Segregation of European Ethnic Groups in 1940: Findings and Opportunities Based on Restricted IPUMS

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Paper Abstract Submitted for
Presentation at the Annual Meetings of the

Social Science History Association

Chicago, Illinois, November 21-24, 2019

Abstract

We use restricted IPUMS microdata from the 1940 US decennial census to examine residential segregation of select population groups in US urban areas. The main contribution of our research is to establish quantitative estimates of the level and nature of segregation for European immigrant groups in US urban areas in 1940. In all we assess segregation for more than 2,400 pair combinations involving Native-Born Whites, Foreign-Born Whites by country of origin, and Native-Born Blacks. By comparing results on two measures of uneven distribution – the Dissimilarity Index (D) and the Separation Index (S) – we document considerable variation in both the level and the form of segregation. When D and S align at medium and high levels uneven distribution follows a "prototypical" form of "polarized displacement" where the two groups live apart from each other in separate areas (e.g., enclaves and ghettos) where their group predominates. When D and S do not align uneven distribution takes the very different but generally unappreciated form of "dispersed displacement" where D is high but S is low and the two groups live together in neighborhoods that are relatively similar on ethnic composition. We document that patterns of segregation for European immigrant groups are complex. Their segregation from other immigrant groups and from Native-Born Blacks is "prototypical" in form – that is, it involves clear group separation across areas of the city. But their segregation from Native-Born Whites takes the form of "dispersed displacement" wherein group differences in attaining parity-level contact with Native-Born Whites does not involve substantial group separation. Lastly, we examine a new methodological option for measuring segregation at a spatial scale smaller than enumeration districts.

Concepts and Measures

Residential Segregation

We focus on uneven distribution, the dimension of segregation which assesses the extent to which groups live separate and apart from each other in different areas of the city. We measure uneven distribution using two widely used indices: the Dissimilarity Index (D) and the Separation Index (S) (also known as "eta squared" and the "variance ratio"). S is superior to D on technical criteria. But D is better known and has been more widely used in previous research.

We draw on Fossett's (2017) "difference of means" framework which casts D and S as measures that register a "difference of means" on individual-level residential outcomes (y) scored from neighborhood group composition (p). All popular measures of uneven distribution including D and S can be expressed as group differences in scaled contact with the reference group (Fossett 2017). The following generic computing formula implements this approach:

$$\text{Index Score} = \left({}^{1}/_{N_1}\right) \cdot \Sigma\, n_{1i} y_i - \left({}^{1}/_{N_2}\right) \cdot \Sigma\, n_{2i} y_i$$

where i is an index for areas (neighborhoods), n_{1i} and n_{2i} are group counts by area, N_1 and N_2 are group counts for the city, p_i is area group composition given by $n_{1i}/(n_{1i} + n_{2i})$, P is city group composition given by $N_1/(N_1 + N_2)$, and y_i is a residential outcome scored from p_i.

In this frame work, the only difference between measures of segregation is the manner in which residential outcomes (y_i) are scored from area group proportions (p_i). For all indices, the residential outcome (y_i) registers residential contact with the reference group (p_i). The only difference between measures is how the index scores or "scales" contact. S scales contact in its "natural" metric. That is,

for S, residential outcomes (y_i) are set to p_i.

Accordingly, S measures the group difference in average contact with the reference group.

D scales contact in a much different way. Specifically, D rescales the natural metric of contact (p_i) into two values: "contact at or above parity" (1) or "below parity" contact (0). That is,

for D, residential outcomes (y_i) are set to 1 if ($p_i \geq P$) and 0 otherwise.

Accordingly, D measures the group difference in average level of "parity" contact with the reference group.

