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DOES RACE MATTER IN RESIDENTIAL SEGREGATION? EXPLORING THE PREFERENCES OF WHITE AMERICANS

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Employing an alternative methodology and new data, the authors address the debate concerning the underlying causes of racial residential segregation. Are white Americans avoiding racially mixed neighborhoods because they do not want to live with nonwhites? And if so, is this the case independent of factors with which race is associated, such as crime levels or housing values? An over-the-telephone factorial experiment addresses these issues, measuring variables that shape white Americans' choice of purchasing a home. Based on a national, random-digit-dial survey of 1,663 white Americans, the effects of African American, Asian, and Hispanic neighborhood composition on whites' likelihood of buying a house are explored, as well as the other variables for which race may serve as a proxy. Results indicate that Asian and Hispanic neighborhood composition do not matter to whites. Black neighborhood composition, however, does matter, and matters even more for white Americans with children under age 18. The effect of black composition is net of the variables that whites offer as the primary reasons they do not want to live with blacks. The implications of these findings for segregation trends and for future research are considered.

M any studies of residential segregation ask the same basic question: Does race exert an independent influence on racial residential segregation? Some studies conclude that race is a key independent factor (Charles 2000; Denton and Massey 1988, 1991; Farley 1977; Massey and Denton 1993; St. John and Bates 1990; Taeubur 1965; Zubrinsky and Bobo 1996). Other studies conclude that once the effects of

variables that may be associated with race—such as housing values—are removed, race does not play an independent role (e.g., Clark 1986, 1988, 1989; Frey 1979; Harris 1999; Keating 1994; Taub, Taylor, and Dunham 1984). Still other studies have found interactions between race and other variables (Clark 1991; Crowder 2000).

Despite decades of research using a variety of methods, the debate over whether race has an independent influence on residential segregation remains unsettled. This uncertainty arises from methodological and data limitations. Using national-level data, we address these limitations by simultaneously employing a factorially designed experiment to assess whites' stated preferences and examining whites' stated residential preferences, not just for African American neighbors but also for Hispanics and Asians.

BACKGROUND: PATTERNS AND THE ROLE OF PREFERENCES

Residential segregation remains a characteristic feature of life in the United States (Jargowsky 1997; Massey and Denton 1993; South and Crowder 1998). From 1990 to 2000, metropolitan areas where most minorities live witnessed little if any change in segregation levels with whites (Lewis Mumford Center 2001a). Blacks and whites in metropolitan areas continue to live apart in majority black and majority white neighborhoods. And Asians and Hispanics are more isolated from whites now than in 1990—now living in majority Asian and majority Hispanic neighborhoods (Lewis Mumford Center 2001a).

A review of the literature suggests that two important processes underlie these patterns. Nonwhites have gained the freedom to move into predominantly white neighborhoods, and when they have the means to do so, they do. This was the pattern of white ethnic movement in previous decades, and this is the pattern of African American, Asian, and Hispanic movement today (Alba and Logan 1993; Alba et al. 1999; Logan, Alba, and Leung 1996; Quillian 1999; South and Crowder 1997a, 1997b, 1998). But whites also have the freedom to move, and they appear to move away from minority populations (Crowder 2000; Logan et al. 1996; Quillian 1999).

Why do whites make these choices? Preference explanations for segregation figure prominently in recent work. Clark (1986, 1991) argues that racial segregation results from in-group preferences: People prefer living with those who are racially similar. Using the Schelling (1971) hypothesis—that small differences in in-group preferences across racial groups lead to large differences in segregation levels—Clark (1991) shows that whites' preference for living with other whites is stronger than blacks' preference for living with other blacks. By extension, this difference helps explain the processes of minority migration to whiter neighborhoods and whites' avoidance of significant minority populations.

Nevertheless, even if in-group preferences help explain racial segregation, we do not know why in-group preferences vary by racial group. Thus, research has increasingly focused on out-group preferences. Because of white Americans' overwhelming numerical size and resource base, a core component in understanding residential segregation by race is understanding the preferences of whites (Bobo and Zubrinsky 1996; Clark 1986, 1991; Farley et al 1978, 1994; Massey and Denton 1993; Zubrinsky and Bobo 1996).

