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ABSTRACT

This study attempts to measure the degree of assimilation exhibited by various immigrant groups, as indicated by their residential patterns. Ecological models of assimilation hold that immigrants are highly segregated from the majority population upon arrival, but that segregation declines with time in a process of residential assimilation. The general residential segregation of 13 ethnic groups, which vary in terms of immigrant proportion, was analyzed in Los Angeles (California) and San Diego (California). A more detailed analysis of ethnic segregation by year of immigration and citizenship status was performed for Los Angeles. Both analyses used metropolitan census tract data from the 1980 census. Results partially support the general models of residential assimilation. However, there was not a strict association between recency of immigration and the degree of segregation exhibited by the group. Immigrant assimilation occurs within an ethnic context. Further immigration to the United States is not likely to create immigrant ghettos or a residentially distinct underclass, because group ethnic identity appears to far outweigh immigrant status in determining segregation patterns. Statistical data are included on four tables and three graphs. A list of 56 references and a 25-item bibliography of related titles on the impact of immigration in California are also included. (FMW)

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FOREWORD

Issues concerning the level and composition of immigration to the United States have assumed prominent positions on the agendas of many policymakers. Perhaps nowhere are immigration's effects more keenly felt than in California, where one-quarter of all foreign-born persons in the United States currently reside.

This Policy Discussion Paper series is aimed at improving the quality of the policy-making process through a broad distribution of research findings on the consequences of immigration to California. These dissemination activities are part of The Urban Institute's larger project, Study of the Impacts of Immigration in California, funded by the Weingart Foundation, the Atlantic Richfield Foundation, the Ahmanson Foundation, and the Times Mirror Foundation. Important policy issues being addressed include (a) economic and fiscal issues associated with immigration, (b) the character and tempo of assimilation processes, and (c) the impact on California of proposals for immigration reform. All major immigrant groups to California—not just Mexicans—are being included, as are the comparative effects in northern as well as in southern California.

The Urban Institute's objective is to make a positive contribution to the policy process. It is committed to getting its work into the hands of people who can use it and rely upon it to make judgments of their own on future policy directions. Related titles are listed at the end of this paper.

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THE SEGREGATION AND RESIDENTIAL ASSIMILATION OF IMMIGRANTS

Executive Summary

The substantial upturn in the flow of immigrants into the United States has rekindled interest in the process of adaptation and assimilation of the foreign born. Expectations and assumptions about the process of assimilation have made their way into debate over immigration policy.

This paper examines the residential patterns of immigrant groups as one window into their assimilation into American society. Conventional models hold that immigrants are highly segregated upon arrival, but that with time segregation declines in a process of residential assimilation. First, we analyze the general residential segregation of thirteen ethnic groups, which vary in terms of immigrant proportion, in Los Angeles and San Diego. We also carry out a more detailed analysis of ethnic segregation by year of immigration and citizenship status in Los Angeles. Both of these analyses use metropolitan census tract data from the 1980 census.

Our results are partially supportive of general models of assimilation and its residential manifestation. We do not find a strict association between recency of immigration and the degree of segregation exhibited by a group. Elements of our work suggest ways in which those models need to be revised. Immigrant assimilation operates distinctly within an ethnic context. As such, further immigration to the United States is no more likely to produce itself residential separation, except for that attributable to ethnic origin.

INTRODUCTION

The substantial upturn in the flow of immigrants into the United States has rekindled interest in the process of adaptation and assimilation of the foreign born. The continuing debate over immigration has highlighted the issues of the adjustment of new minority groups to U.S. society, the potential competition among those groups, the absorption of them into the local urban socioeconomic structure, and the parallels that exist (if any) between the present wave of immigration and previous waves. Concerns about how immigrants will fare in the United States and assumptions about who comes, why, and how they behave have found direct expression in public policy. For example, the Immigration Reform and Control Act of 1986 uses employers as intermediaries in enforcement of the intentions of the law, while also containing specific provisions against discrimination in employment. The law requires legalizing aliens to learn English and restricts their access to some social support services for a period of time.

In debates about policy regarding assimilation and the treatment of ethnic groups, two points of view generally emerge. On the one hand, the assimilationist perspective sees the eventual complete assimilation of ethnic minorities as desirable, and in some cases inevitable. On the other hand, the pluralist perspective takes issue with the inevitability of the assimilation of minorities into the majority and argues particularly against concerted efforts to induce the minority groups to adopt the cultural patterns of the majority (Greeley, 1974; Novak, 1972). Ambivalence about the relative merits of the assimilationist versus the pluralist perspective is represented in the construction of policy regarding ethnic groups in the United States. In this policy discussion paper we attempt to measure the degree of assimilation

exhibited by various groups, as indicated by their residential patterns. This segregation may be voluntary or involuntary, and it may be related in different ways to the achievements of the group in the labor market at large. Our results may be used to inform the debate about the future course of policy with regard to both immigration and ethnic groups. This ambivalence provokes a "new dilemma" whose alternatives are meritocratic equal treatment for all and the compensation of present members of a group for society's past injustices.

Assimilation itself is a process, and it is multidimensional (Yinger, 1985). It may involve both competition and accommodation, but in the end an increasing similarity to the host society is implied.[1] Gordon (1964) identifies seven "basic subprocesses" or dimensions of assimilation: cultural, structural, marital, identificational, attitude receptional, behavior receptional, and civic. He argues, "Not only is the assimilation process a matter of degree, but, obviously, each of the stages or subprocesses distinguished above may take place in varying degrees" (Gordon, 1964, p. 70). In this framework structural assimilation has primarily a social component, indicated by primary group associations and other group memberships. Marston and van Valey (1979), by contrast, argue that this model omits socioeconomic assimilation--the movement toward similarity between minority and majority in their distributions of education, occupation, and income. In the economic literature assimilation is generally indicated by parity in wages, earning, and other labor market outcomes (see, e.g., Chiswick, 1978; Borjas, 1985;

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[1]Gordon (1964; pp. 60-68) provides a discussion of the definition of assimilation, including how it may be distinguished from the more biological "amalgamation" and the anthropological "acculturation."

Carliner, 1980). Still other aspects of social similarity include language ability, fertility behavior, family patterns, and intermarriage (Duncan and Lieberson, 1959; Neidert and Farley, 1985). [Goodis (1986) provides a review of findings.] Cultural assimilation focuses instead on the adoption (or convergence) of host-newcomer identity, values, etc.

Even with a considerable amount of convergence in the structural indicators of assimilation, ethnic pluralism may persist. Such pluralism is marked by the groups' psychological sense of identity and its separation with respect to primary group relations (Gordon, 1981, p. 181). Of course, assimilation may proceed at different rates according to different indicators for various groups. While a substantial cultural difference between the immigrant population and its host is taken by definition, models of assimilation generally presume a coincident socioeconomic disadvantage as well, and assimilation is therefore seen as improvement (Timms, 1971). Ethnic groups, even though not fully assimilated structurally, may exhibit appreciably higher levels of socioeconomic achievement than the national population (Sowell, 1981, p. 5).

