2-1-1975

Residential Segregation in Metropolitan Connecticut

Kenneth P. Hadden
University of Connecticut - Storrs

Thomas Werling
University of Connecticut - Storrs

Follow this and additional works at: http://digitalcommons.uconn.edu/saes

Part of the Demography, Population, and Ecology Commons, Inequality and Stratification Commons, Race and Ethnicity Commons, Regional Sociology Commons, and the Urban Studies and Planning Commons

Recommended Citation

Hadden, Kenneth P. and Werling, Thomas, "Residential Segregation in Metropolitan Connecticut" (1975). *Storrs Agricultural Experiment Station.* Paper 47.
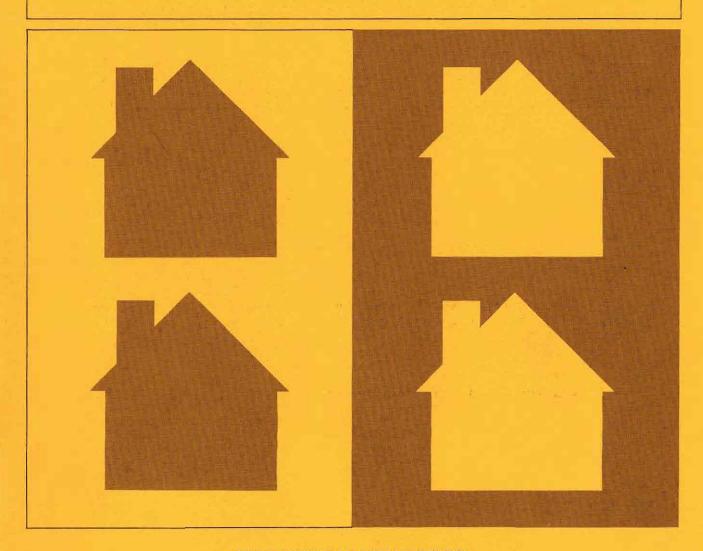http://digitalcommons.uconn.edu/saes/47

Residential Segregation in Metropolitan Connecticut

By Kenneth Hadden and Thomas Werling, Department of Rural Sociology

TABLE OF CONTENTS

Page

RESIDENTIAL SEGREGATION IN
METROPOLITAN CONNECTICUT: 1970

by

Kenneth Hadden and Thomas Werling*

INTRODUCTION

One easily observable fact of urban structure is that people with
similar backgrounds and lives are often found living near one another.
This is not a recent phenomenon. Excavations and reconstruction of the
central Mexican city of Teotihuacan, which at the height of its power
around 500 A.D. was larger than imperial Rome, reveal that persons of a
particular occupation resided with their families in apartment buildings
along with others in the same occupation (Millan, 1967). A similar sit-
uation existed in 18th and 19th Century London, where tanners, silver-
smiths, barrel makers and other occupational groups lived and worked on
streets which were often named after the occupation practiced there.

Of course, it was not only occupational groups which resided prox-
imate to each other. Other socially relevant characteristics, such as
wealth, race, national origin, and caste resulted in the creation of dis-
tinctive neighborhoods in early and contemporary cities. In a nation of
immigrants, such as the United States, these neighborhoods are perhaps
more prominent than elsewhere; New York City, as well as other American
cities, have had and continue to have their Chinatowns, Harlems and Little
Italys.

Racial and ethnic neighborhoods in American cities in the recent past
and present have been extensively studied (see, for example, Lieberson,
1961, 1963; Cressey, 1938; Ford, 1950; Burgess, 1928; Duncan and Lieber-
son, 1959). A conclusion common to many of these studies is that recent
arrivals to the city from foreign origins often settle together in soli-
tary, easily identified ethnic enclaves for a generation or so. Such en-
claves are generally in the sections of the city characterized by high
population density and deteriorating housing. As these ethnic groups be-
come assimilated into American and urban culture, which is to say by the
second or third generation, they move outward to suburbia or within the
city to more desirable areas. In short, these groups of fairly recent
foreign origin become virtually indistinguishable from citizens of longer
standing and this is reflected in their residential integration.

*   Assistant Professor and Graduate Assistant, Department of Rural
    Sociology.

Many American Negroes, on the other hand, have been living in cities for generations and, in general, have not experienced residential integration to an extent approaching that of their fellow citizens of European origin. The persistence of Negro residential segregation and its extent in large American cities have been the subject of study by a number of investigators (see Taeuber and Taeuber, 1965; Taeuber, 1965; Duncan and Duncan, 1957; Clemence, 1967; McIntire, 1960). These studies reveal that there is substantial and widespread residential separation of the races in contemporary cities in this country and that there is little indication that this racial segregation is diminishing.

In questioning the persistence of Negro residential segregation, Myrdal (1944) suggested three possible explanations: first, Negroes live mainly near other Negroes because that is where they choose to live; second, Negroes live where they do - often in ghettoes - because they are unable to afford to live in the better, predominantly white neighborhoods; and third, discrimination in housing markets - both subtle and outright - prevent Negroes from buying or renting housing in white neighborhoods.

The first explanation can be dismissed as relatively insignificant in a society where Negroes moving into white neighborhoods are frequently socially ostracized and occasionally subjected to physical violence; in short, the choice by Negroes of where to live can hardly be a free one in a society where racial prejudice is widespread.

Taeuber (1965) investigated the plausibility of each of the other two explanations and found that the poverty explanation was not without merit, but that there was substantially greater residential segregation than would be expected even when the generally lower incomes of Negroes are taken into account. Taeuber therefore concluded that "neither free choice nor poverty is a sufficient explanation for the universally high degree of segregation in American cities. Discrimination is the principal cause of Negro residential segregation, and there is no basis for anticipating major changes in the segregated character of American cities until patterns of housing discrimination can be altered."