Polarized versus Dispersed Displacement

The differences between D and S make them sensitive to different aspects of uneven distribution. D registers contact as a binary (0,1) score for "parity". This makes it highly sensitive to group differences in attaining parity contact and insensitive to the quantitative magnitude of the average departures from parity contact that signal group separation. In contrast, S registers contact in its natural metric. This makes it sensitive to the large group differences in average contact with the reference group that arise when groups live apart

from each other in separate areas of the city. It renders it relatively insensitive to group differences in parity contact that involve quantitatively small departures from parity.

Based on these characteristics, values of D and S can be concordant or discordant. When the value of D is high, we know groups differ in the extent to which they achieve parity contact with the reference group. But we do not know whether they live apart from each other in separate areas of the city. The value of S provides a basis for knowing this. If the value of S is low, group differences in parity contact involve quantitatively small departures from parity. As a result, the two groups live in areas that on average are similar on group composition. If the value of S is large, group differences in parity contact involve quantitatively large departures from parity. As a result, the two groups live in areas that on average differ markedly on group composition.

Both patterns –D-S concordance and D-S discordance – are common in empirical research (Fossett 2017) including the research reported here. Unfortunately, the distinction between the two patterns is substantively important but is not widely appreciated. We highlight the difference in terms of the distinction between polarized and dispersed displacement.

Polarized Displacement (Prototypical Segregation). Values of D and S are concordant. Groups are highly separated; that is, they live apart from each other in different areas that are highly "polarized" on ethnic composition. Polarized displacement thus is characterized by the combination of High-D and High-S. This pattern is universally depicted in "textbook" examples illustrating high levels of segregation. It establishes a necessary precondition for group inequality that arises from groups from living in different areas of the city. Figure 1 provides a representative example of this residential pattern.

Dispersed Displacement. Values of D and S are discordant. Groups live together in areas with generally similar ethnic composition. Dispersed displacement thus is characterized by the combination of High-D and Low-S. Surprisingly, the pattern is empirically common, but it is rarely discussed. This is unfortunate, because it is substantively different from polarized displacement. Specifically, the pattern indicates that groups extensively co-reside in the same areas of the city which in turn mitigates against group inequality arising from groups living in different areas of the city. Figure 2 provides a representative example of this residential pattern.

Neighborhood

We have completed analyses in which we measure areas (neighborhoods) using census Enumeration Districts (EDs). These spatial units are roughly comparable to census block groups in more recent censuses.

We also will explore new methodologies for measuring segregation at levels of spatial scale below the census enumeration district. Specifically, we explore the potential to use the individual pages of the census manuscript records as "pseudo-blocks". In general, households on the same enumeration form are located in a small subarea within an enumeration district and contain a number of households and persons comparable to medium-to-large city blocks. Using pseudo-blocks for spatial units has the potential to capture patterns of segregation that would be missed using enumeration districts. This is likely to be especially useful for assessing segregation that plays out at smaller spatial scale

as is often the case for smaller groups and in smaller cities. When measuring segregation for pseudo-blocks, we will used "unbiased" versions of segregation indices developed by Fossett (2017) so segregation index scores are not distorted by the complex patterns of bias that can distort standard scores.

Racial and Ethnic Groups

We measure a wide variety of racial/ethnic groups. These include, Native-Born Whites, Native-Born Blacks, and Foreign-Born Whites by country of origin (e.g., Canada, United Kingdom, Germany, Ireland, Poland, Italy, Russia, etc.). We assess racial /ethnic status for persons (not households).

Cities – Metropolitan Areas

We define cities using county-based metropolitan area definitions from the 1950 census.

Data and Methods

1940 IPUMS 100% Restricted-Use Decennial Census Microdata.

We conduct analyses using the 100% count restricted-use IPUMS files. The restricted files contain full individual and household records including relevant social and demographic characteristics and census enumeration district (ED) codes.

Racial/Ethnic Tabulations. We obtain the counts for racial and ethnic groups needed to compute segregation indices by preparing relevant tabulations of group distributions across enumeration districts (EDs).

