates and in crime rates. Also included in the analysis was the proportion of the central city population that is lower class since it was hypothesized that a larger lower class population would increase the contribution of the above variables.

In this stage of analysis only the disparities in educational expenditures were significantly related to the dependent variable. However, that relationship was contrary to that expected, with educational disparities contributing to upper class suburbanization rather than to blow-out. However, when the per cent of the population, lower class, increases, educational disparities are more
likely to be associated with blow-out than when the per cent lower class is small. From this it was concluded that only educational expenditure disparities had any significant relationship to blow-out scores and that relationship varies according to the relative size of the lower class population.

It appears then that the jurisdiction-wide variables do play a role in explaining differential rates of suburbanization. This effect is most important in the area of educational expenditures and seems in this case to be related to the size of the lower class population. This would lend further support to the claim that the services and obligations attached to housing are of increasing importance in the residential location decision.

In the intra-urban analysis in Chapter 7 the focus shifted to the effects of the locational structure of social and racial groups in the central city. Again the dependent variable was the set of blow-out scores derived in Chapter 5. The analysis was performed both with respect to proximity to blacks and with respect to proximity to lower class whites. In the former case the independent variables included the measures of proximity to blacks and three interaction terms in which age, children, and tenure interacted with the proximity measure. Proximity to lower class whites and its interaction with age, children, and tenure variables were the independent variables in a second analysis. It was expected that the effect of proximity on blow-out would be
greater when households are young, when children are present and when there is a high proportion of renters in the neighborhood.

In evaluating these models it was found that proximity to either blacks or lower class whites alone was not strongly related to blow-out, although the signs of the relationships were as expected. Tenure, however, exhibited a strong effect on proximity. A high percentage of renters served to reduce the apparent contribution of proximity to blow-out or conversely a high percentage of owner occupiers intensified the effect of proximity. Similarly in those middle class neighborhoods where large numbers of children were present proximity was more likely to be related to blow-out than where there were few children.

The only notable difference between the effect of proximity to blacks and proximity to lower class whites was the greater effect of children on proximity to blacks. Thus it would appear that proximity to blacks or lower class whites is strongly related to blow-out when children are present and when there is a high proportion of home owners.

The results derived from this research indicate only limited support for the blow-out hypothesis with only seven of thirty-four cities exhibiting the expected pattern. There is also limited support for the hypothesis that jurisdiction-wide variables contribute to blow-out. The most convincing evidence seems to suggest that the jurisdiction-wide variables are more likely to be identified with the loss by the central city of upper class households,
although when the percentage lower class increases educational expenditure disparities are likely to be associated with blow-out. Finally, there is partial support for the hypothesis that the locational structure of social class groups in central cities may lead to blow-out. Middle class proximity to blacks or lower class whites does lead to blow-out if children are present or if there is a high proportion of home owners in that middle class neighborhood.


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