This report, one of a continuing series dealing with population trends in Connecticut, will investigate several aspects of residential segregation of Negroes and Spanish language persons in the state's metropolitan areas. First, has residential segregation increased or decreased during the 1960's? Second, in which metropolitan areas is segregation most pronounced? Least pronounced? Third, what differences, if any, exist between patterns of segregation in central cities and in suburbs of the state's metropolitan areas? And finally, what are some of the major implications of the responses to the foregoing questions?

METHODOLOGY

In order to achieve the objectives listed above we must be able to measure the degree to which blacks and whites, Spanish and whites, and Spanish and blacks are segregated from each other. A variety of such measures exist, many of which have been described and compared by Duncan and Duncan (1955). They have concluded that one of the best and most easily obtained measures is the coefficient of segregation which will now be defined.

Most metropolitan areas are divided-up for statistical purposes into census tracts. Tracts are designed to be relatively homogeneous in terms of various population characteristics, socioeconomic status and general living conditions. Tracts average about 4,000 residents although some contain very few persons and others contain as many as 10,000 residents. Tracts will be the units among which residential segregation is measured since the U.S. Bureau of the Census reports the numbers of Negroes, Spanish language persons and total population[1] for each census tract, thereby providing the necessary information for the computation of coefficients of segregation.

The first step in computing the coefficient of segregation is to obtain percentage distributions of whites, blacks and Spanish across census tracts; that is, we ascertain the percentage of the total white population of the city residing in each tract in a given central city, for example, and similarly for blacks and Spanish. This is done separately, too, for suburban rings and for entire metropolitan areas. Figure 1 shows which towns are central cities and which are included in suburban rings. Once this is done, we merely subtract, for example, the percentage of blacks from the percentage of whites in each census tract, then sum the positive (or negative) differences across all census tracts. The resultant sum is the coefficient of segregation. In symbolic terms, the formula for the coefficient of segregation is:

$$\text{Coefficient of Segregation} = \sum_{i=1}^{n} X_i - Y_i, \text{ when either } X_i < Y_i \text{ or } Y_i < X_i$$

Where:

i refers to census tracts of which there are "n" in the area,
X_i = the percent of a group's total population living in census tract i,
and Y_i = the percent of another group's total population living in census tract i.

The value of the coefficient of segregation will be at a maximum of 100 (complete segregation) when, for example, no whites live in tracts occupied by blacks and no blacks live in tracts in which whites live; and will be at a minimum of 0 (complete integration) when the percentages (not numbers) of whites and blacks living in each tract is the same.

Because the foregoing description of the computations of the coefficient of segregation is rather complicated, let us illustrate the procedure with the example of the Meriden metropolitan area (which coincides with the city since the Census Bureau does not define a suburban ring for the city of Meriden). Table 1 presents all the information necessary to compute the three coefficients of segregation across Meriden's 17 census tracts.

---

1. The white population of tracts is not given directly so it is necessary to estimate these figures. This is done by subtracting the number of Negroes and the number of Spanish persons in each tract from the total population of the tract. Therefore, when we speak of "whites", we are merely using a convenient shorthand for "non-Spanish speaking whites". For a more detailed definition of Negro and Spanish, see Hadden (1974a).
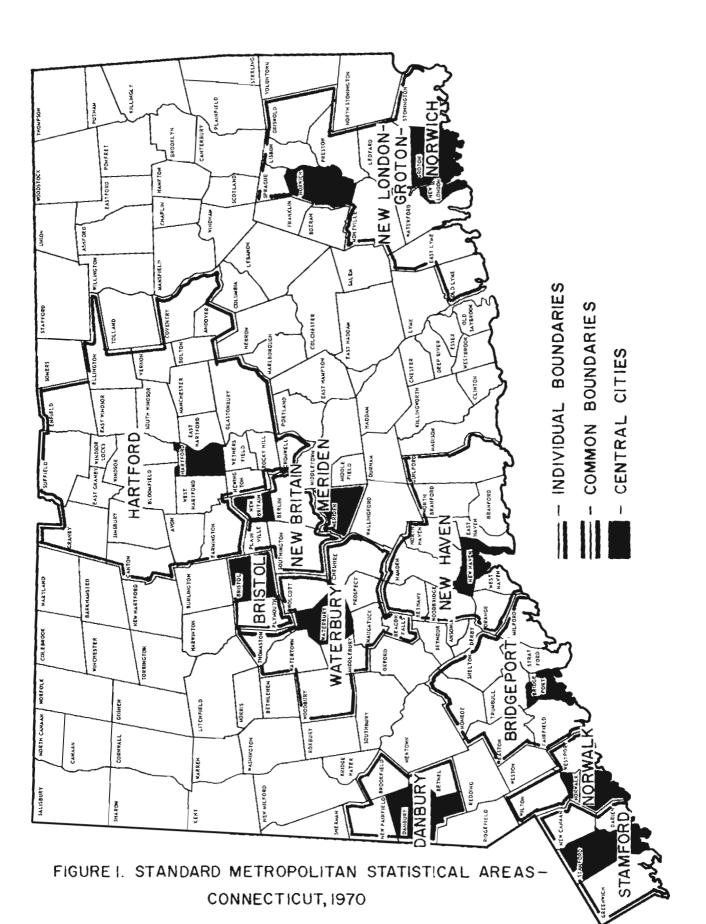
FIGURE I. STANDARD METROPOLITAN STATISTICAL AREAS—
CONNECTICUT, 1970

TABLE 1: Distribution of White, Negro and Spanish Population of Meriden, by Census Tract: 1970