Clearly, at a bivariate level, race matters in whites' residential preferences (Bobo and Zubrinsky 1996; Charles 2000; Clark 1986, 1991; Farley et al. 1978, 1994; Massey and Denton 1993, chap. 4; Zubrinsky and Bobo 1996). For example, when Zubrinsky and Bobo (1996) asked white respondents in the Los Angeles area to rate the desirability of actual communities in Los Angeles, they ranked communities with the largest percentage of whites as the most desirable, and those with the largest percentage of nonwhites as the least desirable. They also found, using flash cards of 15 homes in areas with varying percentages of Asians, blacks, or Hispanics, that whites were significantly less likely to want to buy a home in an area as the percentage of minorities increased, regardless of the specific minority group present. However, they found that the rate of decline in the likelihood of buying a home was steepest for homes in communities with a black presence, followed by those in communities with Hispanics and Asians, respectively.

In response to such findings, critics note that the magnitude of these declines by racial group is associated with the relative socioeconomic standing of each racial group, the perceived crime levels, and other factors (Clark 1986, 1992; and see reviews by Galster 1988, 1989). They interpret the steeper decline in the likelihood of buying a home in mixed black-white communities compared with mixed Asian-white communities to support the following claim: Preferences of whites and racial segregation are not due to race, but to other factors associated with race. The debate, then, becomes focused on whether race has an influence, independent of these other factors, on out-group residential preferences. Various approaches have been taken to address this question, but none have been fully adequate.

THE NEED FOR A DIFFERENT METHOD AND NEW DATA

To address our question we need a method that allows us to have, as independent variables, the racial composition of a neighborhood and the variables that may be associated with race.

We could collect behavioral data that allow us to test what actually happens, and then infer people's preferences (see Crowder 2000; Harris 1999). Several problems, however, arise from the use of behavioral data. Many possible neighborhood combinations may not exist, making it difficult to fully control for variables associated with race (St. John and Bates 1990) and leading to colinearity problems. Furthermore, only the end result can be studied in this way. Even if people prefer to live in mixed neighborhoods, they may not end up in such neighborhoods because of racial steering or a lack of available housing. Where people actually live and the values of their homes (Harris 1999) are outcomes of multiple processes for which the researcher does not have data. Data limitations also make it difficult to examine multiple racial groups simultaneously and, perhaps most importantly, to control for key variables for which race may serve as a proxy, such as crime levels.

Other researchers have used attitudinal data to assess neighborhood preferences. The most common approach is to present respondents with cards showing 15 houses from areas of varying racial compositions (Charles 2000; Farley et al. 1978, 1994; Zubrinsky and Bobo 1996). These studies find that race plays a powerful role in people's responses. This flash-card method is limited, however, because researchers do not know why respondents answer as they do. Do respondents evaluate the racial compositions of the neighborhoods shown on the flash cards independently of those factors for which race may serve as a proxy? If so, the racial effect is underestimated. Or do people respond by associating race with crime levels and other factors? If so, the racial effect is overestimated. Also, because the interviews with flash cards are conducted face-to-face, social desirability bias is possible.

To move forward in this debate, then, we need a different method. The method must allow us to test the effects of both racial composition and the variables for which race may serve as a proxy, allow racial composition and the variables for which race may serve as a proxy to vary independently, and allow all of these variables to serve as independent variables.

We accomplish this using a factorial experiment (Rossi and Nock 1982). With our over-the-telephone factorial method, we tell respondents that they are looking for a house and have found one they like. We then tell them about the neighborhood, using a randomly generated combination of characteristics, and ask them if they would buy the house.

Two small-scale studies have used this factorial design (Shlay and DiGregorio 1985; St. John and Bates 1990). Both focused only on the effect of black composition, obtained respondents from one local area, had fewer than 350 respondents, did not include important variables for which race may serve as a proxy, and presented each respondent with multiple vignettes, raising questions about validity and reliability. They also measured the effect of racial composition and other variables on preferences only indirectly—respondents were asked to evaluate the desirability of a neighborhood, not whether they would actually buy a home in that neighborhood.

Our methodology and data have the following advantages over previous analyses: (1) Factors that may influence the likelihood of buying a house that previously have been uncontrolled are now controlled; (2) racial composition is treated as an independent variable; (3) we use a national sample; (4) racial composition includes Asians and Hispanics; (5) race proxy variables are included in the analysis and are free to vary across the range of neighborhood racial composition percentages; and (6) we can assess the effect of neighborhood factors apart from racial steering and respondents' incomplete knowledge of neighborhoods.

