"LITTLE" AND "BIG" PICTURES IN OUR HEADS
RACE, LOCAL CONTEXT, AND INNUMERACY ABOUT RACIAL GROUPS IN THE UNITED STATES

CARA J. WONG

Abstract   Americans do not know what percentage of the nation's residents are whites, blacks, Hispanics, Asians, and American Indians. Using the 2000 General Social Survey, I find that respondents of all races underestimate the percentages of whites and overestimate the percentages of racial/ethnic minority groups and multiracial Americans in the United States; however, they perceive their local communities quite differently. As a first step toward understanding this discrepancy, I test whether individuals' local surroundings serve as a source of information for their pictures of the United States. I examine the relationship between "objective" data and respondents' subjective perceptions of where they live, and compare their respective effects on Americans' perceptions of the nation. Multivariate multilevel analyses show that respondents' perceptions of different racial group sizes in their communities are the strongest predictors of innumeracy at the national level, while "objective" racial context measured at the local level has less of an effect. These findings have important implications for research on racial context, which assumes that census numbers for respondents' locales are good proxies for their perceptions of the size of racial/ethnic groups in their communities. Furthermore, these findings suggest that scholars need to start thinking about why whites and non-whites have similar "big pictures" of the nation, why their "little pictures" vary a great deal, and why the motivations for over- and underestimation may differ by racial/ethnic group.

> The world that we have to deal with politically is out of reach, out of sight, out of mind. . . . Yet man . . . is learning to see with his mind vast portions of the world that he could never see, touch, smell, hear, or remember. Gradually he makes for himself a *trustworthy* picture inside his head of the world beyond his reach (Lippmann 1922, p. 18, emphasis added).

Are the pictures in people's heads indeed so trustworthy? The American public's level of political information and knowledge is often surprisingly low (Neuman 1986; Delli Carpini and Keeter 1996), and ordinary citizens frequently make incorrect inferences based on personal experiences or recent, salient facts or events (Tversky and Kahneman 1974; Ross 1977; Nadeau and Niemi 1995).

Research has begun to look at the extent of Americans' innumeracy about minority groups, and there is evidence that ordinary people do not see an America anything like that depicted by the census: they greatly overestimate the numbers of blacks, Jews, and Hispanics in the country (Highton and Wolfinger 1992; Nadeau et al. 1993; Hochschild 2001; Sigelman and Niemi 2001). While one might be inclined to dismiss these findings as examples of top-of-the-head responses or guesses, some of these studies also provide vivid anecdotes that hint at the confidence with which at least some individuals state their beliefs. For example, in 1995, the *Washington Post* conducted a national survey with a question about the percentage of blacks living in the United States, and a few respondents were asked later by reporters to explain their answers. One woman said, "There are a lot of Blacks around here" (Gladwell 1995, p. 7), and she put the number of African Americans nationwide at somewhere over half the population. When she was told the actual figure was closer to 12 percent, she said she did not believe it. A 62-year-old white man, who also said that blacks made up 40 percent of the population, explained his estimate this way: "I drive a truck. Some of these towns I go by, I may pass five or six school buses and not see a single white child. I just figured we were running behind." These reactions make sense to scholars of public opinion because, as Fiske and Taylor (1984, p. 251) explain, ". . . instead of employing base rate or consensus information logically, people are more influenced by a single, colorful piece of case history evidence." These mental pictures seem to be derived from personally observed experiences, as well as "impersonal" sources (Mutz 1998). While one cannot generalize about the reasons for racial innumeracy from these examples, they do indicate that innumeracy may not simply result from "nonattitudes," but rather from direct observation and local inference.

Why does it matter if people's perceptions do not match reality? Individuals' misperceptions and innumeracy can influence policy preferences and choices. Beliefs about weapon of mass destruction (WMD) affected attitudes about the war in Iraq (Kull 2004), perceptions of the state of the economy can be more important than are government statistics in influencing vote choices (Hetherington 1996), and Americans who overestimated the numbers of poor blacks in the United States were more likely to oppose welfare programs (Gilens 1999).

In this paper, I focus on whether context may be a combination of both perceptions and "objective" features, and test the hypothesis that "little pictures" of nearby surroundings affect individuals' broader generalizations about the "big picture" of the nation as a whole. I compare the perceptions of white, black, and Latino respondents, and focus on whether there are systematic variations in the characteristics of individuals who incorrectly estimate the percentages of racial groups in the country or in the environments in which they live.

Data

The data for the analyses presented here are drawn from the 2000 General Social Survey (GSS).[1] The 2000 GSS contains a module on the multiethnic United States (MEUS) (Smith 2001), and 1,397 respondents were asked the MEUS items. As part of the module, respondents were asked the following question: "Just your best guess—what percentage of the United States population is each group?" The groups list included whites, blacks/African Americans, Hispanics, Asian Americans, and American Indians. Respondents were also asked a similar set of questions about their "local community": "Just your best guess—what percentage of the people who live in your local community is each group?" The groups asked about were the same as for the United States.[2]

Because I wanted to be able to examine whether respondents' surroundings had any effects on their local and national demographic perceptions, I needed data on their "local communities." In response to a special request by the author, the National Opinion Research Center (NORC) provided identifiers for the 100 primary sampling units (PSUs) from which the sample was drawn, and this individual-level dataset was then linked with 2000 Census data for these PSUs.[3] While PSU is not a perfect match for a respondent's "local community," it is the best data currently available. It is also not clear what an ideal geographic match for "local community" would be. No definition of "community" is given to respondents, nor is there a consensus in the academic literature about what "community" means to the American public (Munch and Campbell 1963; Fernandez and Dillman 1979; Allensworth and Rochin 1998). Given the ambiguity about exactly what geographic entity is in the heads of

1. The response rate for the 2000 GSS was 70 percent (AAPOR RR5).
2. Respondents are quite willing to give answers to these factual knowledge questions, with no more than 5 percent of the GSS sample giving a "don't know" or "no answer" response for each group.
3. The 2000 sample was drawn from NORC's 1990 sampling frame of 100 PSUs. Because some of the PSUs are standard metropolitan statistical areas (SMSAs) that changed between 1990 and 2000, the 2000 Census data used are the aggregated data for the counties associated with each PSU, as reported in the GSS. According to NORC, all respondents are drawn from these counties. I am using the PSU as the contextual unit of analysis because it is the *only* geographic unit available for these data; the GSS does not release geographic identifiers for smaller units of analysis, even with special requests and confidentiality agreements. As it turns out, over half of the PSUs analyzed here are composed of only a single county.

respondents as they answer questions about their "local community," I proceed in these analyses to use census data on the smallest geographic unit that the GSS releases to represent "objective" characteristics of a respondent's "local community," while being sensitive to problems in equating them.