The process of assimilation has a distinct residential component, with the residential isolation of groups at a point in time and their geographic relocation over time of primary concern. Migration status—indexed by birthplace of individual (Timms, 1971)—is also seen as a basic element of urban differentiation, particularly in the writings of the social area analysis school. Viewing residential patterns as a window on social relations has a long history and ample justification within the ecological tradition. Park (1952) argued that social distances among groups were manifest in the physical (residential) distances. One line of research has followed in that

vein (Lieberson, 1963; Massey and Mullan, 1984). More specifically, assimilation of race and nationality groups into the host society is expected to be accompanied by (and is even indexed by) residential intermingling (Duncan and Lieberson, 1959; Lieberson, 1961).[2] Hawley (1944) went so far as to say that residential dispersion would produce assimilation. Most often, residential assimilation and socioeconomic assimilation are taken to be concomitant.

Occasionally the residential separation of the minority from the majority is analytically distinguished from the congregation of ethnic groups themselves (Massey, 1981). In the present work we take a comprehensive approach and analyze both of these elements. Following the discussion of our results, we will return to this issue and offer some thoughts about the analysis of the general pattern of residential differentiation along the lines of ethnicity and immigrant status.

The next section of this paper turns to a review of some previous analyses of segregation, with attention to a broad spectrum of groups. We then discuss in more detail the model of residential assimilation and provide a critique for the present analysis. The fourth section of the paper describes our data and methods. The fifth section presents our results regarding segregation and our tests of models of residential assimilation. The final section of the paper offers some conclusions.

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[2]Park's early observations of urban ecological structure took note of the existence of immigrant colonies and racial ghettoes. At one point he argued that segregation "on the basis of language and culture" took precedence over race (Park, 1952, p. 170).

THE SEGREGATION OF ETHNIC GROUPS

The level of segregation experienced by a group is cited frequently as an indicator for urban public policy (Farley and Wilger, 1987; Coleman, Kelly, and Moore, 1976). Differential economic resources, preferences, discrimination, and other social processes all contribute to segregation. Yet it has been found that, at least in the case of black-white segregation, substantial unevenness remains even after controlling for socioeconomic status (Farley, 1977). Moreover, most minority groups express no desire for isolation. More recently, and equally important from the point of view of policy, segregation has been viewed as an input into other processes, with a concern for the consequences of segregation for lifetime opportunity (Wilson, 1987). Still other writings identify the benefits of segregation for the minority group in that the concentration provides an enclave, which in turn provides economic opportunity and social support systems (Wilson and Portes, 1980; Sanders and Nee, 1987).[3] Whether segregation is seen in negative or positive terms and although its causes may be several, the degree of segregation indicates the relative lack of assimilation into the wider society.

The literature on residential segregation is voluminous. For a review of substantive results see Massey (1985). Recent years have been marked by a debate over the proper methodology for measuring segregation. For a review of

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[3]One alternative view to the ecological model(s) is that of the ethnic enclave approach, where it is argued that the geographic concentration of immigrants benefits members of the minority group in that it provides an avenue for significant returns on human capital in a local primary labor market. Sanders and Nee (1987, p. 746) write, "What renders the enclave economy hypothesis a critical challenge to the ecological hypothesis of the assimilation school is the proposition that, despite the social isolation of the enclave, there is no cost to segregation."

these issues see White (1986). Our orientation here is toward segregation of "ethnic" groups, with special attention to immigrants and their residential assimilation. In the sociological literature the term "ethnic" generally connotes a group which shares a cultural heritage. Many writings on the subject avoid an explicit treatment of definitions (Lieberson, 1963; Sowell, 1981). Gordon (1964) identifies an ethnic group as those who share a sense of peoplehood, usually involving a common element of race, religion, and national origin. Glazer (1983) emphasizes group membership based on birth, with a shared cultural heritage. This paper will refer to several indicators of ethnic status which are solicited in the decennial census: race, Spanish origin, nativity, and ancestry.[4] Our analysis will use only the first three. To be sure, the development and usage of ethnic categories is fraught with difficulties and is politically sensitive; for a discussion of these measurement issues with respect to the census, see Peterson (1987).

Each individual is classified according to the measures above and so, technically, each measure constitutes a distinct dimension. Treatment of ethnicity in 1980 differs from prior censuses in several respects. The question on Spanish origin was new, and Hispanics may be of any race. (Many

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[4]An innovation in the 1980 census classification is the "ancestry" classification, where each individual was asked to respond to the open-ended question, "What is this person's ancestry?" Although all groups in the population are covered, census tabulations use this question to identify individuals of traditional European stock in the United States. The introduction of ancestry for individuals was accompanied by the deletion of parental nativity information, so that as of 1980 it is no longer possible to identify the second generation--that is, native-born children of foreign-born parentage. Moreover, since "ancestry" was an open-ended response and self identified, the individuals' own preference ordering and cultural interpretations are reflected in the tabulations. There has been limited amount of research into the pattern of ancestral identification in the 1980 census; see Lieberson and Waters (1985) for an illustration of the use of ancestry data in the study of ethnic intermarriage.

Hispanics elected the "other" category on the 1980 form; no editing of this was performed whereas in 1970 many Hispanics were reclassified as "white". Many Puerto Ricans, as well as some other Hispanic groups, identify as "black".) Blacks are identified by race and several distinct racial categories exist for Asians. Country and U.S. state of birth were asked of individuals. The foreign born were further requested to supply year of immigration.

If not the majority, certainly a very large fraction of the analysis of residential segregation has been directed toward black-white residential patterns, a phenomenon driven partly by the public policy concerns of the 1960s and 1970s. One of the earliest studies with substantial empirical results, Duncan and Duncan (1957), documented the residential unevenness of blacks and whites and the process of neighborhood succession in Chicago using data from 1940 and 1950. Taeuber and Taeuber (1964) provide a benchmark study examining residential segregation of blacks and whites, calculated on the basis of city blocks, for many major U.S. cities. Their work demonstrated unequivocably the fact that blacks and whites rarely shared neighborhoods in these major cities. Their analysis also suggested that these patterns were not attributable solely to differential housing quality or socioeconomic status. Replication and comparison of these block-based estimates for 1970 indicated only about a 5 percent decline in racial residential segregation in 109 large cities during the 1960s (Sorenson et al., 1975).

With the development and expansion of the metropolitan statistical area system, tabulations shifted to census tracts and included central cities and their suburbs.[5] A tract-based analysis of a consistent sample of standard metropolitan statistical areas (SMSAs) for the 1960s concluded that

segregation "remained virtually unchanged" during the decade (van Valey, Roof, and Wilcox, 1977, p. 842), with the conventional index of dissimilarity at about 75. The addition of less-segregated, smaller metropolitan areas to the metropolitan system during the decade pushed the national average down about six points. It was also too early to expect to see a measurable impact of the 1960s civil rights and fair housing efforts in terms of residential patterns. This work has been updated for 1980, and the 1970s do show a contrast with a larger fraction of areas experiencing a decline (85% in the 1970s versus 45% in the 1960s), with reductions more apparent in the South and West regions (Farley and Wilger 1987; White, 1988). It also appears that this decline is not merely an artifact of the revisions in definitions and processing of race in the 1980 census (White, 1988). An analysis of black-white segregation for a limited number of metropolitan areas for the 1940-1980 period suggests that the 1950s were a period of increasing residential differentiation by race, followed by a decade of stability, with an incipient decline in the 1970s.