METHODS

We conducted the first national-level factorial telephone experiment designed to address the debate concerning neighborhood preferences by race. For each telephone in-

terview, we began the experiment with the following statement:

> Imagine that you are looking for a new house and that you have two school-aged children. You find a house that you like much better than any other house—it has everything that you'd been looking for, it is close to work, and it is within your price range.

This statement controls variables uncontrolled in other research. Respondents are told they are house hunting, that they have two children in school, and that they have found a house more desirable than any other house.[1] Furthermore, this house is both affordable and located conveniently near work. Relying on the status quo bias—that people prefer what they already have—and the fact that this bias can be created merely by telling people what they already have (e.g., Samuelson and Zeckauser 1988; Tversky and Kahneman 1990)—respondents should be, at this point, favorable to buying the house.

We then described the neighborhood context, carefully selecting the main variables that the literature most frequently suggests are underlying causes for racial segregation in the minds of white Americans. The two dominant explanations whites give for not wanting to live with nonwhites are high crime levels and declining property values (Farley, Bianchi, and Colasanto 1979; Farley, Schuman et al. 1978; Farley, Steeh et al. 1994; Harris 1999). These two explanations capture most of the reasons whites give for avoiding nonwhites (Massey and Denton 1993: chap. 4). To these factors, we add the quality of education in the area, a predominant concern for adults with children. We also include a fourth variable—the value of the house relative to others in the neighborhood—to provide respondents with a context for the particular house they are considering. The central importance of these variables in making housing decisions is reflected in the real estate industry. At the popular website, realtor.com, for example, users selecting neighborhoods are asked to describe what type of neighborhood they want in terms of crime level, school quality, and average home price.

For the remainder of the question, the values of each main context variable varied randomly, as indicated by brackets below. The order in which these variables were presented varied randomly as well:

> "Checking on the neighborhood, you find that
> ❏ The public schools are of [low, medium, high] quality,
> ❏ The neighborhood is [5–100%] [Asian, black, Hispanic],
> ❏ Property values are [declining, stable, increasing],
> ❏ The other homes in the neighborhood are of [lower value than, equal value to, higher value than] the home you are considering,
> ❏ And the crime rate is [low, average, high].
>
> How likely or unlikely do you think it is that you would buy this home?" (Responses range from very unlikely [1] to very likely [6].)

Each respondent was read one randomly generated combination. The racial composition varied from 5 percent to 100 percent in intervals of 5 percentage points.[2] Each white respondent was told the neighborhood percentage of only one randomly generated racial group—either Asian, black, or Hispanic. Because the order of the context variables was randomly generated, ordering effects do not influence the results.[3] Our survey was di-

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[1] School quality is an important factor in neighborhood preference. To minimize variability in the interpretation of this question, we fixed the number of children at two, which is the closest whole number to the national mean. Future work should test for the effect of not having children or alternative numbers of children.

[2] We did not include a description of the remaining racial composition of the neighborhood because survey pretests indicated that white respondents assumed the unstated portion to be whites. The biracial assumption is consistent with the racial composition of the zip codes in which the typical white respondent lived.

[3] So, for example, the respondent might hear: "Checking on the neighborhood, you find that property values are stable, the other homes in the neighborhood are of equal value to the home you are considering, the crime rate is low, the neighborhood is 20 percent Asian, and the public schools are of high quality. How likely or unlikely do you think it is that you would buy this home?"

vided into sections. The question about neighborhood composition and the likelihood of buying a house was placed first in the race section, so as to avoid potential bias from previous race questions. Prior questions asked about demographics, religion, political attitudes, and social networks.

This experimental method allows us to test the independent effects of the proxy variables and racial composition on the stated likelihood of buying a particular house, under the randomly generated conditions. It is "unrealistic" in the sense that it assumes people first went to view the house, not knowing anything about the neighborhood. This is not the way people usually go about house-hunting; but it is appropriate for our task as it allows us to get beyond the limitations that occur in real life, such as people simply not being shown neighborhoods, or not considering neighborhoods because they do not personally know anyone there. By telling respondents about the neighborhood *after* they found the house, we are in a better position to know what neighborhood factors shape their stated subsequent decision regarding the purchase of the house. Thus, we are in a better position to address the race question in residential preferences.[4]