Census Tract Number*	Numbers of:			Percentage of Each Group Residing in Specific Census Tracts			Positive Percentage Difference Between:		
	Whites	Negroes	Spanish	Whites	Negroes	Spanish	White-Negro	White-Spanish	Negro-Spanish
1701	1119	306	874	2.2%	22.0%	24.7%	—	—	—
1702	2011	50	356	4.0	3.6	10.0	0.4	—	—
1703	2456	190	345	4.8	13.7	9.7	—	—	4.0
1704	1661	35	101	3.3	2.5	2.8	0.8	0.5	—
1705	4402	56	65	8.6	4.0	1.8	4.6	6.8	2.2
1706	2848	0	33	5.6	0.0	0.9	5.6	4.7	—
1707	2886	0	120	5.7	0.0	3.4	5.7	2.3	—
1708	5126	27	46	10.1	2.0	1.3	0.1	8.8	0.7
1709	2311	110	279	4.5	7.9	7.9	—	—	—
1710	1319	92	307	2.6	6.6	8.7	—	—	—
1711	3847	49	104	7.6	3.5	2.9	4.1	4.7	0.6
1712	5816	0	144	11.4	0.0	4.1	11.4	7.3	—
1713	3848	119	159	7.6	8.5	4.5	—	3.1	4.0
1714	1682	173	176	3.3	12.4	5.0	—	—	7.4
1715	3177	45	323	6.2	3.2	9.1	3.0	—	—
1716	3037	141	63	6.0	10.1	1.8	—	4.2	8.3
1717	3299	0	51	6.5	0.0	1.4	6.5	5.1	—
TOTAL	50845	1393	3546	100.0	100.0	100.0	50.2	47.5	27.2

*   See U. S. Bureau of the Census (1972a) for maps showing the locations of each tract.
Source: U. S. Bureau of Census (1970).

The first column indicates the identification numbers of the tracts,
Columns 2, 3 and 4 present the numbers of whites, Negroes and Spanish
persons, respectively in each census tract, and Columns 5, 6 and 7 pre-
sent the percentage distributions of whites, Negroes and Spanish persons
across census tracts. From these last three columns we obtain the posi-
tive differences[2] in percentage distributions of the three groups taken
two at a time. The totals at the bottom of Columns 8, 9 and 10 are co-
efficients of segregation; the coefficients are 50.2 for whites and blacks,
47.5 for whites and Spanish, and 27.2 for blacks and Spanish. These co-
efficients mean, for example, that a minimum of 50.2 percent of either the
white or black population of Meriden would be required to change the cen-
sus tract in which they live in order for the white and black populations
to become completely integrated residentially (i.e., to have identical per-
centage distributions - in Columns 5 and 6 of Table 1 - across census
tracts).

This last point suggests a major deficiency of our measurement of
segregation. Because tracts are fairly large units, generally containing
several thousand people, it is quite possible - perhaps even likely - that
there is considerable residential segregation within a given tract. This
information is completely lost, thereby resulting in an understatement of
the amount of residential segregation actually to be found.

RESULTS: METROPOLITAN RESIDENTIAL SEGREGATION IN CONNECTICUT

Coefficients of segregation have been computed for the ten metropo-
litan areas[3] in the state in the same way as for Meriden. These coeffi-
cients form the basis of the ensuing analysis and discussion.

Trends in Residential Segregation During the 1960's:

Table 2 presents segregation coefficients for 1960 (Stockwell and
Pitt, 1968) and for 1970 for the seven central cities of metropolitan areas
for which 1960 data are available.

In 1960, there was considerable segregation of whites from Negroes
in the major Connecticut cities, as indeed was the case for American cit-
ies in general (Taeuber, 1965). The state's capitol city, Hartford, had
the highest degree of segregation; the coefficient of 77.3 indicates that
over three-quarters of either the white or black population would have to
have been relocated to achieve a condition of complete residential inte-
gration. The remaining cities had coefficients ranging from a low of 52.7
(New Britain) to 61.7 (Waterbury) which, while considerably lower than
Hartford, must be regarded as reflecting substantial white-Negro segrega-
tion.

---

2. We could just as well have taken negative differences since the sum
   of positive differences equals the sum of negative differences.
3. The Danbury metropolitan area has been excluded because no census
   tracts have been defined for it and, therefore, computation of a
   segregation index is not possible.

TABLE 2:   Coefficients of Segregation for Seven Metropolitan Cities
           in Connecticut: 1960 and 1970

| | Indexes of Segregation Between: | | | |
| | Whites:Negroes | | Whites:Spanish* | |
City	1960	1970	1960	1970
Bridgeport	53.6%	69.2%	59.5%	53.2%
Hartford	77.3	78.1	65.9	54.0
New Britain	52.7	46.1	51.1	41.8
New Haven	54.5	54.5	42.6	46.1
Norwalk	58.8	60.6	53.3	53.7
Stamford	56.6	64.2	58.6	47.2
Waterbury	61.7	67.2	73.3	61.3

*   In 1960 information was presented for persons of Puerto Rican birth
    or parentage only; therefore, the 1960 coefficient of segregation
    refers specifically to the residential separation of whites and
    Puerto Ricans. The 1970 data, on the other hand, refer to those
    for whom Spanish is a primary language which is, of course, more
    inclusive than the 1960 data. The 1960 and 1970 coefficients of
    segregation are therefore only roughly comparable.
Source: Stockwell and Pitt, 1968; U. S. Bureau of the Census, 1970.

By 1970, five of these seven cities had actually increased the de-
gree to which whites and Negroes live separately from each other; only
New Britain experienced some racial integration, decreasing its coeffi-
cient of segregation from 52.7 to 46.1, while New Haven remained constant
at 54.5. Hartford continued to be the most segregated (with respect to
whites and blacks) of the state's major cities, increasing its coefficient
slightly from 77.3 to 78.1. The greatest increase in white-black segre-
gation occurred in Bridgeport where the coefficient went from a relatively
low 53.6 to a relatively high 69.2. Significant increases in segregation
also occurred in Stamford (from 56.6 to 64.2) and in Waterbury (from 61.7
to 67.2). So, while considerable white-black residential segregation ex-
isted in the state's major cities in 1960, there was no appreciable trend
toward residential integration during the 1960's, in spite of the fact
that this decade is widely regarded as one during which American Negroes
made gains in overall equality.

Because of the lack of comparability between 1960 and 1970 segrega-
tion coefficients for the "Spanish" and white populations (see note to
Table 2), we are not justified in asserting that segregation increased
or decreased between 1960 and 1970. Nonetheless, these figures are in-
structive.