Analysis of the residential segregation of other groups in the population is more sporadic and, to this author's knowledge, no corresponding complete time series of segregation indices exists. Analysis of the segregation of the foreign-born and foreign-stock population in selected areas for the first half of the twentieth century revealed these groups to be much more segregated from blacks than from native whites (Lieberson, 1963). Pairwise dissimilarity calculations reveal the separation of these groups from one another, with more

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[5]One line of methodological reasoning based on sampling variability also favored the tract-based analysis (Cortese, Falk, and Cohen, 1976). Tracts (averaging about 4,000 persons) were coextensive with metropolitan area boundaries.

recent arrivals--the "new" groups from southern and eastern Europe--more segregated than the "old" groups from northern and western Europe (Lieberson, 1963, pp. 66-67).[6] The level of ethnic group segregation in 1930 was also found to be positively associated with the recency of that group's arrival (Lieberson, 1961). Results for 1980 for selected metropolitan areas confirm that individuals who report Polish and Italian ancestry remain relatively segregated--compared to those of English, French, German, and Irish ancestry--although the level depends somewhat on metropolitan context. All of these groups exhibit much less segregation than blacks (White, 1988).

Despite the existence of an "Asian" racial category in previous censuses, analysis of the segregation of this population is relatively recent. Langberg and Farley (1985) examine the 38 SMSAs that had 10,000 or more Asians enumerated in 1980. Using the traditional index of dissimilarity, they found that Asians were only moderately segregated from non-Hispanic whites, with a value (40) that is close to the level of Hispanic segregation from whites (44). Vietnamese are the most segregated of the several Asian subgroups, and Langberg and Farley suggest that the assimilation process may be proceeding more rapidly for other Asian groups. There is comparatively more information on the segregation of Hispanics, although changing definitions complicate the analysis of this group over time. Massey and Denton (1987) have analyzed the segregation of Anglos (nonblack, non-Hispanic whites), blacks, Hispanics, and Asians for 60 U.S. SMSAs between 1970 and 1980. For 1980 they found Hispanics to be, on average, only 63 percent as segregated as blacks, and Asians only 49

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[6]Lieberson's table also shows relatively little change in the segregation of these two groups themselves between 1930 and 1950 on tract-based calculations. His work also shows a positive (ecological) correlation between recency of arrival and residential segregation in 1930 data (p. 49).

percent as segregated. Both of the latter two groups contained high fractions of recent immigrants, although the rate of the respective minority immigration in the metropolitan area was only weakly related to observed levels of segregation in their SMSA-level ecological analysis (Massey and Denton, 1987, Table 4). Over the 1970s they observed comparable declines in black-Anglo and Asian-Anglo segregation, but less of a decline in Anglo-Hispanic segregation. (In fact, the two SMSAs under study here record increases of about 10 points).

White (1988) combined analyses of segregation by race, Spanish origin, ancestry, and nativity for 1980 in selected SMSAs. Race clearly was dominant, with blacks especially segregated from nonblacks even within the Hispanic population. Other ethnic groups exhibited more modest segregation, with levels for Hispanics overall about half those of blacks. The ranking of the segregation of English, French, German, Irish, Italian, and Polish ancestry groups tended to be in broad parallel with those previous studies of segregation of the foreign-stock population. Segregation of the foreign-born population itself was also modest.[7]

There has been no systematic study of the segregation of individuals by year of immigration, nor by ethnicity and nativity taken together. This paper sets out to do exactly that.

MODELS OF RESIDENTIAL ASSIMILATION

Conventional ecological theory predicts a residential manifestation of the distinctions among groups, reflecting both involuntary segregation

[7]The coresidence of children with their immigrant parents will tend to depress the measured segregation.

(because of such forces as discrimination and status rejection) and voluntary segregation (because of the facilitation of adjustment) in the process (Lieberson, 1963). We now elaborate some views on models of assimilation and then turn to a discussion of its residential manifestation.

There are, of course, several contrasting views of assimilation. Glazer and Moynihan (1963), drawing on a New York case study, argue that each group (Negroes, Puerto Ricans, Jews, Italians, and Irish) maintained its cultural distinctiveness and had established well-defined niches within the occupational structure of New York City.[8] It is more than an empirical matter of whether, and how quickly, groups proceed on these various measures. Much of the literature would suggest that a coincident movement on all is expected when measured at the level of the aggregate. Discussion of assimilation begs the question of the "majority" comparison or standard population (Lieberson, 1963), for considerable diversity exists within the native born. Usually the comparison is of the minority in question with majority whites.

Consider a cohort of immigrants. For simplicity, also assume that these are "new immigrants" to the host population, i.e., there are no members of their group already present.[9] In the arrival stage, the immigrants are highly segregated--established in ethnic enclaves. The conventional, or Chicago School, model holds that these immigrant enclaves are also highly centralized neighborhoods. These neighborhoods, or immigrant zones, also contain

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[8]Swedish immigrants also seem to have occupational preferences or niches in that (for women) occupational choices cannot be adequately predicted from background characteristics alone (Grossman, 1984).

[9]For blacks the model is also applied, where migration out of the South performs the role of immigration and the process then set in motion in northern and western cities.

relatively inferior housing, consistent with the low socioeconomic status of the immigrants. Burgess, for example, describes the zone surrounding the central business district: "The slums are also crowded with overflowing immigrant colonies--the Ghetto, Little Sicily, Greektown, Chinatown--fascinatingly combining old world heritages and American adaptations" (Burgess, 1967, p. 56). In the conventional model, developed to describe the turn-of-the-century industrial metropolises, central location also provided ready access (e.g., by foot or trolley) to industrial entry-level jobs in the metropolitan core. Repeatedly these central locations were identified with the problems of social and economic marginality and disorganization.

Adaptation, economic progress, and assimilation occur within and across generations. As members of the immigrant minority gather language skills, adopt cultural norms of the host population, achieve economic progress, and experience less discrimination by the hosts, they will begin to residentially integrate. The first to move out of the immigrant enclaves are the pioneers, many of whom possess higher socioeconomic traits than the residents of the new neighborhoods they inhabit (Denowitz, 1980). Then additional members of the minority intermingle with the majority population, and segregation declines. A second feature is that of physical distancing from the original ghetto or immigrant enclave, generally in a movement toward the periphery of the metropolis, perhaps through a zone of second (generation) immigrant settlement (Burgess, 1967, p. 56).[10] Cartographic work on the spread of the black ghetto

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[10]Massey and Mullan (1984) use the term spatial assimilation where I have used residential assimilation. I confine spatial assimilation to the territorial aspect of residence, for example, distancing from the ghetto--the subject of their work. Residential assimilation is used for the broader consideration of the entire urban population distribution of interest.

is consistent with this picture (Berry et al., 1976). More recent work on spatial assimilation indicates that blacks have been less successful in translating socioeconomic gains into spatial relocation than have Hispanics (Massey and Mullan, 1984). Resegregation does surface as an issue here, for there is no guarantee that the population reshuffling would lead to a permanently integrated environment. Indeed, the original succession models held that the neighborhoods would come to be dominated--maybe exclusively--by the invading population.