DATA

We administered this experimental question as part of a national survey of American attitudes and values to 1,663 randomly selected non-Hispanic white Americans over age 17. Using random-digit dialing, the survey was conducted from October 1999 to April 2000 by the North Texas Survey Research Center. The response rate was 53 percent. Employing methods recommended by Mangione (1995) and others, our data, with proper multivariate controls, appear to be representative of our target population.[5]

We chose to conduct our survey via the telephone after a careful comparison with the costs and benefits of face-to-face interviewing. Using the over-the-telephone factorial method to assess racial attitudes, Sniderman and Piazza (1993) concluded that the method was highly effective. For our purposes, telephone interviewing provided the advantages of a centralized location and close supervision of interviewers, a more standardized interview process, lower cost, more interviews, and computer generated-random neighborhood combinations. Also, telephone surveys typically are subject to less cross-interviewer variance and social desirability effects (Lavrakas 1993).

Via random assignment, nearly equal numbers of white respondents were asked about Asian, Hispanic, and black neighborhood composition. Complete data on all model variables are available for 1,581 respondents, or 95.1 percent of the white re-

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[4] This method has another weakness, which, interestingly, is also one of its strengths. By rendering racial composition independent from factors such as housing values, some respondents may be presented with neighborhood contexts that rarely exist. One consequence is that respondents may be unable to imagine a possibility before them, and thus still react primarily to the racial composition variable. Yet, if race is truly a proxy for other variables, as so many white Americans maintain (Farley et al. 1994), then this method allows them to respond to racial composition separately from responses for the variables for which race serves as a proxy.

[5] We first compared the data to the January 2000 Current Population Survey (U.S. Bureau of the Census 2000). Like most telephone surveys, our survey underrepresents the less educated, males, and older people. To correct for this, we included age, sex, and education in our multivariate analyses (DuMouchel and Duncan 1983; Kish 1965; Winship and Radbill 1994). To address the representativeness of nondemographic variables, we compared those who said "yes" to our initial request for an interview to those who said "no" to our initial request, but who through conversion call-backs later agreed to participate (about 6 percent of the sample). Comparing these two groups on over 50 attitudinal, political, religious, and social network variables, just four statistically significant differences were found, and all disappeared when controlling for age (refusal conversion respondents were more likely to be over 65 than were respondents who agreed to be interviewed upon our initial request). We then compared our respondents to nonrespondents by calling back a sample of nonrespondents and having them complete a shortened version of our survey. Again, once age is controlled, no substantive differences were found. (For a full review of the data's representativeness, see Emerson [2000].)

spondents. The missing data are largely due to respondents who answered "don't know" to the likelihood-of-buying-the-home question. Ancillary analyses with these responses included as a middle category in the dependent variable produced the same substantive results as those presented here.

VARIABLES

Descriptions of the variables and their means and standard deviations are listed in Table 1. We include control variables that mobility theory suggests may impact respondents' likelihood of buying a home. To control for possible interviewer effects, we included race of interviewer variables. We include a control for the racial composition of the respondents' friends, as those with mixed-race networks may be more inclined to move to neighborhoods with a racial mix. We measured racial composition of friends by asking white respondents to think of their circle of friends, defined as people they like to do things with and have conversations with, whom they may see often or keep in contact through calling or writing. With their circle of friends in mind, we asked them how many were white—all, most, about half, few, or none. Finally, given that the actual racial composition of respondents' own area of residence may influence their responses, we controlled for the estimated racial composition of respondents' zip codes of residence in the year 2000.[6]

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[6] We asked respondents their zip code of residence and verified these zip codes using a reverse telephone directory. Because of Institutional Review Board limitations, we were not able to collect residential information at a level smaller than zip codes. The 2000 zip code population data are taken from estimates produced by Easy Analytic Software, Inc. (EASI). Starting with 1990 U.S. census data as the baseline, changes in the population are tracked using the following sources: Postal Office AMS files, Postal Bulletins (the ZIP alert), Current Population Survey, Annual Housing Survey, and direct communication with the U.S. Census Bureau. Using a proprietary formula developed over 25 years, EASI produced zip code-level racial composition estimates from Census Bureau county estimates and Postal Service information. The estimates have been "field tested" by thousands of users, who provide in-

RESULTS

Does neighborhood racial composition matter to whites? Table 2 reports the results of predicting whites' stated likelihood of buying a house, controlling for the race-as-proxy variables and individual and contextual factors. Using cumulative logit models, we test for Asian, Hispanic, and black composition effects.[7]

Model 1 of Table 2 includes whites asked about Asian neighborhood composition. All proxy variables significantly affect whites' stated likelihood of buying a house. Given the comparability of the proxy response scales, the most important proxy variables appear to be crime level and educational quality. This is not surprising: People do not want to live in high crime areas, and given that respondents were told that they have two school-aged children, want to live in areas with high quality schools.