In 1960, the Puerto Rican populations of three (Bridgeport, Stamford,
Waterbury) of the seven cities were more segregated from whites than Ne-
groes were; the differences was most substantial in Waterbury which had
a coefficient of 73.3 (as compared with 61.7 for whites-blacks). In the

remaining four cities Puerto Ricans were less residentially segregated from whites than was the case for Negroes; New Haven had the lowest segregation coefficient (42.6). The fact that all other coefficients exceeded 50.0 indicates that in 1960 Puerto Ricans, like Negroes, were substantially segregated residentially from the majority white population in the major cities of Connecticut.

In general, the 1970 segregation coefficients for whites and Spanish were lower than the 1960 figures, although the extent to which this is attributable to the inclusion in 1970 of Spanish language groups in addition to Puerto Ricans is unknown. In any case, Waterbury had the highest white-Spanish segregation (61.3) and New Britain the lowest (41.8). In all seven cities in 1970 the Spanish population was considerably less segregated from whites than Negroes were. This suggests that Spanish groups, like other ethnic (as distinct from racial) groups in the past, such as Italians, Germans and Poles, may be becoming assimilated into urban American culture more readily and more rapidly than has been the case for Negroes. Even if this is so, however, the segregation coefficients presented in Table 2 reveal that the Spanish language populations are still considerably segregated from the white populations in the state's major cities.

Residential Segregation Within Connecticut Metropolitan Areas in 1970:

Table 3 presents coefficients of segregation between the three groups for ten Connecticut metropolitan areas which were tracted in 1970, and for the central cities and suburban rings. Because there are no clear patterns of segregation revealed by Table 3, we will discuss the coefficients at some length.

In no case are Negro and white segregation coefficients less than 40. The lowest coefficient is observed for the Norwalk suburban ring (41.4), closely followed by the city of Bristol (42.2). The highest degree of segregation occurs in the Hartford metropolitan area (SMSA), with a coefficient of 85.2, followed by Hartford city (78.1), Bridgeport SMSA (76.5) and Waterbury SMSA (74.4).

We can compare white-black segregation in central cities and rings of only eight of the ten metropolitan areas. In six of these comparisons segregation is more pronounced in the central cities; in two - New Britain and New Haven - segregation is greater in the suburban ring than in the central city. Even when segregation is less in the suburbs it is nonetheless substantial. This suggests that patterns of Negro-white residential segregation which have long been a feature of cities are appearing as well in the suburbs at a time when blacks are moving to suburbia in increasing numbers; this point has been made by Farley (1970) and others.

This discussion has thus far ignored the serious impediments to suburban-ward movement by blacks and the consequent gross segregation of blacks in central cities and their relative exclusion from the suburbs; we will consider this question after we have completed the discussion of Table 3.

In general, Spanish language persons were not as segregated from whites as Negroes were in 1970. In only three instances - Hartford's suburban ring and the cities of Bristol and Norwich - are white-Spanish

TABLE 3: Coefficients of Segregation for Whites, Blacks and Persons of Spanish Language for Metropolitan Areas: Connecticut, 1970

Metropolitan Area	Index of Segregation for:		
	Whites-Blacks	Whites-, Spanish	Blacks-Spanish
Bridgeport SMSA	76.5%	61.6%	49.3%
Bridgeport	69.2	53.2	45.8
Suburban Ring	65.5	45.8	69.8
Bristol SMSA	49.7	44.5	45.2
Bristol	42.2	43.8	40.4
Suburban Ring	**	48.2	**
Hartford SMSA	85.2	67.7	62.1
Hartford	78.1	54.0	58.4
Suburban Ring	60.4	62.3	71.6
Meriden SMSA	50.2	47.5	27.2
New Britain SMSA	57.3	43.6	46.9
New Britain	46.1	41.8	47.3
Suburban Ring	63.8	32.7	46.2
New Haven SMSA	67.3	55.0	50.4
New Haven	54.5	46.1	47.9
Suburban Ring	57.4	56.7	65.0
New London-Groton-Norwich SMSA	57.3	51.9	44.7
New London	48.6	39.5	26.9
Norwich	56.2	88.5	87.5
Suburban Ring	47.8	47.1	45.9
Norwalk SMSA	65.5	47.4	30.4
Norwalk	60.6	53.7	19.5
Suburban Ring	41.4	25.5	45.0
Stamford SMSA	69.4	39.3	36.1
Stamford	64.2	47.2	28.1
Suburban Ring	54.9	24.8	43.7
Waterbury SMSA	74.4	58.5	62.9
Waterbury	67.2	61.3	60.4
Suburban Ring	61.2	46.4	61.4

**: No blacks residing in suburban ring tracts in 1970.
Source: U. S. Bureau of the Census, 1970.

segregation coefficients greater than white-Negro coefficients. In some
cases Spanish segregation is actually quite low, particularly in subur-
ban areas. The suburbs of Stamford, Norwalk and New Britain have co-
efficients of 24.8, 25.5 and 32.7 respectively, all considerably lower
than coefficients for their central cities; this suggests that at least
in these metropolitan areas (and perhaps Waterbury as well) those Spanish
language persons who are moving to suburbia are being more readily inte-
grated into white neighborhoods than was the case in the central city.
That this is not widespread is evident from the fact that Spanish persons
are more segregated in the suburbs of Bristol, Hartford, and New Haven
than in the central cities.

In sum, the Spanish population in the state's major cities is not
as segregated from the dominant white population as we have seen that
Negroes are. This is revealed when we compute the averages of white-
black and white-Spanish segregation coefficients over all areas; the aver-
age for white-black is about 59 and for white-Spanish 49.5. Nonetheless,
while the extent of Spanish segregation is relatively low in some areas,
in others it is pronounced.