Americans' Innumeracy and Factors that Could Affect the "Big Picture"

Figure 1 presents for each group listed the 2000 Census figures at the national level, the mean percentage estimated for the U.S. population by the GSS respondents, and the distribution of people's perceptions of the percentage of the United States composed of that group.[4] The bottom center panel shows that the average percent of whites reported by the GSS respondents was 59 percent, which is well below the census figure of 75 percent. The area under the curve to the left of the census figure shows that about 70 percent of the respondents *underestimated* the percentage of the country's population that is white. This underestimation of the proportion of whites in the United States contrasts with the other panels, each of which shows a pattern of consistent *overestimation* of different racial and ethnic minority groups. For example, the top left panel shows that the percent black perceived by GSS respondents was 31 percent, the census figure was 12 percent, and about 80 percent of the sample overestimated the percent black in the United States. Overall, the picture of the nation's demographics that Americans have in their heads is like a reflection from a carnival mirror: a resemblance is there, but the features are distorted and even reversed.[5]

While respondents describe the country as a whole as having much larger percentages of blacks, Hispanics, Asians, and American Indians than those reported in the census, on average, they paint their communities to look like small microcosms of America. Table 1 shows the mean percentages perceived for the various groups by respondents for their *local* community are closer to the actual breakdown of those groups in their PSUs than are their national perceptions. It seems that Americans' perceptions of their local communities are also more numerate. The sum of individuals' community estimates for

4. Each panel shows a smoothed histogram. The histograms are created from kernel density estimates using a Gaussian kernel. The "rug plot" on the bottom of the histograms presents the actual percentages given.

5. From the dark circles in each panel of figure 1, it is obvious that the mean percentages estimated for the different racial groups across respondents add up to more than 100 percent. Highton and Wolfinger (1992) raised the question of whether innumeracy is simply a result of nonattitudes because estimates often added up to 100 percent or higher. However, it is possible for "true," relatively correct perceptions to add up to more than 100 percent as well. If, hypothetically speaking, a respondent gives "accurate" rough estimates (within 5 percentage points of the real census numbers, rounding up to 80 percent whites, 15 percent blacks, 5 percent Asians, and 5 percent American Indians, for example), her estimates will total more than 100 percent.
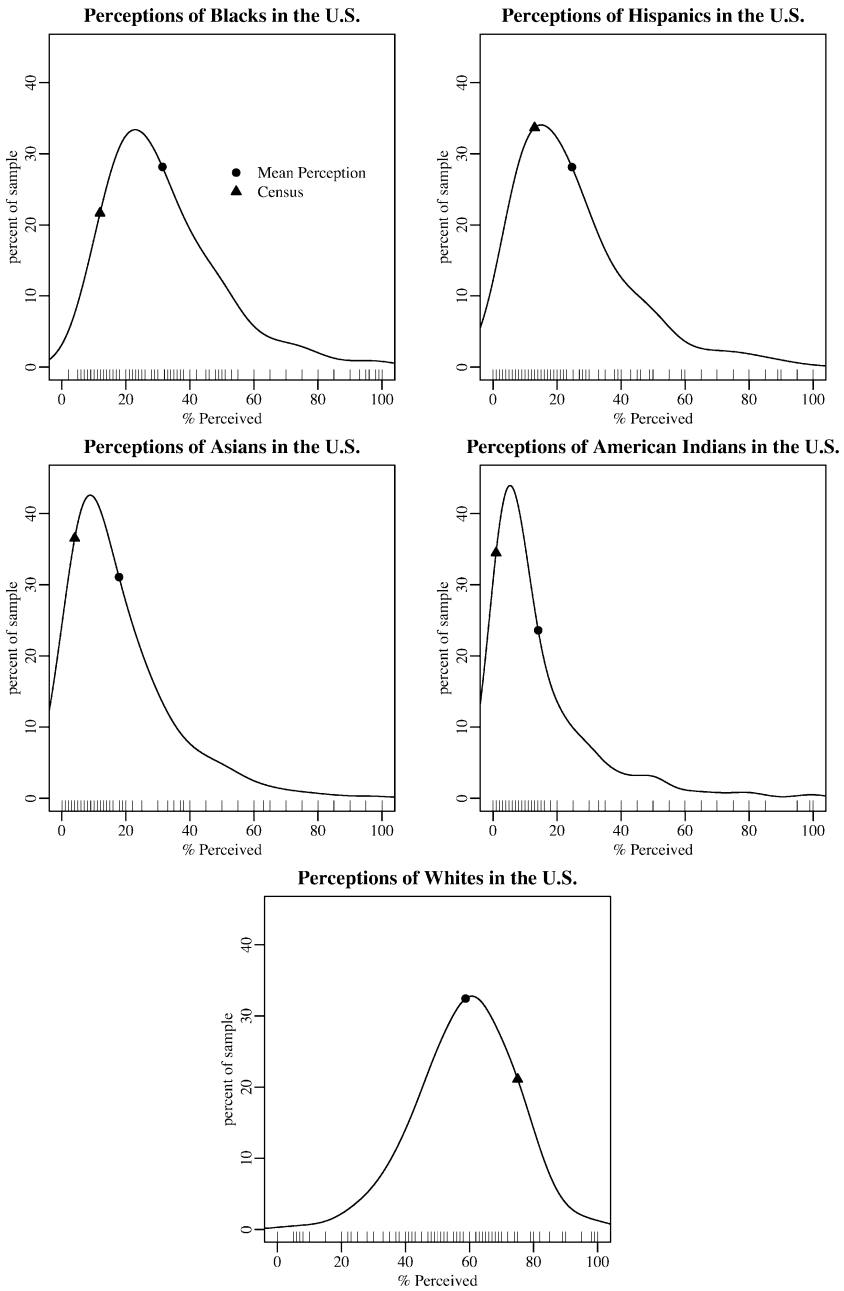
Figure 1. Distribution of perceptions of the racial composition of the United States.

Table 1. Perceptions About Racial Groups in the U.S. Population and in Local Communities

	Objective context	Subjective context
	2000 Census percent of PSU population	Mean percent estimated for local community
White	81	66
Black	13	21
Asian	3	7
American Indian	2	5
Hispanic	9	15

NOTE.—Data from the 2000 U.S. Census and the 2000 GSS ($n = 1397$).

whites, blacks, Asians, and American Indians average to 98 percent, and when Hispanics are added, the mean total rises to 112 percent.