Turning to the key variable of interest, the percentage of Asians in the neighborhood has no effect on whites' assessment of their likelihood of buying a home in that neighborhood. We explored nonlinear relationships as well (not shown), but none were significant. Thus, when the group in a neighborhood is Asian, race does not appear to exert an influence on whites' stated likelihood of buying a home.

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formation on the accuracy of estimates for local areas. EASI uses this information to revise the regression formula and improve the accuracy of the estimates.

[7] Cumulative logit models take the ordered nature of ordinal variables into account and assume that the effects are constant across the comparisons—that is, they assume parallel lines. We tested the null hypotheses that there are parallel lines, and we accepted the null hypothesis for both the Hispanic composition and black composition equations ($p > .10$). The assumption was violated for the Asian equation. Using the diagnostic method recommended by Clogg and Shihadeh (1994), we found that the parallel lines assumption was violated because of two main variables—the direction of change in housing values and the racial composition of friends. The coefficients for both of these variables decline in value across the ordered comparisons. However, the other model variables, including the percentage of Asians in the neighborhood, are consistent across comparisons.

Table 1. Descriptions, Measurements, Unweighted Means, and Standard Deviations for Variables Used in the Analysis: Lilly Survey of American Attitudes and Friendships, 1999 to 2000

Variable Description	Measurement	Mean	S. D.
Likelihood of buying home	1 = very unlikely, 2 = moderately unlikely, 3 = slightly unlikely, 4 = slightly likely, 5 moderately likely, 6 = very likely	3.25	2.05
Racial composition of neighborhood (Asian, Hispanic, or black)	Measured in intervals of 5 percentage points, so that 1 = 5%, 20 = 100%	10.31	5.80
PROXY VARIABLES			
Educational quality	1 = low, 2 = acceptable, 3 = high	2.00	.83
Crime level	1 = low, 2 = average, 3 = high	2.03	.82
Housing values	1 = declining, 2 = stable, 3 = increasing	2.04	.83
Value of house relative to others in the neighborhood	1 = low, 2 = equal to, 3 = high	2.00	.83
CONTROL VARIABLES			
Racial composition of friends	1 = all friends are white, 2 = most, 3 = about half, 4 = few, 5 = none are white	1.86	.84
Formal education	Number of years of schooling	13.89	2.67
Lives a house owned by respondent or immediate family	Yes = 1	.71	.45
Respondent is male	Yes = 1	.40	.49
Respondent has at least one child under age 18	Yes = 1	.37	.48
Married	Yes = 1	.37	.48
Immigrant	Yes = 1	.03	.17
Residence at the Time of the Interview			
Lives in the South	Yes = 1	.33	.47
Lives in the Midwest	Yes = 1	.30	.46
Lives in the Northeast	Yes = 1	.18	.38
Lives in a city (any size)	Yes = 1	.32	.46
Lives in a suburb (around a large city)	Yes = 1	.22	.41
Racial Composition of Respondents Zip Code Area, 2000			
Percent black	Percentage	7.45	12.43
Percent Hispanic	Percentage	6.33	11.83
Percent Asian	Percentage	2.49	4.37
Race of Interviewer			
Black	Yes = 1	.24	.43
Hispanic	Yes = 1	.09	.29
Asian	Yes = 1	.12	.32

When whites are asked about Hispanic racial composition (Model 2), the findings are similar. Crime and educational quality matter, but the percentage of Hispanics in the neighborhood has no significant effect on whites' home purchasing decisions. Although previous research has found that whites wish to avoid concentrations of

Table 2. Unstandardized Coefficients from Cumulative Logit Models Regressing the Likelihood of Buying a House on Neighborhood Racial Composition, Proxy Variables, and Control Variables: White Americans, Lilly Survey of American Attitudes and Friendships, 1999 to 2000