Just as we have found that whites are generally segregated from both
blacks and Spanish persons, we see from Table 3 that blacks and Spanish
tend to be segregated residentially from each other. True, in a few cases
- in the cities of Meriden, New London, Norwalk and Stamford - this resi-
dential segregation is fairly low, but in other cases (particularly in
suburban areas and in the city of Norwich) black-Spanish segregation is
quite high. It is perhaps not surprising that black and Spanish popula-
tions, with their different cultures (including language and religious
differences), should often reside in separate neighborhoods even as both
groups are prevented (to the extent that Taeuber's argument is correct)
from residing in predominantly white areas.

The major single conclusion to be drawn from Table 3 is, in spite
of considerable variation from one metropolitan area to another and be-
tween central city and suburbia, that the mutual segregation of whites,
blacks and Spanish persons is pervasive and pronounced in the cities of
Connecticut.

Patterns of Residential Segregation Between Cities and Suburbs in 1970:

Table 4 presents the numbers and percentage distribution of whites,
Negroes and Spanish persons within the state's nine metropolitan areas
having suburban rings (Meriden is excluded because it has no ring). Over
93 percent of the 181 thousand black residents of Connecticut reside in
these nine metropolitan areas (see Hadden, 1974a). While this indicates
substantial concentration of blacks in a small number of communities, the
concentration of blacks in the central cities is very nearly as striking;
almost 90 percent of those blacks living in the metropolitan areas reside
in the central city and only about 10 percent live in the suburban rings
of these metropolitan areas. Clearly, then, the great majority of Connec-
ticut's black population lives in central cities of metropolitan areas.

This pattern of concentration of blacks in central cities holds for
all of the areas considered in Table 4. The lowest degree of concentra-
tion of blacks in central cities is observed for the New London-Groton-
Norwich SMSA (86.8%) and the highest degree of concentration for Norwalk

TABLE 4: Numbers and Percentages of White, Negro and Spanish Language
Persons Living in Central Cities and Suburban Rings of Metro-
politan Areas: Connecticut, 1970

Metropolitan Area	Numbers of:			Percentage of:		
	Whites	Negroes	Spanish	Whites	Negroes	Spanish
Bridgeport SMSA Total	343,267	28,913	17,033	100.0%	100.0%	100.0%
Central City	116,893	25,546	14,103	34.1	88.4	82.8
Suburban Ring	226,314	3,367	2,930	65.9	11.6	17.2
Bristol SMSA Total	64,622	618	568	100.0%	100.0%	100.0%
Central City	54,434	577	476	82.2	93.4	83.8
Suburban Ring	10,188	41	92	17.8	6.6	16.2
Hartford SMSA Total	597,707	50,518	15,666	100.0%	100.0%	100.0%
Central City	101,984	44,091	11,942	17.1	87.3	76.2
Suburban Ring	495,723	6,427	3,724	82.9	12.7	23.8
New Britain SMSA Total	136,596	3,953	4,720	100.0%	100.0%	100.0%
Central City	76,016	3,561	3,864	55.7	90.1	81.9
Suburban Ring	60,580	392	856	44.3	9.9	18.1
New Haven SMSA Total	307,654	41,300	6,584	100.0%	100.0%	100.0%
Central City	96,633	36,158	4,916	31.4	87.5	74.7
Suburban Ring	211,021	5,142	1,668	68.6	12.5	25.3
New London-Groton-Norwich SMSA Total	198,451	7,156	2,805	100.0%	100.0%	100.0%
Central Cities	103,509	6,213	1,864	52.2	86.8	66.5
Suburban Ring	94,942	943	941	47.8	13.2	33.5
Norwalk SMSA Total	106,346	9,610	4,143	100.0%	100.0%	100.0%
Central City	66,537	9,336	3,240	62.6	97.1	78.2
Suburban Ring	39,809	274	903	37.4	2.9	21.8
Stamford SMSA Total	185,291	15,079	6,049	100.0%	100.0%	100.0%
Central City	91,261	13,408	4,129	49.3	88.9	68.3
Suburban Ring	94,030	1,671	1,920	50.7	11.1	31.7
Waterbury SMSA Total	192,076	11,854	5,026	100.0%	100.0%	100.0%
Central City	93,155	10,891	3,987	48.5	91.9	79.3
Suburban Ring	98,921	963	1,039	51.5	8.1	20.7

Source: U. S. Bureau of the Census, 1972b, Tables 96 and 112; 1971, Tables
24 and 27.

SMSA (97.1%). There is, in short, little variability across metropolitan areas in the extent to which blacks are concentrated in central cities.

The state's Spanish population is also heavily concentrated in the nine metropolitan areas; over 85 percent of Connecticut's 73 thousand Spanish residents live in these areas. While the Spanish population is not as concentrated in metropolitan areas as the black population, neither is the metropolitan Spanish population as concentrated in the central cities; about 78 percent of the Spanish residents of these metropolitan areas live in the central city, with the remaining 22 percent residing in the suburban rings. The extent to which the Spanish population of the individual metropolitan areas is concentrated in the central cities varies somewhat more than was the case for blacks; the lowest concentration in central cities occurs in the New London-Groton-Norwich SMSA (66.5 percent) and the highest is observed for the Bristol SMSA (83.8 percent).

The heavy concentration of blacks and Spanish persons in metropolitan areas and in central cities takes on significance only in contrast to the residential distribution of the state's white population. A large majority (75.3 percent) of whites also reside in these nine metropolitan areas although this is proportionately much less than either blacks or Spanish. A far smaller proportion of the metropolitan white population lives in the central cities - less than 39 percent. A majority of the state's white population, then, lives in metropolitan areas but of these only a minority live in central cities; over 61 percent live in the suburban portions of metropolitan areas.

It is possible to use the information contained in Table 4 to compute segregation coefficients reflecting the gross disparity of white, Negro and Spanish residential distributions between the central city and suburban rings of these metropolitan areas. Coefficients are computed exactly as they were earlier (see Table 1) except that instead of having a fairly large number of census tracts as units we now have only the city and ring. Coefficients of segregation between central city and suburban ring are presented in Table 5.