There is evidence that second-generation status and length of residence in the United States are associated with lower levels of segregation and that this pattern holds across most major immigrant groups and has a parallel for blacks (Lieberson, 1980, p. 283). We do observe that there is general socioeconomic improvement of each generation, although the magnitude of gains for individual cohorts is in some dispute (Chiswick, 1978; Borjas, 1985). The second generation shows evidence of increased socioeconomic attainment (Carliner, 1980; Lieberson, 1980; Neidert and Farley, 1985) and by the third generation there is little difference in the returns to schooling (versus English stock) for many ethnic groups, although the magnitude of the improvement still differs by origin (Neidert and Farley, 1985).[11]

The conventional model of residential change within neighborhoods achieves its greatest elaboration in the racial succession paradigm, which traces the way a neighborhood changes from majority (host) to minority (immigrant) composition by classifying the resident population at successive

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[11]Carliner (1980) actually found lower returns in the third generation than in the second. Neidert and Farley (1985) did not, and they had access to more detailed data.

stages, usually with census data. Again, most detailed analyses employing the succession model have been undertaken for white-black change (Duncan and Duncan, 1957; Taeuber and Taeuber, 1964), but extensions have been made to the Hispanic population (Massey, 1983).

Under the succession model, residential assimilation would be recognized by the growth and persistence of stable interracial (polyethnic) neighborhoods. In fact, most analyses employing the paradigm found few such neighborhoods--suggesting that residential assimilation may take a long time, if it occurs at all. Even though the succession model is cast in terms of the eventual turnover of population (and has little explicit place for assimilation), the empirical results of the change in segregation over time (cited above) and the studies employing the succession paradigm are consistent.

If acculturation takes place, then segregation should decline because the social-psychological and economic barriers between groups have lessened. If acculturation results in intermarriage, segregation will necessarily decline.

Up to this point we have assumed that assimilation proceeds in a twofold manner, first with socioeconomic achievement, such that the minority group becomes demographically and economically indistinguishable from the majority, and second with acculturation, such that the norms of maintaining distance between the native majority and the immigrant minority crumble. Arguments under each wing lead to declines in segregation--in the former case because the minority can "move up and out" (Hughes, forthcoming), forsaking the initial ghetto and moving toward the periphery (suburbs), buying into majority neighborhoods as their socioeconomic level would dictate. In the second case segregation is lessened because of the accommodation of the minority to

majority values (and some of the reverse, perhaps) and a decline in resistance. The ecological model observes these two in tandem.

EXPECTATIONS

The ecological model and its revisions lead to testable hypotheses. We proceed at two levels. First, we expect that an ethnic immigrant group should be segregated from the majority (native white) population in accordance with the recency of the groups' arrival. That is, the length of a group's residential experience in the United State should be negatively related to its segregation from the majority. In addition, if immigrant status is a strong ecological determinant, as the classical model proposes, then the residential proximity of the several minority ethnic groups to one another should accord with their respective periods of arrival. In this way we shed light both on the conventional assimilation approach and on the ethnic congregation approach.

Second, we test directly for the comparative influence of ethnicity versus citizenship status and year of immigration in segregation. A simple assimilation model suggests that the naturalized citizens would be less segregated than aliens and that recency of arrival would be positively related to segregation. This pattern should hold both within the specific ethnic group and vis-a-vis the native white majority population. Previous results (White, 1988) suggest that the degree of residential separation varies appreciably by ethnicity and is especially sensitive to racial classification. Our objective here, then, is to assess directly the relative weight of immigrant status and ethnicity in determining residential location and propinquity with the majority. These results will shed light on the proposition that there exist immigrant zones--neighborhoods in which immigrants tend to cluster on the basis of period of arrival.

The present analysis constitutes, to our knowledge, the first attempt to examine the segregation of immigrants by year of entry directly. For this reason we will be particularly interested in testing for the relative influence of entry cohort on level of segregation and consequently measuring the (presumed) decline of segregation with cohort for different ethnic groups. Since our hypothesis is that census race dominates Spanish origin, we anticipate that the latter group will show a stronger relationship than the former.[12]

DATA AND METHODS

We employ census tract data from the Los Angeles--Long Beach SMSA and the San Diego SMSA for 1980. We divide our analysis into two portions (see above), each of which draws on a different tabulation of the distribution of persons across tracts, i.e., urban neighborhoods averaging about 4,000 persons. In the first portion of the analysis we make use of Summary Tape File 3A, which provides the distribution of persons by census tract, by race, and by Spanish origin. We separate the distributions into thirteen mutually exclusive and exhaustive categories that contain the major ethnic groups in these two metropolitan areas. For these groups we calculate the "pairwise" segregation matrix using the index of dissimilarity (D) and the entropy measure (H) for both SMSAs. Most studies of segregation have used only the comparison with the native white population taken as a standard of comparison. The full matrix of segregation indices, however, contains additional information about the segregation of each group from every other.

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[12]These two traits would be expected to dominate a census measure of ancestry, but we do not have a direct measure of immigration status by ancestry in our data.

We summarize the information in the pairwise segregation matrix through the technique of multidimensional scaling (MDS). Intuitively stated, the MDS technique provides a way of representing in two-dimensional space the information contained in the matrix. The technique is based on a least-squares algorithm which takes into account the 78 unique values. The procedure we employ determines two linear functions which predict the location of the observation (group) in normalized two-dimensional space. More details about multidimensional scaling are given in Kruskal and Wish (1978) and Kruskal (1976). Plots of the fitted values for each of the thirteen groups across the two dimensions will be presented and discussed.

After representing the data in this way, we attempt to predict the level of segregation of each of the twelve non-Anglo groups from Anglos in a simple regression model. Observations are at the group level, and we include among the regressors the SMSA level of the group's proportion foreign born, its median income, and a third term--the interaction between group foreign born and its median year of immigration.[13]

The second portion of our analysis turns to more detailed tabulations of the population groups, making use of cross classifications by nativity (native, naturalized, alien) and year of immigration (native, 1975-1980, 1970-1974, 1965-1969, 1960-1964, 1950-1959, before 1950) for the Los Angeles SMSA available in Summary Tape File 4A. These direct crosstabulations are only available for five racial categories (white, black, American Indian, Asian, and other race) and for Spanish origin. Detailed crosstabulations of

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[13]The proportion foreign born and the per capita income were obtained from published 1980 census data for California, General Social and Economic Characteristics. The year of immigration information was calculated from published 1980 census tables for the United States, Detailed Characteristics.

type of Spanish origin, or of race by Spanish origin, for these nativity data are not available. Therefore we proceed by looking at within-ethnic-group distributions and making subsequent inferences about the likely meaning for the absent detailed data. It may be easiest to conceptualize these data as two three-way tabulations: ethnicity by tract by citizenship, and ethnicity by tract by year of immigration. We make use of both the index of dissimilarity and the entropy measure. The entropy measure effectively summarizes the segregation by immigrant status within each ethnic group—a central issue.