There is no easy way to determine with existing data why Americans seem to be more innumerate when it comes to minority populations nationally than locally. It is possible that people can visualize the people living nearby and may come into contact with them. So, if individuals picture their community of 100 neighbors, they may know that there are about ten African Americans, five Hispanics, and a few Asians living in the neighborhood and be able to make estimates relatively easily. By comparison, it is difficult to visualize a nation of 280 million people and to estimate the racial composition of that nation.[6]

It is also possible that respondents of different races have different views of the racial composition of their locality and nation (Welch et al. 2001). They may have varying perceptions because of racial segregation, dissimilar social networks, and socialization. Therefore, in addition to the hypothesis that *people use their local communities as cues for determining the racial makeup of the nation*, an alternative explanation for potential racial group differences in pictures in people's heads is the following: *psychological factors, like a*

6. There is some evidence for this hypothesis: respondents' perceptions of whites and blacks at the national level are not related (Pearson's $r = 0.07$), while the perceptions of whites and blacks at the "local community" level are highly correlated ($r = -0.69$). An alternative explanation, however, for why the local estimates sum closer to 100 percent than national estimates is that respondents are learning from one question to the next in the survey. Answering questions about the nation may have given respondents practice in answering about percentages. Unfortunately, it is not possible to determine with these data which cognitive mechanism led to the more accurate estimates of groups at the local level, given that the question order was the same for all respondents. What evidence is available presents an inconsistent story. Since the PSUs vary much more in racial diversity than the nation as a whole, one should expect to see greater variance for perceptions of all groups in respondents' communities. However, the standard deviations of the responses to community perceptions of Asians and American Indians are smaller than for national perceptions of those groups, but the ranges of responses about whites and blacks in local communities are greater than those for the nation. The range for Hispanics is about the same across levels.

Table 2. Perceptions About Racial Groups in the U.S. Population by Race

	2000 Census percent of U.S. population	Mean percent estimated for U.S. population		
		White R's	Black R's	Hispanic R's
White	75	59	56	60
Black	12	30	38	40
Asian	4	16	21	30
American Indian	1	13	17	23
More than two races	2	41	48	50
Hispanic	13	23	27	42

Table 3. Perceptions About Racial Groups in Local Communities by Race

	2000 Census percent of Rs' PSU population			Mean percent estimated for local community		
	White R's	Black R's	Hispanic R's	White R's	Black R's	Hispanic R's
White	80	70	71	74	37	43
Black	12	22	12	15	50	27
Asian	3	4	6	6	5	14
American Indian	2	1	1	5	3	6
More than two races	2	2	3	na	na	na
Hispanic	10	10	23	13	13	34

NOTE.—Data from the 2000 GSS.
The sample size for whites, blacks, and Latinos are 967, 171, and 72, respectively.

fear of outgroups that could lead one to inflate an outgroup's numbers, or a desire to boost one's self-esteem via exaggerating the physical presence of one's ingroup, explain people's perceptions of racial groups.

Tables 2 and 3 show the mean percentages for perceptions of the nation and for the respondents' "local communities," broken down by race/ethnicity of respondents; the comparison is with numbers from the census for the same geographic units.[7] Table 2 shows that all subgroups underestimate the percentage of whites and overestimate the percentage of racial minorities in the United States. In other words, regardless of whether one belongs to a majority or minority group, perceptions of the various racial groups in the nation

7. Because there are so few Asian and American Indian respondents in the sample, the analyses in the tables are restricted to white, black, and Hispanic respondents only.

are remarkably similar. In contrast, local perceptions differ markedly by race/ethnicity. Table 3 shows that from their descriptions, whites think they live in primarily white communities, while black and Hispanic respondents are more likely to report living in majority minority communities. These findings seem relatively consistent with the work on continuing residential segregation (Farley 1999; Massey 2000): whites tend to live with other whites, and minorities often live in segregated neighborhoods. However, the 2000 Census data for the PSUs in which the respondents live indicate that, on average, *all* respondents live in majority white places. Again, these differences between perceptions and census numbers may arise because respondents do not equate their local community with their PSU, such that they live in a segregated block within an integrated PSU. Nevertheless, despite perceiving themselves as living in very *different* local communities, whites, blacks, and Hispanics have very *similar*—and also very inaccurate—estimates of the size of different racial groups in the nation.

Respondents of different races may react politically to their misperceptions in varying ways, but the fact that they *all* underestimate the numbers of whites and overestimate the numbers of minority groups indicates that different motivations may be driving whites', blacks', and Hispanics' misperceptions of each other. While whites might see an outgroup like blacks as larger because of a perceived threat from that group, it is unlikely that blacks, for example, would also overestimate the number of blacks for the same reason. African American respondents could inflate their own numbers because they are residing in areas that are racially segregated or for reasons of self-esteem, but it is unlikely that these same reasons would lead whites—who are also affected by segregation and self-esteem desires—to *under*estimate the size of *their* ingroup. In other words, similar patterns across races cannot translate into similar motivations.

Race, Local Context, and Pictures in People's Heads

Because of continuing segregation, there is a correlation between an individual's race and her local context. However, do the circumstances in which an individual lives (the "little picture") affect how she sees the country as a whole (the "big picture")? If so, what aspects of the local context lead to perceptions of the nation? And if not, what other factors might lead to the carnival mirror image of the country? In order to answer these questions, I first need to see if there is a link between "objective" characteristics and subjective perceptions of where a respondent lives. Then I can assess whether objective local context and perceptions of a respondent's local community are related to perceptions of the nation, directly or indirectly. Because the racial similarities and differences in tables 2 and 3 may be artifacts of other correlated factors, like socioeconomic status, I also move to present the results of a set of multivariate models.

THE LITTLE PICTURE

Census numbers for individuals' PSUs and local perceptions may be unrelated to one another and have independent effects on national perceptions; alternatively, they could be highly correlated, with one serving to moderate or mediate the other's effect on perceptions of the nation. In order to examine the effects of both microlevel and macrolevel units, I estimated multilevel models, where the perception of the size of a racial group in the local community of person i in PSU j is denoted as Y_{ij} (Snijders and Bosker 1999; Raudenbush and Bryk 2002).[8] The following equation represents the individual-level part of the model:

$$Y_{ij} = \beta_{0j} + \beta_1(\text{race})_{ij} + \beta_2(\text{education})_{ij} + \beta_3(\text{age})_{ij}$$
$$+ \beta_4(\text{income})_{ij} + \beta_5(\text{gender})_{ij}$$
$$+ \beta_6(\text{residential mobility})_{ij} + \beta_7(\text{immigrant generation})_{ij} + r_{ij},$$

where r_{ij} is the individual-level error term.[9]

At the PSU level, the census-reported percentage of the racial/ethnic group in the PSU in question is added to the model. A regional control for the South is also added, since a great deal of research has addressed the distinctive effect of racial context on whites in the South (Key 1949; Blalock 1967); residents

8. Because a number of respondents are drawn from the same PSU, all observations are not independent. Furthermore, because I am interested in both individuals and their PSUs as units of analysis, multilevel models are appropriate.

9. I included this set of demographic variables and indicators of socioeconomic status as predictors because of their important role in past research explaining who is more or less likely to be knowledgeable about politics. Education and gender have consistently been shown to have effects on political knowledge, with the better educated and male respondents being more knowledgeable. Greater income and age can increase an individual's exposure to different experiences and should provide knowledge about the local community. Another source of information from lived experience may come from residential mobility, on the assumption that respondents who have never lived in more than one city or state could have more knowledge about their own local area (and less knowledge about the country as a whole). A similar hypothesis explains controlling for the length of time respondents have resided in the country; an immigrant will likely have less information about her new country compared to her native-born children or grandchildren.