Independent Variable	Model 1 Asian		Model 2 Hispanic		Model 3 Black	
	Coef.	(S.E.)	Coef.	(S.E.)	Coef.	(S.E.)
Racial Composition	−.01	(.01)	.01	(.02)	−.10**	(.02)
Proxy Variables						
Educational quality	.72**	(.10)	.80**	(.11)	.90**	(.11)
Crime level	−.74**	(.10)	−.87**	(.11)	−1.05**	(.11)
Housing values increasing	.31**	(.10)	.32**	(.10)	.37**	(.22)
House value compared with others	.25**	(.10)	−.04	(.10)	.29**	(.10)
Control Variables						
Racial composition of friends	.21*	(.10)	.11	(.10)	.35**	(.10)
Age × 10	−.08	(.06)	.03	(.06)	−.12*	(.06)
Owns house	.15	(.22)	−.52*	(.21)	−.33	(.22)
Lives in city	.27	(.20)	−.59**	(.20)	−.05	(.21)
Lives in suburb	.51*	(.21)	−.33	(.22)	−.09	(.23)
Percent black in zip code area × 10	—		—		−.14*	(.07)
Percent Hispanic in zip code area × 10	—		.20**	(.07)	—	
Percent Asian in zip code area × 10	−.34	(.24)	—		—	
Nagelkerke R²	.246		.266		.356	
Log-likelihood	1,626		1,517		1,478	
Degrees of freedom	20		20		20	
Number of respondents	548		518		530	

Notes: The models in Table 2 also control for region, sex, education, presence of children under age 18, marital status, immigrant status, and race of interviewer. None of these variables approach statistical significance, so for simplicity they are not reported.

Alternative forms and combinations of percent minority in the zip code area were analyzed, but none improved the model fit over simply including the percentage of the group in question. For example, we estimated a series of equations that included separate variables for the percent black, percent Hispanic, and percent Asian simultaneously, as well as equations that included the percent nonwhite for the zip codes. The addition of these variable combinations did not increase the explanatory power of the model, and none of these variables were statistically significant.

*p < .05   **p < .01 (two-tailed tests)

Asians and Hispanics (e.g., Logan et al. 1996; Zubrinsky and Bobo 1996), results from our research design do not support this claim.

We find a different story, however, for black neighborhood composition. Although educational quality, crime, and housing values remain as important predictors, there is a significant negative effect of black com-

position on whites' reported likelihood of buying a house.[8] The black composition effect is striking: The estimated racial composition coefficient is roughly 10 times greater when the out-group is black than when it is

[8] We modeled alternative functional forms of the percentage of minorities in the neighborhood, specifically to test for tipping points, as sug-

Asian or Hispanic ($t > 4.0$, $p < .01$, two-tailed test). After removing the effects of the race proxy variables, we cross-tabulated black composition by the likelihood of buying the house (not shown). About one-quarter of whites said they would be very likely to buy a house when the racial composition was 15 percent black or less. But when the neighborhood exceeded 65 percent black, essentially no whites said they would be very likely to buy the house, even when crime was low, school quality was high, and housing values were increasing. Moreover, the median stated likelihood of buying the house appeared to decline throughout the entire range of racial composition.

Still, it is possible that the effect of black neighborhood composition found in Model 3 of Table 2 is due to the fact that we allowed racial composition to vary from 5 percent to 100 percent. Whites rarely experience the higher percentages, and this fact may produce outlying responses that create the appearance of a linear effect of percent black. To test this possibility, we estimated a cumulative logit model that included only respondents who were asked about neighborhoods that were 35 percent black or less (we did the same for percent Asian and percent Hispanic). The results (not shown) are substantively identical. In fact, the racial composition coefficient in the limited-range model for black composition is actually slightly larger than it is in the complete-range model. These same conclusions were reached for models that included only respondents asked about houses in neighborhoods that were 65 percent black, Asian, or Hispanic or less.

In all three models, either the racial composition of one's friends or the actual percentage of minorities in one's neighborhood significantly influences the likelihood of buying a home. For the model for black composition, both variables shape the likelihood of buying a home, but in opposite directions. That is, the higher the percentage of blacks in the zip code of actual residence, the less likely respondents are to buy the

home, net of other variables. But the higher the percentage of nonwhites in the respondents' circle of friends, the *more* likely they are to buy the home. This contrast between context (current neighborhood racial composition) and contact (social network diversity) is explained by Stein, Post, and Rinden (2000). Although context can heighten competition and fear, contact, as stated by the contact hypothesis (Allport 1958), can increase trust and comfort.