In a very real sense, these southern California metropolitan areas are contemporary urban ecological laboratories, p' g the role that Chicago and other large eastern cities did for the classical school of urban ecology. Descriptive data in Table confirm that Los Angeles and San Diego are diverse metropolises which have been fed by substantial internal migration and immigration in the present generation. Whereas about 6 percent of the U.S. population was foreign born in 1980, the immigrant shares in Los Angeles and San Diego were 22.3 percent and 12.7 percent, respectively. These census figures include substantial fractions of the undocumented aliens (Warren and Passel, 1987), although we cannot identify them separately and we cannot realistically adjust these populations for underenumeration. It is unlikely, however, that the omission of the u enumerated undocumented population significantly influences our results, save in that this group is differentially distributed across neighborhoods from the remainder of their own alien ethnic population.

The conventional measure of segregation has been the index of dissimilarity calculated for two groups. It varies between zero and one, and

Table 1

Demographic Composition and Overall Segregation Scores (H), 1980, Los Angeles and San Diego SMSAs

	Los Angeles	San Diego
Population 1980 (Rank)	7,477,422 (2)	1,861,846 (20)
Percentage Change, 1970-1980	6.2	37.1
Percentage Change, 1960-1970	16.6	31.4
Percentage Foreign Born, 1980	22.3	12.7
Immigrants, 1970-1980	948,877	111,399
Overall Segregation, 1980 (H-value)		
5 group	0.3577	0.2009
14 group	0.3274	0.2069

Source: State and Metropolitan Area Data Book, 1988; 1980 Census, General Social and Economic Characteristics, California (immigrants), and the author's calculations.

carries with it the interpretation of the proportion of the minority which would have to shift locations in order for every neighborhood (census tract) to have the same ratio of the two groups. We report calculations on the basis of the index of dissimilarity because it has a longstanding tradition and it is highly correlated with several other improved measures in pairwise comparisons (White, 1986). Other recent writings in the segregation field have made increasing use of "exposure" measures (Lieberson, 1980; Massey and Denton, 1987; Farley and Wilger, 1987). While these asymmetrical measures have their virtues, they are directly affected (even bounded) by composition and so are not best for making policy-oriented comparisons of groups of differing proportions.

One measure which possesses most of the theoretically desirable properties is the entropy or information-based measure (Theil, 1972; White, 1986). Formally, it is written as:

$$H = (H^* - \bar{H})/H^*$$

with $H^* = \Sigma_k \, p_k \log p_k$

and $\bar{H} = \Sigma_i \, N_i/N \, \Sigma_k \, p_{ik} \log p_{ik}$

where i indexes tract,

k indexes group or trait,

H^* is a citywide summation over the K groups, and

$\bar{H}$ is a weighted average of tract-specific entropy.

For several of our analyses we will take k to index citizenship status or year of immigration and repeat the H calculation for each ethnic group. Most important for our analysis here, it has desirable aggregation and decomposition properties, including the possibility of extension to several

groups. Thus it provides for us a means of examining the cohort by ethnicity segregation pattern.

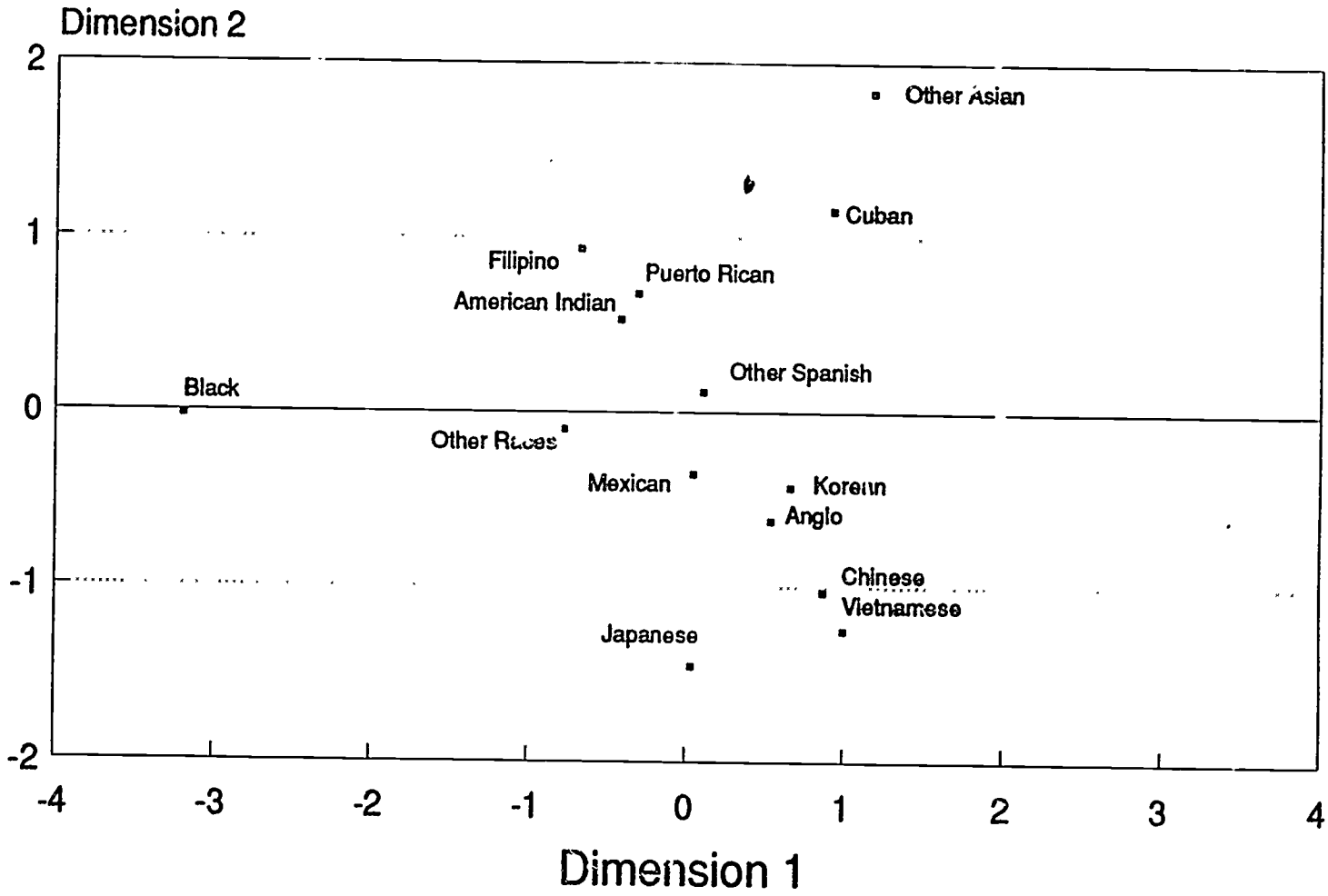
RESULTS

The entropy statistic yields an overall segregation score of .33 in Los Angeles across fourteen ethnic groups. Using this statistic as a measure of association, one can say that the knowledge of census tract improves the prediction of ethnic group by about one-third in Los Angeles. Larger cities generally show greater differentiation and so, too, the value of H for Los Angeles is larger than the value of .21 for San Diego.