All independent variables in these models have been recoded to run from 0 to 1. Education is a five-category variable: less than high school, high school, associate or junior college, BA, and Graduate. Age is a five-category variable: 18–29, 30–39, 40–49, 50–59, and 60+. Income is an eight-category variable: <$10k, $10k–$19k, $20k–$29k, $30k–$39k, $40k–$49k, $50k–$59k, $60k–$89k, $90k+. Mobility is a three-category variable: R lives in a different state than when s/he was 16 years old, R lives in the same state but different city, and R lives in the same state and same city. Generation is a four-category variable: R is an immigrant to the United States, R is born in the United States and at least one of his/her parents are immigrants, R and R's parents are born in the United States and at least one of his/her grandparents are immigrants, R and R's parents and grandparents are born in the United States. South combines three regions reported by the GSS: South Atlantic, East South Central, and West South Central. This includes the 11 states of the Confederacy plus Delaware, Kentucky, Maryland, Oklahoma, and West Virginia.

in the South may be more attuned to racially conflictual politics, and therefore, the racial makeup of their locales. Finally, in order to control for the potential effects of the size of the geographic unit—with more populous areas being perhaps harder to encapsulate in a "picture"—the natural log of the size of the PSU is added to the model (Taylor 1998). The effects for each PSU on accuracy are presumed to vary across units, such that

$$\beta_{0j} = \gamma_{00} + \gamma_{01}(\% \text{ group in PSU})_j + \gamma_{02}(\text{South})_j$$
$$+ \gamma_{03}(\text{ln size of PSU})_j + \mu_{0j}$$

while all of the other level-1 coefficients are treated as fixed.[10] The random intercept allows me to control for unmeasured PSU-level heterogeneity in the models, in case, for example, there are characteristics of PSUs other than objective context, region, and locale size that affect the individual-level intercept and respondents' perceptions of their local community.

Table 4 shows that the size of a group in a respondent's PSU affects her estimates of the size of those groups in her local community: the larger the group according to the census, the larger the estimates of whites, blacks, Hispanics, Asians, and American Indians living nearby. In other words, a move from a PSU with no blacks to one that is 50 percent black would be predicted to lead to a 15 percent increase in one's perceptions of the percentage of blacks in one's local community. The effects of objective numbers of whites and blacks on perceptions of these two groups are relatively small, particularly in comparison to the relationships between "objective" and perceived numbers of Hispanics, Asians, and American Indians. A larger "objective" presence of these three minority groups greatly increases the likelihood that respondents will see larger percentages in their local communities. The population size of the PSU affected respondents' views of the percentages of whites and blacks only: in the more populous areas, residents were likely to perceive fewer whites and more blacks. Region did not appear to affect people's demographic perceptions.

The analyses in table 4 indicate that "objective" numbers are the strongest predictors in the models of "subjective" pictures of respondents' local communities. What this means for national politics depends on how Americans' *national* perceptions are affected. For example, how people see the nation could be completely unrelated to their local contexts, objective or perceived, and instead be driven entirely be TV images. Therefore, I now turn to whether local circumstances as defined by the census and people's local perceptions of racial groups affect their perceptions of these same groups at the national level.[11]

---

10. These models were estimated using the nlme package for multilevel analysis written by Jose Pinheiro and Douglas Bates for use in Splus and R. In this package, the random intercepts and slopes are assumed to be normally distributed.
11. At the individual level, a number of factors affected people's views of their local community. Compared to white respondents, blacks on average were estimated to see smaller numbers of

Table 4. Effects of Objective Context on Misperceptions About the Local Community Population

	Estimate of percentage of whites		Estimate of percentage of blacks		Estimate of percentage of Hispanics		Estimate of percentage of Asians		Estimate of percentage of American Indians	
	B	p-value	B	p-value	B	p-value	B	p-value	B	p-value
Intercept	0.491	0.000	0.050	0.166	0.135	0.000	0.032	0.085	0.040	0.014
Percent group in PSU	0.340	0.001	0.304	0.001	0.659	0.000	0.571	0.000	1.280	0.000
South	−0.028	0.219	0.037	0.062	0.002	.853	−0.009	0.226	0.002	0.755
ln(size PSU)	−0.273	0.000	0.184	0.000	−0.010	0.740	0.022	0.299	−0.008	0.571
Black	−0.232	0.000	0.237	0.000	−0.001	0.972	−0.020	0.042	−0.006	0.516
Hispanic	−0.158	0.000	0.062	0.021	0.087	0.000	0.056	0.000	0.007	0.602
Education	0.044	0.089	−0.029	0.178	−0.022	0.234	−0.010	0.427	−0.005	0.627
Age	0.051	0.013	−0.021	0.213	−0.036	0.017	−0.023	0.018	−0.014	0.103
Female	−0.020	0.139	0.033	0.003	0.014	0.152	0.023	0.000	0.015	0.009
Income	0.152	0.000	−0.126	0.000	−0.058	0.001	−0.006	0.573	−0.023	0.015
Generation	0.038	0.145	−0.004	0.857	−0.027	0.155	0.011	0.374	−0.006	0.594
No mobility	−0.026	0.119	0.038	0.007	0.013	0.289	0.003	0.666	0.010	0.159
# of individual units	1001		979		953		943		927	
# of contextual units	100		100		100		100		100	
Log-likelihood	108.73		283.08		413.05		838.19		945.57	
sd(μ_0)	0.064		0.051		0.033		0.015		0.013	

NOTE.—Data from the 2000 GSS. The coefficients reported are from linear mixed-effects models. Only white, black, and Hispanic respondents are included in the analyses.

THE BIG PICTURE

To test these relationships, I ran models similar to those in table 4, where the dependent variables of interest are now the estimated percentages for the different racial groups in the United States. Again, I estimated multilevel models, where the perception of the size of a racial group in the United States of person i in PSU j is denoted as Y_{ij}. The following equation represents the individual-level part of the model:

$$Y_{ij} = \beta_{0j} + \beta_{1j}(\text{perceived percent group in community})_{ij} + \beta_2(\text{race})_{ij}$$
$$+ \beta_3(\text{education})_{ij} + \beta_4(\text{age})_{ij} + \beta_5(\text{income})_{ij} + \beta_6(\text{gender})_{ij}$$
$$+ \beta_7(\text{residential mobility})_{ij} + \beta_8(\text{immigrant generation})_{ij} + r_{ij},$$

where r_{ij} is the individual-level error term.

The perceived percentage of the racial/ethnic group in the respondent's "local community" is the predictor of primary interest in the model. According to Nadeau and Niemi (1995), it is a cue variable for respondents, who can use judgments about their immediate environment as a heuristic or source of information.[12] The same set of demographic variables from the models in table 4 is included here.