Table 5 shows that the segregation of blacks in central cities relative to whites is most pronounced in the Hartford metropolitan area which has a coefficient of 70.2. New Haven (56.1) and Bridgeport (54.3) also have coefficients which exceed 50. Bristol, which has relatively small proportions of all three groups living outside the central city because there is only one town in its suburban ring, has the lowest coefficient of white-black segregation (11.2).

The Spanish populations of metropolitan areas is less segregated in central cities than Negroes. Hartford, New Haven and Bridgeport again display the highest coefficients - 59.1, 43.3 and 48.7 respectively. Whites and Spanish are distributed almost identically between central city and suburbs in the Bristol SMSA as indicated by a coefficient of 1.6.

Finally, Negroes and Spanish persons have relatively low segregation coefficients in all of the metropolitan areas because both groups are heavily concentrated in the central cities. Stamford (20.6) and New London-Groton-Norwich (20.3) are the only areas with coefficients over 20.

TABLE 5:   Coefficients of Segregation Between Central Cities and
          Suburban Rings of Metropolitan Areas: Connecticut, 1970

| Metropolitan Area | Coefficients of Segregation for: | | |
	White-Negro	White-Spanish	Negro-Spanish
Bridgeport	54.3%	48.7%	5.6%
Bristol	11.2	1.6	9.6
Hartford	70.2	59.1	11.1
New Britain	34.4	26.2	8.2
New Haven	56.1	43.3	12.8
New London-Groton- Norwich	34.6	14.3	20.3
Norwalk	34.5	15.6	18.9
Stamford	39.6	19.0	20.6
Waterbury	43.4	30.8	12.6

Source: See Table 4.

Summary

     The information presented above reveals several general patterns.
First, there is considerable and widespread segregation of white, black
and Spanish population in both the central cities and suburbs of Connec-
ticut metropolitan areas.   Second, there has been no general tendency to-
ward decreased segregation of whites from blacks in the state's major
cities during the decade of the 1960's, although there may have been such
a tendency for the white and Spanish populations.   Third, the segregation
observed within both central cities and suburban rings is overlaid upon
and compounded by the heavy concentration or segregation of blacks and
Spanish in central cities and their exclusion from suburban areas as com-
pared with whites.   We have seen, in short, that black and Spanish persons
are very likely to be living in metropolitan areas, in central cities of
metropolitan areas and in their own neighborhoods within the central cities.
Such a pattern of residential segregation and ethnic or racial group iso-
lation from white dominated urban society has or may have serious implica-
tions for the more general integration of blacks and Spanish language per-
sons into the larger society; it may have serious implications, as well,
for the general functioning of that larger society.   We will address some
of these implications in the following section.

CONSEQUENCES OF RESIDENTIAL SEGREGATION

     Residential segregation can have a variety of consequences, mainly
detrimental to the minority group being segregated.   Some of the conse-
quences are direct, immediate and obvious; others are more subtle but no
less important.   We will consider a number of factors which seem to be
influenced by residential segregation including education, employment,

$$Y_6 = 1.77 - 0.1909 \ (Y_5 - 2.545)\theta \pm 0.18, \ R^2 = 0.92$$

in which $\theta = 1$ when $Y_5 \leq 2.545$ and $\theta = 0$ when $Y_5 > 2.545$

$$\text{and} \quad Y_7 = 16.0 - 60.7624 \ (Y_5 - 1.34)\theta \pm 49.0, R^2 = 0.75$$

in which $\theta = 1$ when $Y_5 \leq 1.34$ and $\theta = 0$ when $Y_5 > 1.34$.

Above liver vitamin A concentrations of 3.51 µg (antilog of 2.545×10^{-2}) cerebrospinal fluid pressure was maintained at a geometric mean of 59 mm of saline (antilog of 1.77), but at concentrations $\leq$ 3.51 µg, each 10% decrease in concentration resulted in a 1.7% increase in the pressure. The incidence of squamous metaplasia of the nasolacrimal duct averaged 7.7% (equivalent to an arcsin $\sqrt{\%}$ of 16) at liver vitamin A concentrations greater than 0.22 µg (antilog of 1.34×10^{-2}). Below this concentration the incidence increased and equalled 19%, 36% and 63% at liver vitamin A concentrations of 0.15, 0.10 and 0.05, respectively.

TABLE 2. Effect of increasing duration of vitamin A deficiency upon feed consumption and body weight gain in the weanling male rat.

Criteria	Vitamin A status	Depletion time, days						SD per rat
		0	7	14	21	28	35	
Animals, no	$-$[a]	8	11	5	9	10	11	---
	$+$[a]	9	9	10	9	10	9	
Feed, g/d								
Offered	$-$	--	13.6	15.1	16.7	17.8	17.4	1.5
	$+$	--	13.0	15.0	16.4	17.5	19.2	
Consumed								
Actual	$-$	--	10.9	13.1	14.7	15.8	14.9	1.9
	$+$	--	11.2	13.3	14.5	15.2	17.6	
Adjusted[b]	$-$	--	11.1	12.4	14.8	15.8	15.3	1.8
	$+$	--	11.5	13.1	14.3	15.0	17.5	
Body weight								
Initial, g[c]	$-$	--	71	85	73	74	68	1.0
	$+$	--	70	76	77	76	76	
Terminal								
Actual	$-$	74	107	162	191	231	232	68
	$+$	79	112	158	194	236	279	
Log_{10}	$-$	1.87	2.02	2.20	2.28	2.36	2.36	0.05
	$+$	1.89	2.05	2.20	2.28	2.37	2.44	
Log_{10} adjusted[b]	$-$	1.87	2.03	2.18	2.28	2.36	2.38	0.05
	$+$	1.88	2.06	2.19	2.28	2.36	2.44	
Gain, g/d	$-$	--	5.2	5.5	5.6	5.6	4.7	1.0
	$+$	--	6.0	5.8	5.6	5.7	5.8	

[a] $-$ indicates no dietary vitamin A; $+$ indicates dietary vitamin A fed as retinyl acetate equivalent to 1 µg retinol per gram of basal ration.