We represent the information in the pairwise segregation matrix graphically through the use of multidimensional scaling in Figures 1 and 2. The horizontal axis represents one (primary) axis of differentiation, while the vertical axis represents a second dimension of differentiation. The relative position of each group indicates its position within the residential system and the distance between any two groups is indicative of their residential separation.

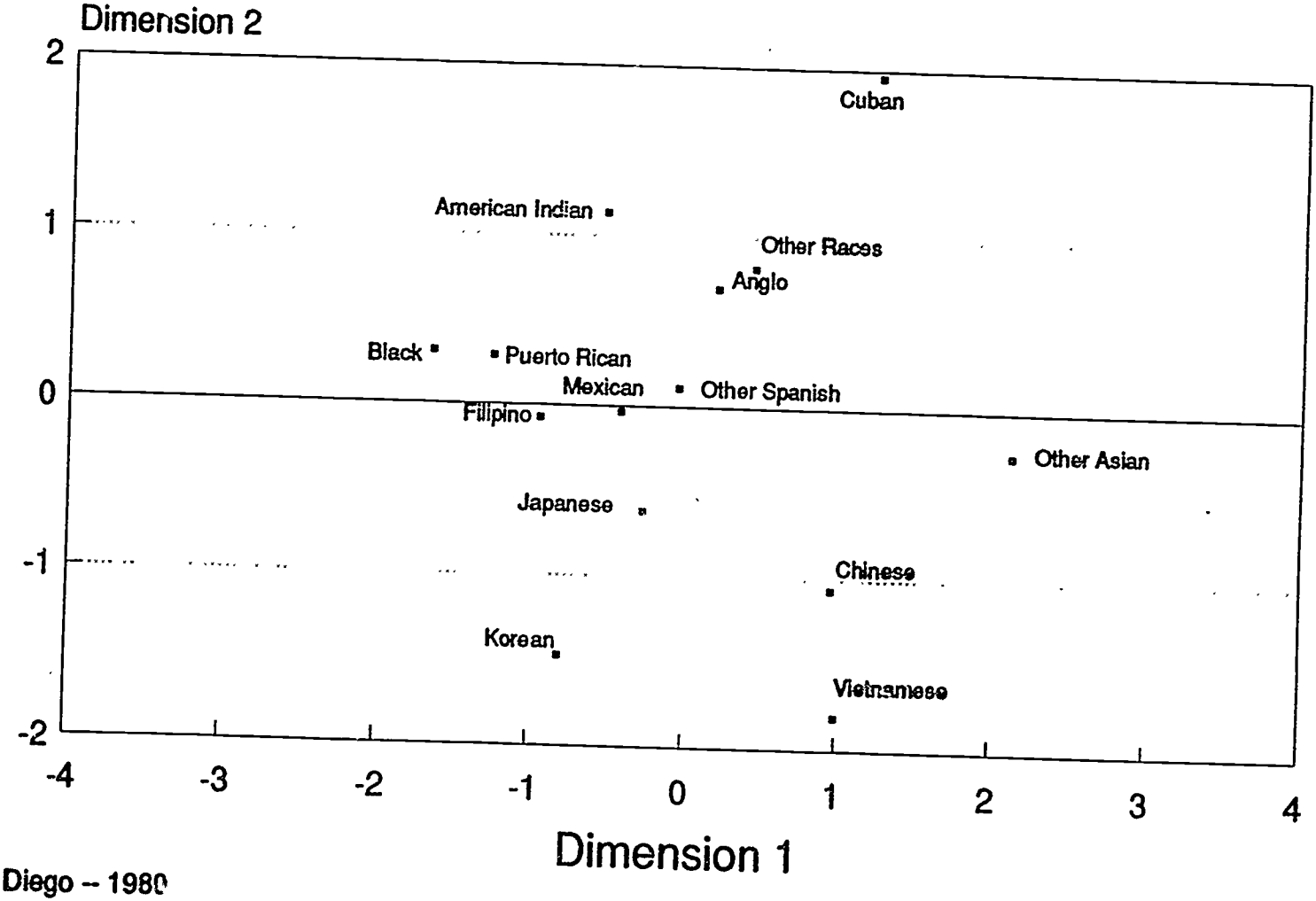
In Los Angeles the horizontal axis serves mostly to differentiate blacks from nonblacks. We find blacks to be far separated from every group. The vertical axis is less clearly identifiable, but we do find that Chinese, Japanese, Koreans, and Vietnamese are clustered with whites in the fourth quadrant. Filipinos and other Asians (in which individuals from India and Pakistan are heavily represented) are grouped elsewhere. The Spanish-origin population is of particular interest here. Mexicans and "other Spanish" (mostly Central Americans and South Americans) are found near the center of the figure, exhibiting in some sense the least overall separation. Those of "other race" (who include many Hispanics) are also relatively central in the

Figure 1
Intergroup Residential Segregation



Los Angeles -- 1980

Figure 2
Intergroup Residential Segregation



San Diego -- 1980

distribution, as are American Indians. Puerto Ricans and particularly Cubans are distinguished from the remainder of the Spanish population. Despite the concerns that Mexicans and Mexican-Americans are not integrated in southern California, their residential distributions are not highly differentiated from whites when comparisons are made to other groups.

Some of the distributions that we observe will be influenced by topography, historical accident of settlement, and the like. It is useful, then, to determine how much of this pattern is replicated in the figure for San Diego. Blacks are still separated, although not nearly so much as in Los Angeles. Mexicans and those of "Other Spanish" identity remain at the center of the distribution, while the same four East Asian groups occupy the same region, although they are not as proximate to one another. Cubans and Other Asians occupy their distinct peripheral positions, indicating that they are relatively segregated from all groups. Overall, these results are broadly consistent with those of Los Angeles.

A simple qualitative examination of the segregation position of each of these groups with reference to the recency of their arrival into the United States would be hard to reconcile with a universal application of the standard assimilation model. Blacks, Cubans, and Japanese--who have longer residence than other groups--are relatively far from the center of the distribution, segregated from whites, and highly segregated from one another.

We can test directly, at the ecological level, the relationship between group recency and degree of segregation using the simple regression model outlined above. We predict segregation from the Anglo population taken as the standard and include the percentage foreign born, year of immigration for the group, and per capita income within the group. This is a distinctly

ecological approach, i.e., we allow group conditions to predict group outcomes. Results are presented in Table 2.