At the macrolevel, the census-reported percentage of the racial/ethnic group in the PSU, region dummy, and population measure are added to the model. The effects for each PSU on accuracy are presumed to vary across units, such that

$$\beta_{0j} = \gamma_{00} + \gamma_{01}(\text{percent group in PSU})_j + \gamma_{02}(\text{South})_j$$
$$+ \gamma_{03}(\ln \ n)j + \mu_{0j},$$
$$\beta_{1j} = \gamma_{10} + \gamma_{11}(\text{percent group in PSU})_j + \mu_{1j}.$$

I expect that the effect of the perception of the size of a racial group in a respondent's local community (β_{1j}) may be affected by the "objective"

---

whites and Asians and larger numbers of blacks in their communities; controlling for "objective" PSU context, black respondents' perception of the proportion of African Americans in their local community was 24 percent higher than that of white respondents. Hispanics also perceived fewer whites in their communities, as well as larger percentages of all racial minority groups, than did white respondents. While education had no effect, higher income did lead to larger estimates of whites and smaller estimates of racial minority groups in the respondents' local communities; in other words, the wealthy were more accurate in their perceptions than were the poor. Women were also more likely than men to give more inaccurate estimates of the percentages of blacks, Asians, and American Indians living in their local communities. Finally, other than the fact that a lack of mobility led to perceptions of larger numbers of blacks in one's community, tenure in a locale or the nation did not affect group perceptions.

12. However, in their analyses, Nadeau and Niemi use objective measures of local context, not *perceptions* of this context.

composition of that individual's local context; therefore, an interaction is added to the models (i.e., β_{1j} is estimated as a function of percent group in PSU).[13]

Table 5 shows that the predictor with the largest and most consistent effects on the predictions of the size of all racial and ethnic groups in the United States is the perceived percentage of that group in the respondent's local community. How whites and blacks are perceived, however, differs from how the other racial/ethnic minority groups are viewed. The greater the percentage of whites believed to be living in one's locality, the greater the estimate of the percentage of whites in the nation. In this case, the available cues lead to a larger estimate.[14] The more blacks a respondent thinks live in his local community, the greater his likelihood of giving a larger estimate of the presence of the respective group in American society. In contrast to the effect of *perceptions* of racial context, objective census measures do not explain much about how the national pictures of either whites or blacks vary. Not only are the sizes of the coefficients for objective context much smaller, their effects and the interactions between objective and subjective context measures are indistinguishable from zero.[15] Figure 2 shows predicted probabilities for the national perceptions of African Americans: the different lines represent the predicted national perceptions for a range of different local perceptions, from the minimum of 0 percent to the maximum of 100 percent black, along with lines for quantiles of the responses.[16] While the intercepts vary—indicating that local perceptions affect national perceptions—the slopes for the lines are relatively flat; no matter

13. In each of the models, the correlation between the random intercept and slope was constrained to be zero in the interest of parsimony (and inspections of within-PSU models, diagnostics, and likelihood-ratio tests of nested models did not justify adding that parameter).

14. The coefficient for "local perception of whites" is indistinguishable from zero in this model. However, this interaction model for national perception of whites does not provide an improved fit over a model without the interaction. Nevertheless, log-likelihood ratio tests indicate that the fit is improved for national perceptions of Latinos, Asians, and Native Americans, and therefore, the more elaborate models for all groups are presented in table 5. In a model without an interaction term, the coefficient for "local perception of whites" is 0.154 ($p = 0.000$) and the coefficient for percent white in PSU is -0.041 ($p = 0.453$).

15. Both Nadeau et al. (1993) and Highton and Wolfinger (1992) use the 1991 NES Pilot Study and find that the proportion of blacks and Hispanics in the county in which a respondent lived affected non-Hispanic whites' estimates of the respective groups, with more diverse contexts leading to higher overestimates. While it is unclear from that article and report how many counties are included in the data, given the NES sampling frame, it is likely that clustering and incorrect standard errors may have weakened their inferences (which are based on the sample size of individuals, not contextual units) (Stoker and Bowers 2002). I reran the multilevel models in table 5 for non-Hispanic white respondents only. When the local perceptions variable is excluded, objective context *is* positively related to perceptions of Hispanics and Asians in the United States. However, the effect of objective context is statistically insignificant for perception of blacks, whites, and American Indians.

16. The quantiles are 2.5 percent, 25 percent, 50 percent, 75 percent, and 97.5 percent. The line representing the value for 0 percent blacks perceived in the local community appears twice in this figure: it is both the minimum, as well as the value given by the bottom 2.5 percent of the sample. In creating the predicted scores, the other variables in the model are all held at their mean or mode.

Table 5. Effects of Objective and Subjective Context on Misperceptions about the US Population

	Estimate of percentage of whites		Estimate of percentage of blacks		Estimate of percentage of Hispanics		Estimate of percentage of Asians		Estimate of percentage of American Indians	
	B	p-value	B	p-value	B	p-value	B	p-value	B	p-value
Intercept	0.508	0.000	0.313	0.000	0.167	0.000	0.135	0.000	0.107	0.000
Perception of group	0.106	0.348	0.259	0.000	0.387	0.000	0.663	0.000	0.976	0.000
Percent group in PSU	−0.083	0.457	0.062	0.449	0.179	0.021	0.215	0.375	−0.048	0.858
South	0.014	0.251	−0.012	0.412	−0.006	0.619	−0.006	0.638	−0.001	0.947
ln(size PSU)	0.042	0.179	−0.053	0.073	0.022	0.461	0.007	0.849	0.042	0.090
Black	0.007	0.647	−0.007	0.691	0.017	0.288	0.027	0.066	0.034	0.019
Hispanic	0.042	0.063	0.063	0.008	0.126	0.000	0.083	0.000	0.062	0.005
Education	0.019	0.278	−0.108	0.000	−0.062	0.001	−0.081	0.000	−0.095	0.000
Age	0.042	0.003	−0.025	0.098	−0.010	0.488	0.006	0.662	0.029	0.043
Female	−0.010	0.291	0.060	0.000	0.072	0.000	0.062	0.000	0.037	0.000
Income	−0.032	0.054	0.005	0.780	−0.019	0.274	−0.026	0.099	−0.042	0.009
Generation	−0.012	0.522	0.000	0.990	−0.006	0.749	−0.009	0.602	−0.016	0.366
No mobility	0.014	0.228	0.007	0.589	0.014	0.238	0.016	0.155	0.014	0.218
Perception percent group	0.065	0.664	−0.157	0.538	−0.690	0.011	−1.930	0.029	−3.092	0.058
# of individual units	980		960		926		904		894	
# of contextual units	100		100		100		100		100	
Log-likelihood	468.525		405.231		421.830		493.848		472.025	
sd(μ_0)	0.010		0.015		0.022		0.031		0.019	
sd(μ_1)	0.024		0.126		0.150		0.062		0.435	