In addition to the additive models, we tested for interactions. We interacted every single independent variable with the hypothetical percentage of nonwhites in the neighborhood on the stated likelihood of buying the house. We entered these terms one at a time, and then all together, into the Asian, black, and Hispanic equations. Only one of these interaction variables was significant—having children under 18 x the hypothetical percent black in the neighborhood.

Although we told respondents to imagine they had two children, there was an additional effect when the respondent actually had children under 18. In such cases, neighborhood importance increased, as it shapes who the respondent's children will interact with, where the children are likely to go to school, and other social- and cultural-capital-building opportunities. The negative effect of an increasing percentage of blacks on the stated likelihood of buying a home is *greater* when whites have children under 18 than when they do not (interaction parameter estimate = .08, S.E. = .03, $p = .01$, two-tailed test, model F change = 6.15, d.f. = 2, 508, $p = .002$).[9]

Given this finding, what is the nature of the effect of black neighborhood composition on whites' assessments of buying a

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[9] We also tested for interactions between the children-under-18 variable and the variables for which race may serve as a proxy. Whites with children under age 18 are not more likely than other whites to be influenced by the crime level, housing values, or even the quality of education (Wald test < .90, $p > .35$). However, as the value of the home compared with others in the neighborhood rises, those with children under 18 are more likely to say they would buy the house than would those without children under 18 (Wald test > 3.9, $p < .05$).

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gested by Grodzins (1958) and found to exist by Crowder (2000). We found no evidence that an alternative functional form was superior to the linear form.

Table 3. Unstandardized Coefficients from Cumulative Logit Models Regressing the Likelihood of Buying a House on Black Composition of Neighborhood and on Proxy and Selected Control Variables: White Americans with and without Children Under Age 18, 1999 to 2000

Independent Variable	Without Children under Age 18		With Children under Age 18	
	Coefficient	S.E.	Coefficient	S.E.
Percent black in neighborhood	$-.06^{**}$	(.02)	$-.18^{**}$	(.03)
Proxy Variables				
Educational quality	$.79^{**}$	(.14)	1.16^{**}	(.19)
Crime level	-1.04^{**}	(.14)	-1.22^{**}	(.20)
Housing values increasing	$.35^{**}$	(.13)	$.39^{*}$	(.18)
House value compared with others	$.14$	(.13)	$.61^{**}$	(.19)
Control Variables				
Racial composition of friends	$.26$	(.14)	$.49^{**}$	(.17)
Percent black in zip code area × 10	$-.05$	(.08)	$-.39^{*}$	(.15)
Nagelkerke R^2	.334		.472	
Log-likelihood	957		495	
Degrees of freedom	19		19	
Number of respondents	339		191	

Note: The models in Table 3 also control for region, sex, education, home-ownership, city and suburban residence, marital status, immigrant status, and race of interviewer. None of these variables approach statistical significance, so for simplicity they are not reported.

$^{*}p < .05$ $^{**}p < .01$ (two-tailed tests)

home? Is the significant effect for percent black found in Model 3 of Table 2 entirely due to whites with children under 18? Or are whites without children under 18 also less likely to buy the house as the hypothetical percentage of blacks in the neighborhood increases?

According to the evidence in Table 3, the latter option is supported. Table 3 presents two cumulative logit models. One looks at the effect of the variables for which race serves as a proxy and black neighborhood composition for whites *without* children under age 18. The second model includes the same variables, but for whites *with* children under age 18.

The first equation shows that the percentage of blacks significantly reduces the likelihood that whites without children under 18 will buy a house. From the second equation, for whites with children under 18, the estimated coefficient for percent black is three times the size of that for whites without children under 18 (−.06 versus −.18). Whites with children and whites without children under 18 are both negatively influenced by

black neighborhood composition, net of other variables, but whites with children under 18 are the most likely to say they would avoid such neighborhoods.

DISCUSSION

Does race have an independent influence in racial residential segregation? Our analysis enables us to address this question independent of proxy variables, although in doing this we assessed only hypothetical preferences. We found clear patterns. Asian or Hispanic neighborhood composition exerts no independent influence on whites' assessed likelihood of buying a home. Black neighborhood composition, however, matters significantly, even after controlling for proxy variables. This finding contradicts some recent work on segregation.