Equations which include observations on blacks, Puerto Ricans and American Indians are not statistically significant overall. These groups contain less than 3 percent foreign born in the state of California, but in this very simple test of an overarching application, the assimilation model does not work well at all.[14] If we limit our universe to the ten groups which have substantial proportions of immigrants, the predictive power of the equations improves, with an adjusted total explained variance of 39 percent in Los Angeles and 49 percent in San Diego.

In Los Angeles we find that the percentage foreign-born is positively and significantly associated with the degree of segregation from Anglos when entered alone. When the equation is augmented with the interaction term and the measure of per capita income, not one of these three coefficients is statistically significant at the 0.10 level. It is the case that groups with later median arrival years are predicted to be slightly more segregated. The 20-year difference between arrival in 1960 and arrival in 1980 translates into increment of 4.7 percentage points in the value of D for a group with 70 percent foreign-born. Higher per capita income is positively (but not significantly) associated with the level of observed segregation from whites.

In San Diego the bivariate association between proportion foreign-born is larger in magnitude (and more significant statistically) than that in Los Angeles. When we introduce the interaction term and the income measure into

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[14]These are outliers with blacks much more segregated than predicted from the model, American Indians much less segregated, and Puerto Ricans slightly less segregated (more in San Diego) than predicted.

Table 2

Regression of Segregation on Group Characteristics[a]

	Los Angeles		San Diego	
	(1)	(2)	(3)	(4)
Percentage Foreign Born	0.00219 (2.42)	0.0026 (1.75)	0.0049 (3.31)	0.0072 (2.79)
Median Year of Arrival (times percentage foreign born times 1,000)		0.0334 (0.34)		-.0207 (1.23)
Per Capita Income (thousands of dollars)		0.0021 (1.38)		-.0021 (0.82)
Constant	0.433 (7.42)	0.256 (1.93)	0.223 (2.35)	0.364 (1.59)
R Square (N=10)	0.35	0.59	0.577	0.663
R Square (N=13)		0.02		0.36

a. Dependent variable is the Index of Dissimilarity versus Anglos (0<D<1). Median year of arrival is calculated from grouped data and from it 1960 is subtracted and the result is multiplied by the percent foreign born in the group. Associated t-statistics are given in parentheses.

the equation we find that the coefficient on the foreign-born percentage increases (remaining statistically significant) and that the others take on a negative sign (not statistically significant). Here, a 20-year difference in a group's year of arrival translates into a reduction of 29 percentage points in the value of D at a level of 70 percent foreign-born.

Table 3 reports several segregation scores for the population classified by citizenship status and ethnic group. Panel A presents a segregation index by citizenship status within each ethnic group. The overall H score indicates the degree of total differentiation by citizenship status within the group. Residential differentiation is particularly high for American Indians, and is quite modest for the Spanish-origin population.[15] The second and third columns demonstrate that aliens are appreciably more segregated from (own group) natives than naturalized citizens.

The first column of Panel B indicates the overall level of segregation measured by the entropy index (H) of each of the groups from native whites. [Dissimilarity statistics are generally higher and are comparable to those obtained by Massey and Denton (1987) for blacks, Asians, and Hispanics.] These statistics demonstrate how much more segregated blacks are from the white population than are other minorities. In fact, American Indians, Asians, and the Spanish-origin population all show similar values, with those classified as Other Races intermediate.

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[15]Our data contain only about 3,000 foreign-born Indians, Eskimos, and Aleuts in Los Angeles (6.6%); we include these distributions for completeness even though the values are very small and questions can be raised about the accuracy of reporting in this category. Although segregation statistics for the Spanish-origin population are downwardly biased because of the overlap with the white population, differences between columns (2) and (3) would only be further biased if the tendency to report race as "white" were different between these two categories.

Table 3

Segregation of Immigrants by Citizenship Status, Los Angeles

A. Within Group

Ethnic Group	Overall H	H vs. Native-born of Own Group	
		Naturalized	Alien
Whites	0.112	0.142	0.325
Blacks	0.134	0.125	0.330
American Indians	0.453	0.599	0.947
Asians	0.103	0.419	0.621
Other Races	0.060	0.195	0.502
Spanish Origin[a]	0.082	0.201	0.494

B. Group vs. Native Whites

Ethnic Group	Overall H	Pairwise Entropy Statistic vs. Native-born Whites		
		Native	Naturalized	Alien
Blacks	0.638	0.641	0.444	0.445
American Indians	0.140	0.134	0.402	0.336
Asians	0.194	0.187	0.170	0.202
Other Races	0.314	0.264	0.239	0.331
Spanish Origin[a]	0.240	0.189	0.181	0.321

a. Spanish-origin population may be of any race.

The final three columns of Table 3 indicate that among Asians, other races, and those of Spanish origin, aliens are somewhat more segregated from native whites than those who are naturalized, who in turn are more segregated than minority natives. This effect is consistent with the assimilation hypothesis. Among blacks natives are more segregated than immigrants, and there is no discernible difference in the level of segregation by citizenship status.

Table 4 and Figure 3 present the parallel analysis for the relationship of ethnic segregation to recency of immigration. Column 1 of Table 4 reports the within-ethnicity residential segregation for each of the six ethnic groups; again we use the H statistic, which has a proportional reduction in error interpretation. Blacks and whites (along with the American Indian, Eskimo, and Aleut population with under 3,000 reporting foreign birth) exhibit the most residential differentiation. Knowledge of year of immigration predicts residential location much less well for Asians, and the distribution is least segregated for those of other race and within the Spanish-origin population.

Drawing on the data in Table 4, Figure 3 portrays the segregation of the immigrants of each of the five major foreign-born populations from native-born whites. We only find a downward sloping curve--consistent with the hypothesis of residential assimilation over time--for whites, other races, and the Hispanic population. (The Hispanic population is distributed mostly across these two racial classifications.) Even so the curves do not decline sharply and even point to greater segregation immigrants those with the longest residential experience in the United States. The figure underscores that ethnic group membership is a strong predictor of the degree of residential segregation from the majority for immigrants of any duration.