NOTE.—Data from the 2000 GSS. The coefficients reported are from linear mixed-effects models. Only white, black, and Hispanic respondents are included in the analyses.
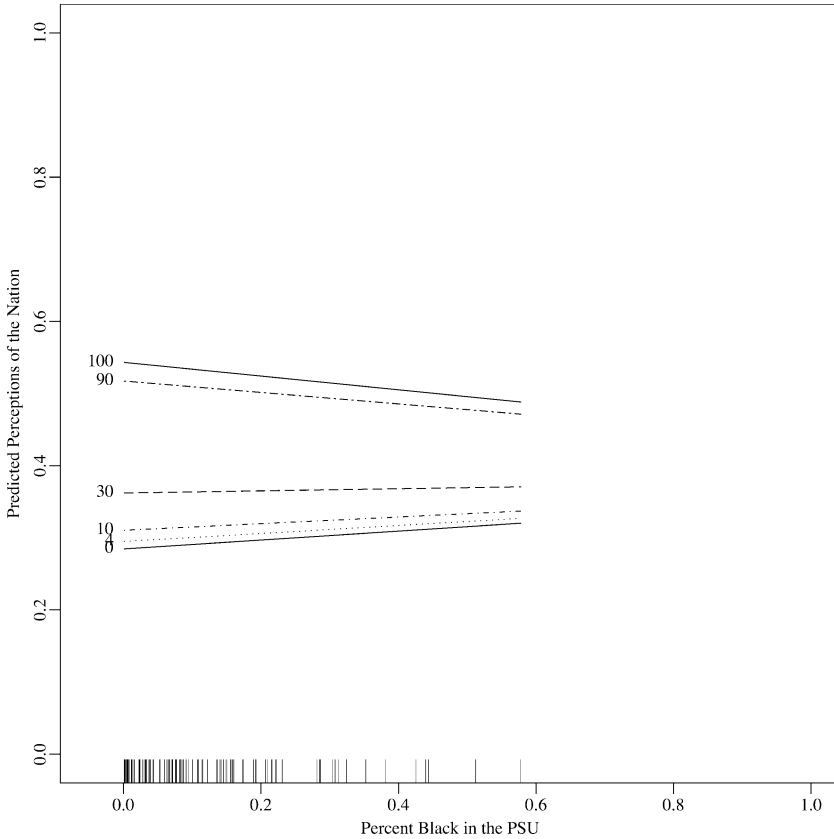
Figure 2. National perceptions of blacks by "objective" and "subjective" local context. Each line represents percentiles of responses about the percentage of blacks in respondents' local, communities, including the minimum, 2.5th, 25th, 50th, 75th, 97.5th, and the maximum. The numbers next to each line represent the value chosen by the respondents. For example, the median response was that respondents lived in a local community that was 10 percent black, and 50 percent of the responses ranged from 4 percent black (the 25th percentile) to 30 percent black (the 75th percentile). Only 2.5 percent of respondents reported that their local community was more than 90 percent black.

what a respondent's *perception* of her local community is, greater numbers of blacks actually living around her do not affect her pictures of the country as a whole. This pattern of predicted probabilities for national perceptions of whites looks very similar (and so the figure is not shown here). These results confirm a model of racial context for perceptions of whites and blacks in the United States with no direct effect of "objective" local context on national perceptions. Local
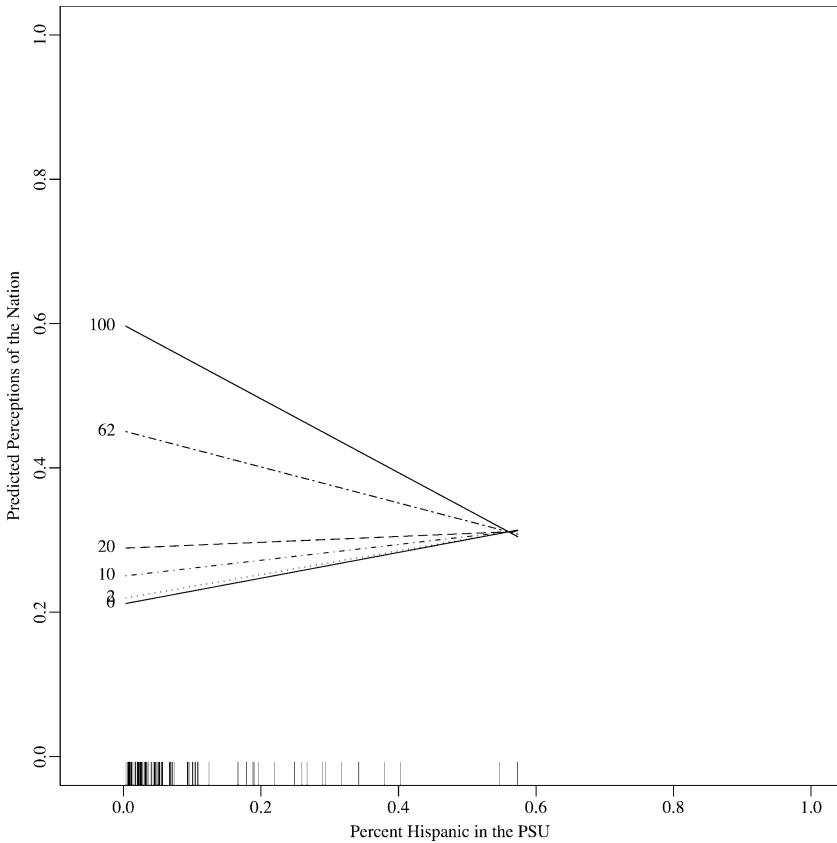
Figure 3. National perceptions of Hispanics by "objective" and "subjective" local context. Each line represents percentiles of responses about the percentage of Hispanics in respondents' local communities, including the minimum and maximum. The numbers next to each line represent the value chosen by the respondents. The median response was that respondents lived in a local community that was 10 percent Hispanic. Fifty percent of the responses ranged from 2 percent Hispanic (the 25th percentile) to 20 percent Hispanic (the 75th percentile).

circumstances affect perceptions of the local community, and these localized perceptions in turn affect perceptions of the nation.

The story is more complicated for perceptions of Latinos, Asians, and Native Americans. While local perceptions clearly affect national perceptions, the interactions between local perceptions and census numbers have an impact as well. Figure 3 shows the case for Hispanics (and while the predicted probabilities for national perceptions of Asians and American Indians are not shown here, the patterns of results are similar): while the lines represent the

entire range of responses, 75 percent of the respondents described their local communities as ranging from 0 to 20 percent Hispanic or less. For these latter respondents, their local perceptions provide strong cues for their national perceptions, but the census numbers of Hispanics who live in their PSU also have a small effect, such that increasing numbers in a PSU are associated with increasing numbers perceived at the national level. For those whose local perceptions ranged from 62 to 100 percent Hispanic, the interaction effect is even stronger: large numbers of Hispanics perceived in one's local community still lead to large overestimates of Latinos at the national level, but as more Hispanics are reported by the census to live in a respondent's PSU, the more reasonable the national estimates become. For example, for the rare person who thinks that her community is 95 percent Hispanic, the model predicts that as more Hispanics actually live in her PSU, the smaller her (mis)perception of the numbers of Hispanics in the United States as a whole would be (albeit she would still be overestimating their size). Therefore, in contrast with how blacks and whites are seen in pictures of the nation, for perceptions of Latinos, Asians, and American Indians as groups in the United States, local objective context has both a direct and indirect effect (via local perceptions).[17]