Neighborhood Exclusions. We excluded EDs from segregation calculations: (a) when the population is at or above 50% rural farm, or (b) when the population is at or above 30% group quarters and/or inmates of institutions.

Segregation Comparisons. For each city in the analysis we computed segregation index scores for all possible comparisons of groups meeting the following criteria in a given comparison: (a) both groups have a minimum city-level population of 500 and (b) the smaller of the two groups in the comparison is at least 1% of the combined group populations.

Data Disclaimer. Statistical analyses reported here were conducted under the guidelines and review policies of a project approved by the Minnesota Population Center (MPC). The views expressed in this research, including those related to statistical, methodological, technical, or operational issues, are solely those of the authors and do not necessarily reflect views of MPC. All results have been reviewed to ensure that no confidential information is disclosed.

Main Findings and Conclusions

Our findings regarding variation in both the level of segregation and the nature of segregation across group comparisons in 1940 are documented in Table 1 and Figure 3. The findings are consistent with many aspects of spatial assimilation theory. But there are several important exceptions and nuances.

Findings Consistent with Spatial Assimilation Theory

- Segregation between Native Whites and Foreign-Born European groups varies inversely with (a) the duration of substantial group presence in the US and (b) the degree of cultural and socioeconomic similarity of the group.

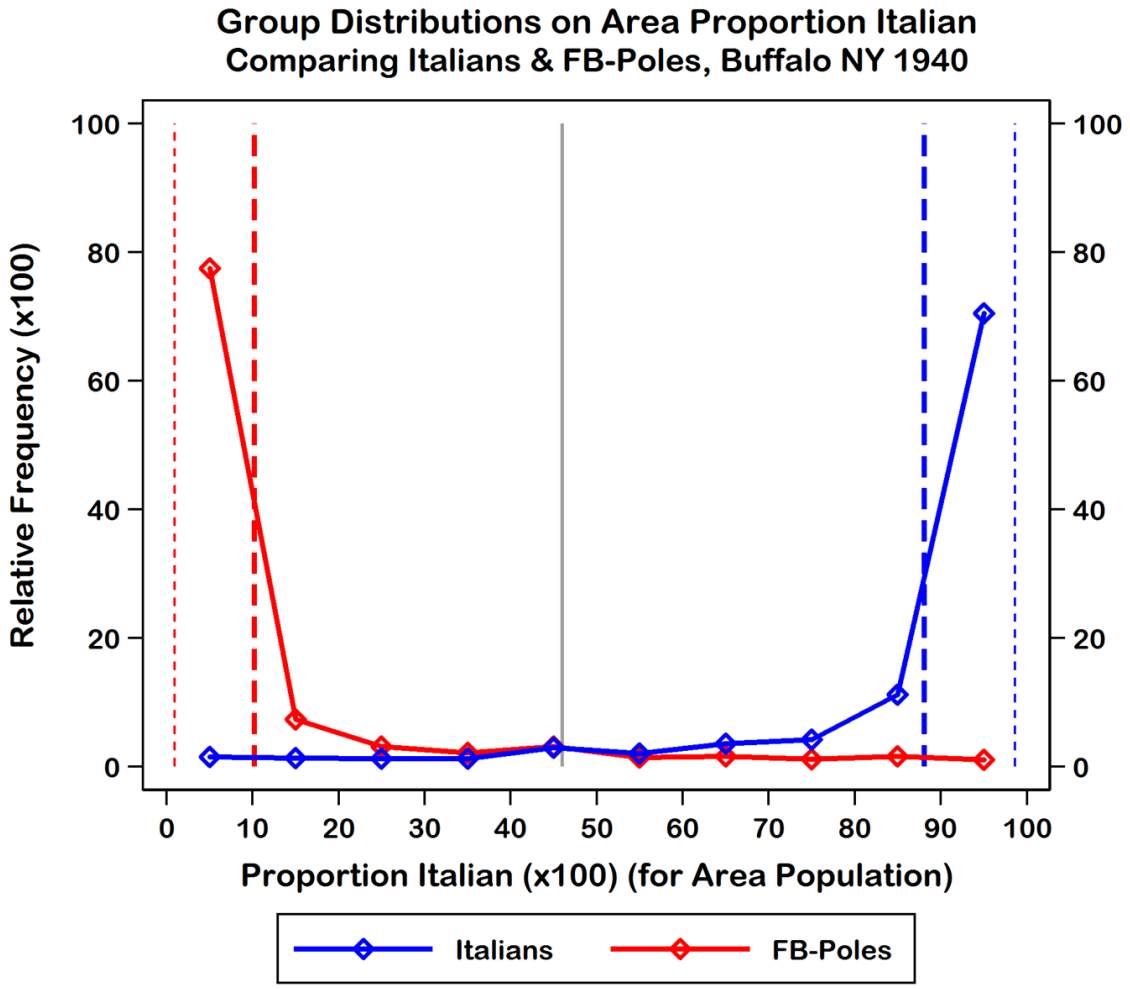
Findings Consistent with Race Discrimination Theory