[b] Adjusted for initial body weight at the commencement of the comparison period.

[c] Initial body weight at commencement of the comparison period.

15

and Bogue, 1955). The suburbanization of large employers disproportion-
ately affects blacks since they - unlike whites - are generally unable to
follow their employer to suburbia, either because housing is unavailable
to them or because mass transportation is nonexistent. Finally, we should
not overlook the effect of racial or ethnic bigotry as it affects employ-
ment; some employers still refuse to hire minority group workers or hire
only the token few.

Income:

Blacks in Connecticut, as in the nation as a whole, do not fare as
well as whites with respect to income earned. In 1969 the median family
income of whites in Connecticut was over $12,000 while for blacks it was
under $7,800; in short, white families had incomes 57 percent higher than
blacks (Hadden, Groff and Bolduc, 1974).

The fact that blacks have lower family incomes on the average than
whites is partially a consequence of unequal educations and employment
discrimination, both of which indirectly link residential segregation to
income inequality. But it has been demonstrated (Seigel, 1965) that
blacks still earn less than whites even when education and occupation are
taken into account. Often, then, minority workers (including women) do
not receive "equal pay for equal work" reflecting discriminatory practices
at work in the labor market in addition to the effects of residential and
educational segregation and employment discrimination noted above. And,
of course, one result of this income inequality is to relegate low-income
groups to deteriorated, crowded neighborhoods within the central city; in
short, an indirect consequence of residential segregation is more residen-
tial segregation.

Municipal Fiscal Resources:

The flight of the mainly white middle-class from the city to the su-
burbs and a similar outward migration of employers has reduced and con-
tinues to reduce the amount of individual and corporate wealth present in
central cities. This, of course, has a deleterious effect on the munici-
pal tax base and is most pronounced in those cities which have experienced
the greatest concentration of low income groups in the central city. Be-
cause of the relatively low income levels of blacks, the degree of segre-
gation of blacks in central cities can provide an indication of the extent
to which the municipal tax base has deteriorated.

Quantity and Quality of Municipal Services:

The segregation of low income groups and the consequent decrease in
the taxable resources of the municipal government will generally result
in a curtailment of governmental services and/or a deterioration in the
quality of services provided within the central city. The tendency often
is to defer necessary maintenance of existing capital equipment (e.g.,
streets, mass transit facilities, recreational facilities and buildings),
thereby contributing to the general deterioration of the city and in-
creasing the likelihood that remaining middle-class families will move
out of the city; and not to expand social service programs (e.g., health,
education and welfare) at a time when the population requiring these ser-
vices is itself growing. The segregation of low income minority groups

in central cities, in short, results in a general deterioration of the quality and quantity of services provided through a decrease in the munipal tax base; ironically, one outcome of this process may be further segregation of racial and ethnic groups in the beleaguered central city.

Summary:

We have been describing the role played by residential segregation in the continuing poverty of minority groups and in the deterioration of cities. Of necessity we have over-simplified a highly complex process and perhaps overemphasized the role played by residential segregation in the process. The reader should not conclude from the foregoing discussion, however, that to resolve the problem of residential segregation is to automatically remedy the other problems we have mentioned. Nonetheless, we feel that attention must be paid to residential segregation; attempts to alleviate the problems of educational segregation or of municipal finances, for example, will be all the more difficult if racial and ethnic groups continue to be residentially segregated.

By way of summary we include Figure 2 which presents a schematic depiction of the main points made in the preceding discussion of the consequences of residential segregation. It is worth noting the complex interdependence of the parts of the diagram; following the arrows leading away from "residential segregation" to the several consequences of segregation eventually lead back, full-circle, to segregation. This suggests, to the extent that our analysis is plausible, that we are dealing with positive feedback systems which, in the absence of some outside intervention, will continue uninterupted toward some limit. Just what the limit may be is unknown; what is known is that the continued operation of these processes will be detrimental to both the minority groups and communities concerned.

In conclusion, we should stress that while we have presented strong evidence that such processes are operating or, at least, beginning to operate in the state's metropolitan areas, there is nothing unique about metropolitan Connecticut. Similar processes are operating in metropolitan areas throughout the country and, in fact, may most readily be observed in the nation's largest metropolises.
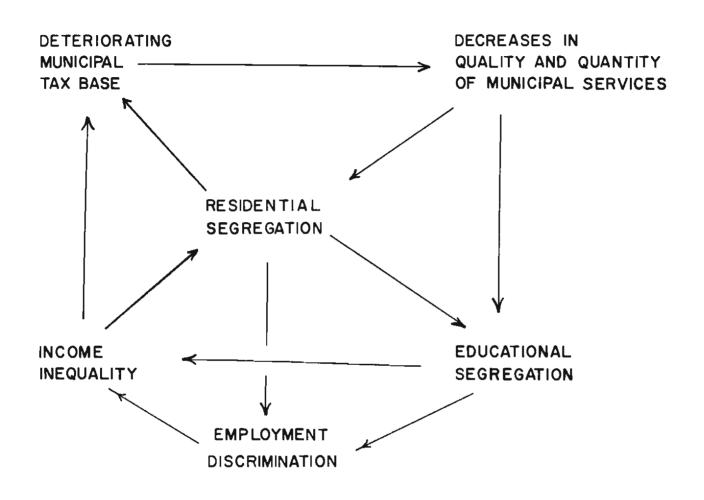
DETERIORATING
MUNICIPAL
TAX BASE

DECREASES IN
QUALITY AND QUANTITY
OF MUNICIPAL SERVICES

RESIDENTIAL
SEGREGATION

INCOME
INEQUALITY

EDUCATIONAL
SEGREGATION

EMPLOYMENT
DISCRIMINATION

FIGURE 2. SCHEMATIC DEPICTION OF SELECTED CONSEQUENCES OF
RESIDENTIAL SEGREGATION

BIBLIOGRAPHY

Burgess, Ernest W. 1928. "Residential Segregation in American
    Cities," Annals of The American Academy of Political and Social
    Science (November).