Among the other macrolevel predictors in the models, neither region nor size of the respondent's PSU has a discernible effect on perceptions of the nation's demographics. At the individual level, the more educated a respondent, the more likely she would be to make a smaller estimate (i.e., a more accurate figure) of the percentage of any minority group. Surprisingly, residential mobility and immigrant generation have no effect; greater exposure to the nation—geographically or temporally—does not appear to provide Americans with better factual information, holding constant the other predictors in the models.[18]

The effects of race that were so prominent in tables 2–4 here are mitigated. When measures of socioeconomic status are added to the equation, for example, the race of the respondent does not have a consistent effect across all the models. Hispanics are more likely than whites to overestimate the percentages of minority groups in the nation, but to have more accurate perceptions of the percentage of whites in the United States ($p < 0.10$). Blacks are more likely than whites to overestimate the size of the Native American population (but the size of the effect is relatively small).[19] These analyses indicate that respondents of different racial groups perceive the nation's demography in relatively similar

17. The relatively large PSU-level variance component for American Indians does indicate that there may be other PSU-level factors that affect national perceptions besides the ones in the model.
18. Gender is also a consistent predictor, with women more likely than men to give overestimates of the size of minority groups in the United States. Income has a statistically significant effect on perceptions of Native Americans in the nation and approaches levels of significance for perceptions of Asians and whites; the wealthier a respondent, the more likely she was to be accurate about the size of minority groups and inaccurate about the percentage of whites in the nation.
19. I reran the models in table 5 for white, black, and Hispanic respondents separately, and the substantive interpretation of the results does not change. I also reran the models in table 5 such that "inaccuracy" (defined as the distance from the census numbers) was the dependent variable. Given

ways, controlling for a number of socioeconomic and demographic character-
istics. The sizes of non-white groups are consistently overestimated, and the
proportion of whites is underestimated. However, what is noteworthy about
these results is that their *meaning* is quite different for whites and non-whites:
whites are underestimating the size of their ingroup and overestimating that
of their outgroups, while blacks and Hispanics are underestimating the size
of one of their outgroups (i.e., whites), overestimating the size of their other
outgroups, and overestimating the size of their ingroup. In other words, the
hypothesis about psychological factors cannot hold across groups.

   While it would be tempting to say that the fact that national pictures in peo-
ple's heads are so similar—regardless of their own race—is simply a reflection
of the power of the images that the media portrays, in that case we would not
find such strong effects of respondents' perceptions of their local community on
their national portrayals.[20] Thus, while race appears to have only small effects
in table 5, more research on the mechanisms behind perceptions by different
groups is needed.

Conclusion

A majority of Americans have inaccurate perceptions of the racial demography
of the country. White, black, and Hispanic respondents all overestimate the

---

the distributions shown in figure 1, I modeled overestimation of minorities and underestimation of
whites. The results are very similar to those presented in table 5, in terms of which factors had an
effect on respondents' overestimates of minority group sizes and underestimates of percentages of
whites.

20. Since "impersonal influence" could provide information as well as lived experience (Hughes
1980; Mutz 1998; Johnson et al. 2002), I also reran the models in table 5 with controls for the
frequency of newspaper readership and television watching. Surprisingly, neither TV exposure nor
newspaper reading has a significant effect on the accuracy of the group estimates (controlling for
all of the same variables as in table 5). However, simple frequency of exposure to newspapers and
the television may be overly blunt measures of the potential effects of media, and I do not want
to downplay its potential power in shaping pictures in people's heads. Because racial proximity
is an important predictor of racial attitudes (Kinder and Mendelberg 1995) and because a white
respondent perceiving blacks in his "local community" does not necessarily mean that he has
contact with African Americans, I also reran the model in table 5 of national perceptions of blacks
for only non-Hispanic white respondents, including measures of whether there were any blacks
living in the respondent's neighborhood and the racial composition of the respondent's workplace.
Both measures are self-reports. White respondents who report having a black neighbor are more
likely to have an accurate estimate of the size of the black population in the United States than
respondents who report having no black neighbors, controlling for the perceptions of the racial
context of their local community (the correlation between having a black neighbor and perceptions
of the local black population is 0.22). However, whites who work in more diverse settings are not
more likely to make accurate estimates of the percentage of blacks living in the nation. Because
a large number of cases are lost with the addition of media usage or racial proximity variables in
these models, I report more parsimonious models here. The effects of the key variables—objective
and perceived context—are the same. These results suggest that future surveys should include
questions about respondents' personal experiences and contexts that include *all* racial groups.

numbers of blacks, Hispanics, Asians, and Native Americans, and they all underestimate the numbers of whites. Much like political information, these estimates become more accurate with higher socioeconomic status, and women have less accurate information than men.

Furthermore, the *perceived* sizes of the racial/ethnic groups in respondents' local communities affect the accuracy of these perceptions at the national level, while the *objective* local contexts play a smaller role. In other words, salience of a group in a locale matters, but often only when it is translated into the minds of individuals. People are clearly generalizing from their perceptions of their immediate surroundings to make inferences about the nation as a whole. On the other hand, the pattern of results for the racial/ethnic group of the observer (i.e., respondent) and the observed cannot be explained easily by the same psychological factors across groups; more research is clearly needed to understand the motivations behind the inaccuracies.

The findings presented here raise important questions for the research on racial threat and racial context, particularly with regard to the relationship between "objective" indicators and individuals' perceptions of the racial breakdown of the local area. One cannot assume that larger numbers of blacks, for example, lead to greater anti-black prejudice among whites, because whites actually *perceive* and feel threatened by the size of their outgroup. When local perceptions are included in the model predicting national perceptions, local census numbers played a much smaller role in determining "the big picture"; would the same hold true if the dependent variable of interest were a racial or political attitude?

As demographers analyze the 2000 Census data, they are finding that not only is the country becoming more diverse, racial and ethnic minorities are distributed unevenly across localities. If the "little pictures" people have of their communities are distorted reflections of reality, these misperceptions may exacerbate feelings of outgroup threat and increase the possibilities for interracial conflict. In order to know what effects these diverse environments have on American society and politics, we need to gain a better understanding of how geographic contexts are translated into the pictures in people's heads of their communities, both local and national.

References

Allensworth, Elaine M., and Refugio I. Rochin. 1998. "Ethnic Transformation in Rural California: Looking Beyond the Immigrant Farmworker." *Rural Sociology* 63(1):26–51.

Bennett, Stephen Earl. 1988. "Know-Nothings Revisited: The Meaning of Political Ignorance Today." *Social Science Quarterly* 69:476–90.

Blalock, Hubert M. 1967. *Towards a Theory of Minority Group Relations*. New York: Wiley.

Delli Carpini, Michael X., and Keeter Scott. 1996. *What Americans Know About Politics and Why it Matters*. New Haven, CT: Yale University Press.