- Segregation between Blacks and all White groups – Native-Born and Foreign-Born is high.

Several Novel and Sometimes Surprising Findings

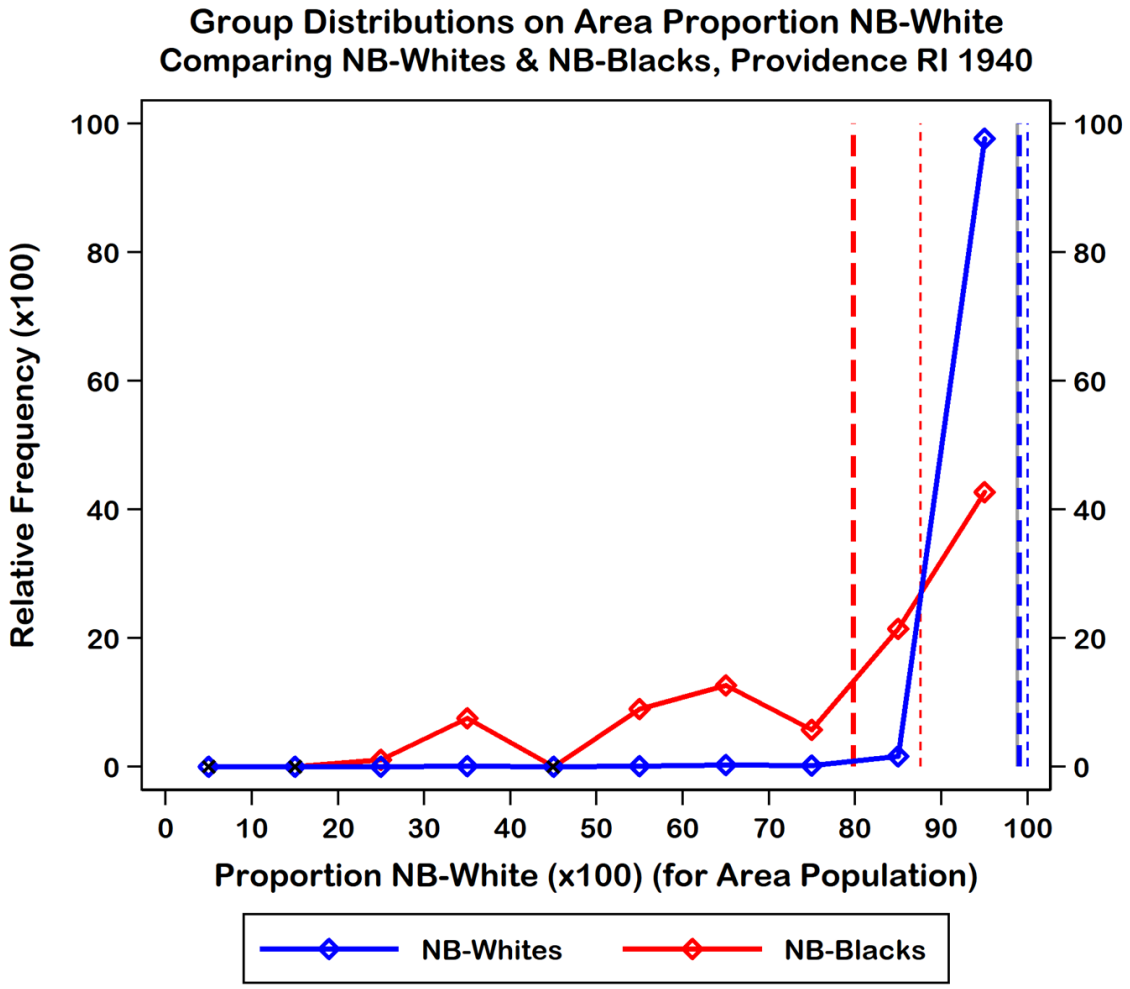
- European immigrant groups are more segregated from each other than from Native Whites.
- Segregation of European immigrant groups from Native Whites is not "prototypical"; it involves dispersed displacement and minimal group separation.
- Segregation of European immigrant groups from each other is "prototypical"; it involves polarized displacement and substantial group separation.
- Segregation of European immigrant groups from Native Blacks is "prototypical"; it involves polarized displacement and substantial group separation.
- Segregation of Native Whites from Native Blacks is not always "prototypical". In some cases it involves polarized displacement and substantial group separation, but in many other cases it involves dispersed displacement and minimal group separation.