Table 4

Segregation of Immigrants by Year of Immigration, Los Angeles

A. Within Group

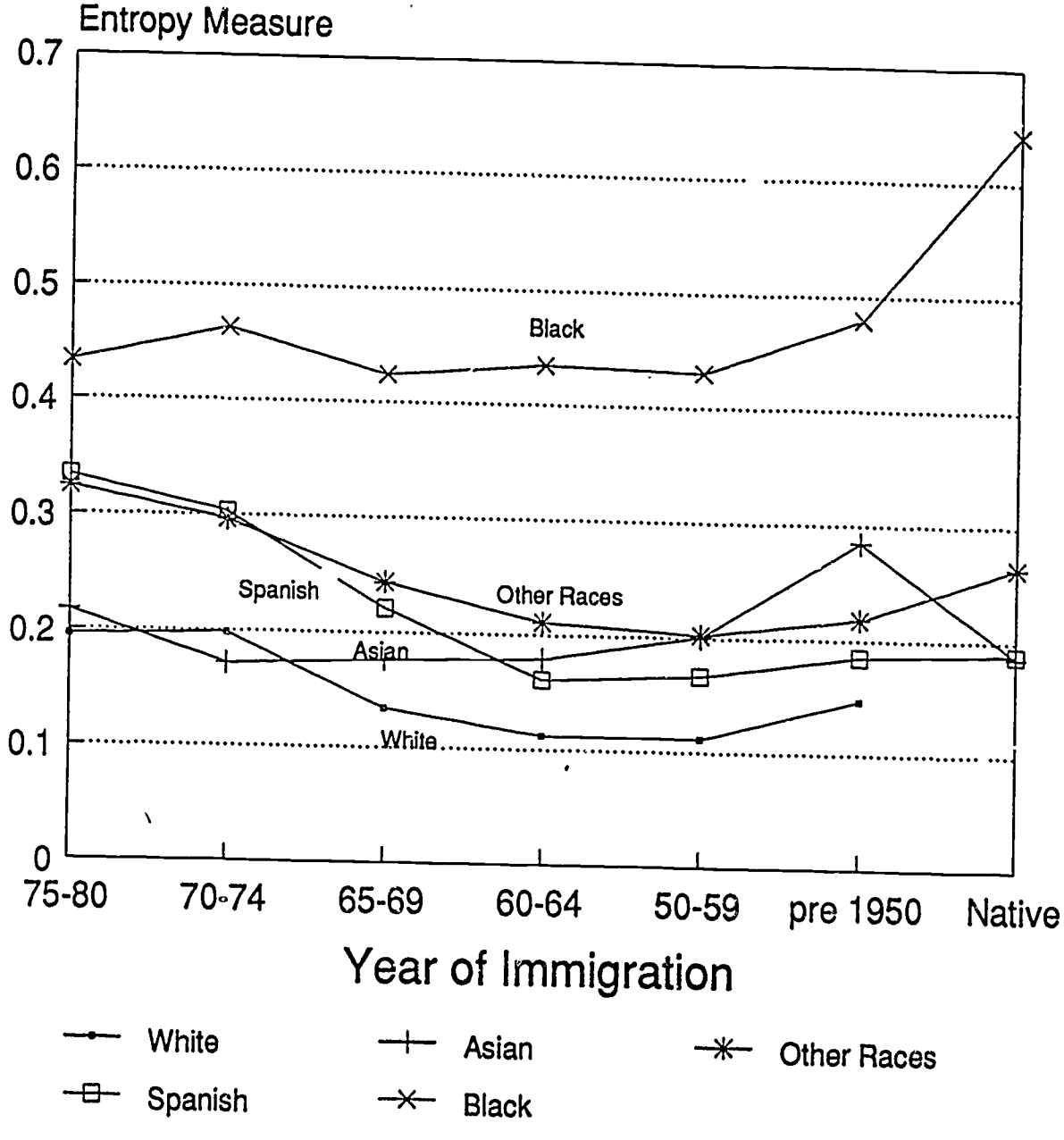
Ethnic Group	Overall H	H. vs. Native-born of Own Group					
		1975-1980	1970-1974	1965-1969	1960-1964	1950 1959	Before 1950
Whites	0.364	0.196	0.199	0.135	0.122	0.111	0.148
Blacks	0.488	0.214	0.375	0.540	0.647	0.761	0.841
American Indians	0.807	0.574	0.859	0.970	0.993	10.00	10.00
Asians	0.238	0.203	0.182	0.205	0.272	0.379	0.512
Other Races	0.159	0.133	0.110	0.099	0.110	0.126	0.159
Spanish Origin[a]	0.188	0.162	0.126	0.102	0.108	0.115	0.151

B. Native Whites

Ethnic Group	Overall H	Pairwise Entropy Statistic vs. Native-born Whites					
		1975-1980	1970-1974	1965-1969	1960-1964	1950 1959	Before 1950
Blacks	0.545	0.433	0.463	0.424	0.435	0.431	0.480
American Indians	0.362	0.430	0.417	0.424	0.398	0.459	0.392
Asians	0.225	0.217	0.172	0.177	0.179	0.201	0.285
Other Races	0.388	0.324	0.296	0.244	0.211	0.203	0.218
Spanish Origin[a]	0.428	0.333	0.303	0.221	0.162	0.167	0.186

a. Spanish-origin population may be of any race.

Figure 3
Segregation from Native Whites



Los Angeles -- 1980

CONCLUSION

The melting pot metaphor has been a powerful and pervasive one for the United States. Glazer and Moynihan (1963) write, "the point about the melting pot . . . is that it did not happen," and other writers have concurred. Yet the United States has remained a country of immigration, and the various ethnic groups have made demonstrable economic and social process. [The case is clearest for Jews, Irish, Italians, Japanese, and Chinese; less so for blacks and Hispanics (Sowell, 1981; Neidert and Farley, 1985).] Whether segregation is voluntary or involuntary, the residential separation of the groups provides an index of their assimilation into the wider society.

In this paper we have examined the segregation of ethnic groups in detail and with several methods. Our results are partially supportive of general models of assimilation and its residential manifestation; other aspects of our work suggest ways in which those models need to be restructured. In a universe of ten ethnic groups with large proportions of immigrants, simple bivariate regression results point to a positive association between the percentage foreign-born and the degree of segregation each exhibits from the Anglo population. Beyond this the association begins to break down. Particularly the model is not general enough to capture the patterns of groups that have large fractions of native-born populations. When we introduce a measure of a group's recency of arrival, which should be strongly and positively associated with level of segregation, we find that it is inconsistently and weakly associated in our results. We also find inconsistent results for group per capita income. In the two-dimensional graphical portrayal of the segregation matrix, it is very difficult to find

any evidence of immigrant clustering or a hierarchical ranking by year of immigration.

Direct examination of the residential distribution of racial and Spanish-origin groups by citizenship status and year of immigration also points to relatively weak influences of immigrant characteristics. While we can find evidence within these groups that segregation declines with length of residence in the United States, this relationship is weak (sometimes inconsistent) and is overshadowed by the effect of ethnic group identity.

We mentioned earlier that the literature subscribes to a distinction between the analysis of assimilation and the analysis of ethnic congregation. We have shown that these are labels for portions of an entire segregation picture--a segregation matrix in the most fundamental sense—and that it is possible to take a more comprehensive view that casts more light on both hypotheses.

While we accept that socioeconomic assimilation takes on a spatial or ecological manifestation, the idealized model cannot be taken uncritically. Rather, immigrant assimilation operates distinctly within an ethnic context and, even so, length of residential experience in the United States exerts only a moderate influence in determining residential location. It is within this dominant pattern of ethnic separation, competition, and ultimate ethnic integration (or lack thereof) that the immigration/resettlement models hold. The assimilationist-pluralist spectrum has generally applied to arguments about the state of the future and policies designed to get there; here we can say that the empirical results point to a broad pattern of immigrant assimilation within a pattern of ethnic pluralism.

It is useful to view these results from another vantage. If immigrant status is far outweighed by group ethnic identity in determining segregation patterns, further immigration to the United States is no more likely to produce immigrant ghettoes or a residentially distinct underclass, except for that separation attributable to ethnic origin.

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