Clemence, Theodore G. 1967. "Residential Segregation in the Mid-
    Sixties," Demography, Vol. 4, No. 2.

Cressey, Paul. 1938. "Population Succession in Chicago: 1898-
    1930," American Journal of Sociology, Vol. 44 (July).

Duncan, Otis Dudley and Stanley Lieberson. 1959. "Ethnic Segrega-
    tion and Assimilation," American Journal of Sociology, Vol. 4
    (January).

Duncan, Otis Dudley and Beverly Duncan. 1955. "A Methodological
    Analysis of Segregation Indexes," American Sociological Review,
    Vol. 20 (April).

Duncan, Otis Dudley and Beverly Duncan. 1957. The Negro Population
    of Chicago: A Study of Residential Succession, University of
    Chicago Press.

Farley, Reynolds. 1970. "The Changing Distribution of Negroes in
    Metropolitan Areas: The Emergence of Black Suburbs," American
    Journal of Sociology, Vol. 75, No. 4 (January).

Ford, Thomas G. 1950. "Population Succession in Chicago," American
    Journal of Sociology, Vol. 51 (September).

Hadden, Kenneth. 1974a. The Population of Connecticut, 1970:
    Nativity and Racial Composition, Storrs Agricultural Experiment
    Station Bulletin No. 424.

Hadden, Kenneth. 1974b. Labor Force Participation and Employment
    Status in Connecticut, 1970, Storrs Agricultural Experiment Station
    Bulletin No. 431.

Hadden, Kenneth, William H. Groff and Vincent Bolduc. 1974. Income
    and Earnings of Individuals, Connecticut, 1970, Storrs Agricultural
    Experiment Station Bulletin No. 428.

Hartford Board of Education. 1970. Table entitled "Number and Per-
    centage of White, Black, Puerto Rican and Other Students, September
    30, 1970 - Hartford Public Schools," Research Dept.

Kitagawa, Evelyn and Donald J. Bogue. 1955. Suburbanization of
    Manufacturing Activity Within Standard Metropolitan Areas, Scripps
    Foundation, Oxford, Ohio and Population Research and Training Cen-
    ter, Chicago, Illinois.

Lieberson, Stanley. 1961. "The Impact of Residential Segregation on
    Ethnic Assimilation," Social Forces, Vol. 40, No. 1 (October).

Lieberson, Stanley. 1963. Ethnic Patterns in American Cities, The Free Press of Glencoe, Illinois.

McIntire, Davis. 1960. Residence and Race, University of California Press.

Millon, Rene. 1967. "Teotihuacan," Scientific American, Vol. 215 (June).

Myrdal, Gunner. 1944. An American Dilemma, Harper and Brothers.

Seigal, Paul M. 1965. "On the Cost of Being a Negro," Sociological Inquiry, Vol. 35, No. 1.

Stockwell, Edward G. and Thomas H. Pitt. 1969. Residential Segregation in Metropolitan Connecticut, Storrs Agricultural Experiment Station Bulletin No. 410.

Taeuber, Karl E. 1965. "Residential Segregation," Scientific American, Vol. 213, No. 2 (August).

Taeuber, Karl E. and Alma F. Taeuber. 1965. Negroes in Cities: Residential Segregation and Neighborhood Change, Aldine Publishing Co.

U. S. Bureau of the Census. 1970. Fourth Count Summary Computer Tapes: Connecticut.

U. S. Bureau of the Census. 1971. Census of Population: 1970. General Population Characteristics, Final Report PC(1)-B8, "Connecticut," USGPO, Washington, D. C.

U. S. Bureau of the Census. 1972a. Census of Population and Housing: 1970. Census Tracts. Final Reports PHC(1) for Connecticut SMSAs.

U. S. Bureau of the Census. 1972b. Census of Population: 1970. General Social and Economic Characteristics, Final Report PC(1)-C8, "Connecticut," USGPO, Washington, D. C.

OTHER POPULATION BULLETINS AVAILABLE

Other reports published by the College of Agriculture Experiment Station
dealing with the population trends and changes in Connecticut include:

Hadden, Kenneth and Neil Townsend, The Population of Connecticut, 1970:
Age and Sex Composition, Bulletin 421 (April 1973).

Groff, William H. and James C. Reiser, The Population of Connecticut:
A Decade of Change 1960-1970, Bulletin 422 (April 1973).

Steahr, Thomas E., Recent Fertility Trends in Connecticut 1960 to 1970,
Bulletin 423 (June 1973).

Steahr, Thomas E., The Population of Connecticut: Abridged Life Tables
by Sex and Color 1959-61 and 1969-71, Research Report 41 (June 1973).

Steahr, Thomas E., Vincent Bolduc, and Catherine Skambis, The Population
of Connecticut, Town and County Fact Book, 1970, Bulletin 426 (February
1974).

Hadden, Kenneth, The Population of Connecticut 1970: Nativity and Racial
Composition, Bulletin 424 (1974a).

Hadden, Kenneth, The Population of Connecticut: Residential Mobility,
1965-70, Bulletin 425 (1974b).

Hadden, Kenneth, William H. Groff and Vincent Bolduc, Income and Earnings
of Individuals: Connecticut, 1970, Bulletin 428 (1974).

Hadden, Kenneth, William H. Groff, Rosemary Campiformio, and Lakshmi
Krishna Murty, School Enrollment in Connecticut: Past Trends and Future
Prospects, Bulletin 427 (1974).

Steahr, Thomas E., Robert A. Lowe and Charles N. Fitts, Housing Character-
istics for Towns and Counties Connecticut: 1970, Bulletin 429 (July 1974).

Hadden, Kenneth, Labor Force Participation and Employment Status in
Connecticut, 1970, Bulletin 431 (May 1974).