At very low percentages of blacks in the neighborhood and, controlling for other variables that serve as proxies for race, whites state that they are likely to buy the house. In the range of 10 to 15 percent black, whites state that they are neutral about the likeli-

hood of buying the house. Above 15 percent black, whites state that they are unlikely to buy the house. The strength of this stated unlikeliness increases with increases in the percent black. Our findings suggest a low probability of whites moving to neighborhoods with anything but a token black population, even after controlling for the reasons they typically give for avoiding residing with African Americans.

Still, when the effects of the proxy variables are removed, whites appear neutral toward moving into neighborhoods with the same percentage of African Americans as the nation's average (13 percent). However, variability in white preferences for blacks in their neighborhoods (Farley, Steeh et al. 1994) allows small differences in preferences between whites to ultimately lead most whites, even those with a preference for a larger percent black, to avoid neighborhoods with nontoken black populations (Schelling 1971). Thus, as whites with a lower preference for blacks move out of nonhomogeneous neighborhoods, these neighborhoods soon attract more blacks than is preferred by most whites—triggering white flight and white avoidance.

Our findings illuminate current trends in residential patterns by race. Logan et al. (1996) found that whites tend to avoid areas with a significant percent Asian or Hispanic, and others (Charles 2000; Zubrinsky and Bobo 1996) have found that whites prefer a moderate presence of Asian and Hispanic neighbors. Furthermore, segregation between whites and Hispanics increased over the past decade, and segregation increased slightly between whites and Asians in metropolitan areas that were more than 4 percent Asian (Mumford Center Report 2001a). Our research suggests that whites' tendency to avoid areas with nontoken percentages Asian or Hispanic is not due to race per se.

For African Americans, whites avoid living in neighborhoods with nontoken black populations because of the associations they make between the presence of blacks and high crime, low housing values, and low quality education. But if these factors were not the case in actuality or in whites' perceptions, whites would continue to be negatively influenced by black neighborhood composition.

Importantly, this pattern is especially pronounced among families with children under 18. This suggests that insofar as white parents are able to realize their preferences, black children and white children will continue to be segregated from one another. Evidence from actual residential patterns suggests that white parents *are* able to partially realize their preferences. In our own analysis (not shown), although the percent black in the residential zip codes of whites is small for nearly all whites, whites with children under 18 live in zip codes that have 20 percent fewer blacks than do the whites without children under 18, a statistically significant difference. Moreover, black-white segregation for children under 18 actually *increased* by 3 percentage points in the nation's metropolitan areas over the past decade, and it increased by nearly 5 percentage points in metropolitan areas that were more than 10 percent black (Lewis Mumford Center 2001b). The preference of whites for minimal black contact appears to be affecting school segregation as well. Over the past decade, racial segregation in schools has continually increased, returning black-white segregation to early 1970s levels (Orfield 2001).

Our work has limitations, and these limitations suggest directions for new research. This experimental design should be replicated, varying factors that were fixed in our design. For example, to test the proxy effect of educational quality all respondents were told that they had two children. Trials should be run varying the presence and number of children to examine resulting changes in racial composition effects. Future trials should move beyond biracial neighborhoods to test the effects of multiracial neighborhoods of various compositions. Also, future trials should assess the impact on responses of the racial composition of surrounding neighborhoods.

We do not know from our findings whether black neighborhood composition has a negative effect on whites' assessed likelihood of buying a house because race is a master status (Hughes 1945)—a dominant status that indicates high or low status in and of itself—or for other reasons. These other reasons include the possibility that whites cannot or will not divorce race from vari-

ables for which race serves as a proxy. Perhaps people still think "higher crime" even if told lower crime, indicating that the links between black composition and the variables for which race serves as a proxy are so strong that they are nearly impossible to separate (Kirschenman and Neckerman 1991).

The preferences of whites are but one factor shaping residential segregation by race, but they are a powerful factor. Understanding how these preferences arise, including how the experience of segregation itself shapes these preferences, is a necessary task for social scientists. There is a pressing need for researchers to probe more deeply into the minds of white Americans, to discover why whites wish to avoid neighborhoods with nontoken black populations, even when the objections they have given so far are removed. The formation and role of other racial and ethnic groups' preferences must also be studied.

Race shapes residential patterns and processes in U.S. metropolitan areas. We have found that for black-white residential patterns, the effect of race goes far beyond the common reasons given by white Americans for not wanting to live with black Americans.

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