Figure 1. Polarized Displacement (High D, High S)



Notes: Standard S = 77.9 = (Y_1 - Y_2) = (88.0 - 10.2) for y_i = p_i based on area population.
Dashed lines denote group means (thick) & medians (thin). (S_{P50} = 97.6, D = 84.8, P = 46.0.)

Figure 2. Dispersed Displacement (High D, Low S)

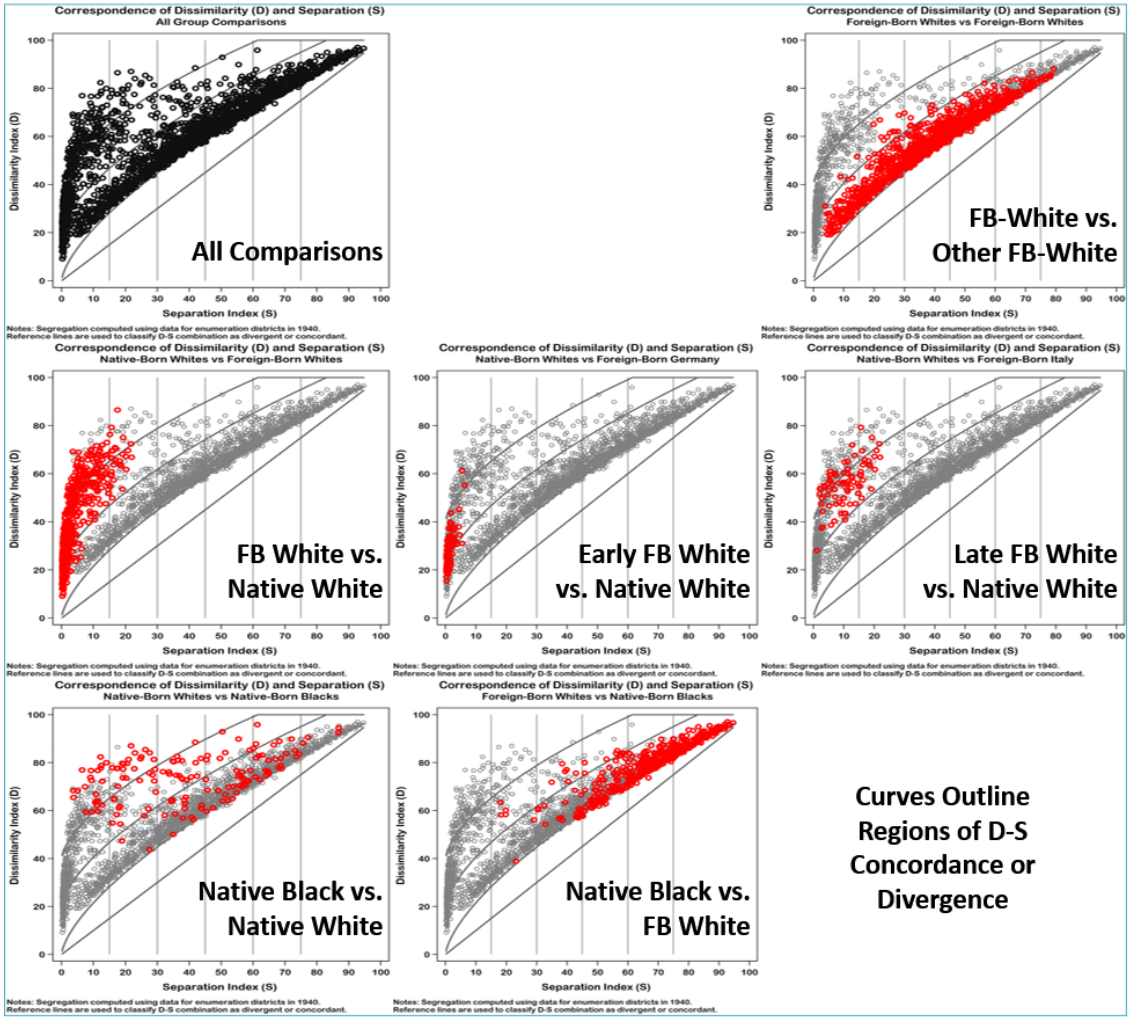


Notes: Standard S = 19.2 = (Y_1 - Y_2) = (99.0 - 79.8) for $y_i = p_i$ based on area population.
Dashed lines denote group means (thick) & medians (thin). (S_{P50} = 12.4, D = 77.3, P = 98.8.)

Table 1. Average Segregation Index Scores for Comparisons of Selected Immigrant Groups with Native-Born Whites, Other Immigrant Groups, and Native-Born Blacks

	Group vs. Native-Born White			Group vs. Other Foreign-Born White			Group vs. Native-Born Black		
Groups	D	S	N	D	S	N	D	S	N
Canada & UK	22.1	1.2	110	50.4	32.1	388	80.5	66.5	89
Germany	28.1	1.4	100	49.7	31.9	366	80.3	68.3	82
Ireland	35.4	2.1	37	54.0	35.2	193	79.4	68.4	31
Sweden	35.6	2.5	29	49.5	30.8	142	82.4	72.3	22
Austria	46.4	3.4	36	55.5	37.1	210	80.2	69.3	31
Czechoslovakia	59.8	7.3	24	63.8	47.1	143	82.8	73.5	18
Poland	57.3	8.1	59	62.8	46.0	288	80.0	70.0	48
Italy	55.4	10.5	83	63.2	44.6	353	74.9	59.5	67
Native-Born Black	73.5	38.7	152	79.4	67.0	415	---	---	---

Figure 3. D-S Concordance and Discordance by Type of Comparison



References

Fossett, Mark. 2017. *New Methods for Measuring and Analyzing Segregation*. New York: Springer.

Ruggles, S., K. Genadek, R. Goeken, J. Grover, and M. Sobek. Integrated Public Use Microdata Series: Version 6.0 [Machine-readable database]. Minneapolis: University of Minnesota, 2015. (1940 IPUMS 100% Sample, Restricted File.)