Diamond, Jared. 1994. "Race Without Color." *Discover* 15:82–9.

Farley, Reynolds. 1999. "Racial Issues: Recent Trends in Residential Patterns and Intermarriage." In *Diversity and Its Discontents: Cultural Conflict and Common Ground in Contemporary American Society*, eds. Neil J. Smelser and Jeffrey C. Alexander, pp. 85–128. Princeton, NJ: Princeton University Press.

Fernandez, R. R., and D. A. Dillman. 1979. "The Influence of Community Attachment on Geographic Mobility." *Rural Sociology* 44(2):345–60.

Fiske, Susan T., and Shelley E. Taylor. 1984. *Social Cognition*. New York: Random House.

Frey, William H. 2000. Regional Shifts in America's Voting-Aged Population: What Do They Mean for National Politics?" Population Studies Center Research Report No. 00-459, University of Michigan, Ann Arbor.

Gilens, Martin. 1999. *Why Americans Hate Welfare: Race, Media, and the Politics of Antipoverty Policy*. Chicago, IL: University of Chicago Press.

Giles, Michael W., and Arthur S. Evans. 1985. "External Threat, Perceived Threat, and Group Identity." *Social Science Quarterly* 66:50–66.

Gladwell, Malcolm. 1995. "Fundamental Ignorance About Numbers." *The Washington Post National Weekly Edition*, October 16–22, p. 7.

Glaser, James. 1994. "Back to the Black Belt: Racial Environment and White Racial Attitudes in the South." *Journal of Politics* 56:21–41.

Gould, Stephen Jay. 1994. "The Geometer of Race." *Discover* 15:64–9.

Haney-Lopez, Ian. 1996. *White by Law: The Legal Construction of Race*. New York: New York University Press.

Hetherington, Marc J. 1996. "The Media's Role in Forming Voters' National Economic Evaluations in 1992." *American Journal of Political Science* 40:372–95.

Highton, Benjamin, and Raymond E. Wolfinger. 1992. "Estimating the Size of Minority Groups." 1991 NES Pilot Study Report.

Hochschild, Jennifer L. 2001. *"Where You Stand Depends on What You See: Connections among Values, Perceptions of Fact, and Political Prescriptions."* In *Citizens and Politics: Perspectives from Political Psychology*, ed. James H. Kuklinski. Cambridge University Press.

Hollinger, David A. 1995. *Postethnic America: Beyond Multiculturalism*. New York: Basic Books.

Hughes, Michael. 1980. "The Fruits of Cultivation Analysis." *Public Opinion Quarterly* 44:287–302.

Ignatiev, Noel. 1996. *How the Irish Became White*. New York: Routledge.

Johnson, Jeffrey G., Patricia Cohen, Elizabeth M. Smailes, Stephanie Kasen, and Judith S. Brook. 2002. "Television Viewing and Aggressive Behavior During Adolescence and Adulthood." *Science* 295:2468–71.

Key, V. O. 1949. *Southern Politics in State and Nation*. New York: Knopf.

Kinder, Donald R., Gordon S. Adams, and Paul W. Gronke. 1989. "Economics and Politics in the 1984 American Presidential Election." *American Journal of Political Science* 33:491–515.

Kinder, Donald R., and D. Roderick Kiewiet. 1981. "Sociotropic Politics: The American Case." *British Journal of Political Science* 11:129–61.

Kinder, Donald R., and Tali Mendelberg. 1995. "Cracks in American Apartheid: The Political Impact of Prejudice Among Desegregated Whites." *Journal of Politics* 57:402–24.

Kramer, Gerald H. 1983. "The Ecological Fallacy Revisited: Aggregate- Versus Individual-Level Findings on Economics and Elections, and Sociotropic Voting." *American Political Science Review* 77:92–111.

Kull, Steven. 2004. *"The Separate Realities of Bush and Kerry Supporters"* (The PIPA/Knowledge Networks Poll). College Park, MD: Program on International Policy Attitudes.

Lippmann, Walter. 1922. *Public Opinion*. New York: Free Press.

MacKuen, Michael B., Robert S. Erikson, and James A. Stimson. 1992. "Peasants or Bankers? The American Electorate and the U.S. Economy." *American Political Science Review* 86:597–611.

Massey, Douglas S. 2000. "The Residential Segregation of Blacks, Hispanics, and Asians, 1970–
    1990." In *Immigration and Race: New Challenges for American Democracy*, ed. Gerald D.
    Jaynes, pp. 44–73. New Haven, CT: Yale University Press.
Munch, P. A., and R. B. Campbell. 1963. "Interaction and Collective Identification in a Rural
    Locality." *Rural Sociology* 28:18–34.
Mutz, Diana C. 1998. *Impersonal Influence: How Perceptions of Mass Collectives Affect Political
    Attitudes*. New York: Cambridge University Press.
Nadeau, Richard, and Richard G. Niemi. 1995. "Educated Guesses: The Process of Answering
    Factual Knowledge Questions in Surveys." *Public Opinion Quarterly* 59:323–46.
Nadeau, Richard, Richard G. Niemi, and Levine Jeffrey. 1993. "Innumeracy About Minority
    Populations." *Public Opinion Quarterly* 57:332–47.
Navarro, Mireya. 2003. "Going Beyond Black and White, Hispanics in Census Pick 'Other.'" *New
    York Times*. November 9, 2003.
Neuman, W. Russell. 1986. *The Paradox of Mass Politics: Knowledge and Opinion in the American
    Electorate*. Cambridge, MA: Harvard University Press.
Quillian, Lincoln. 1995. "Prejudice as a Response to Perceived Group Threat: Population Com-
    position and Anti-Immigrant and Racial Prejudice in Europe." *American Sociological Review*
    60:586–611.
Raudenbush, Stephen W., and Anthony S. Bryk. 2002. *Hierarchical Linear Models*. Thousand
    Oaks, CA: Sage Publications.
Ross, Lee. 1977. "The Intuitive Psychologist and his Shortcomings: Distortions in the Attribution
    Process." In *Advances in Experimental Social Psychology*, vol. 10, ed. Leonard Berkowitz.
    New York: Academic Press.
Sigelman, Lee, and Richard G. Niemi. 2001. "Innumeracy About Minority Populations: African
    Americans and Whites Compared." *Public Opinion Quarterly* 65:86–94.
Skerry, Peter. 2000. *Counting on the Census?: Race, Group Identity, and the Evasion of Politics*.
    Washington, DC: Brookings Institution Press.
Smith, Tom W. 1995. "A Review of Ethno-Racial Measures on the General Social Survey." National
    Opinion Research Center, University of Chicago, GSS Methodological Report No. 85.
———. 2001. *Intergroup Relations in a Diverse America: Data from the 2000 General Social
    Survey*. New York: The American Jewish Committee.
Snijders, Tom, and Roel Boske. 1999. *Multilevel Analysis*. Thousand Oaks, CA: Sage Publications.
Stoker, Laura, and Jake Bowers. 2002. "Designing Multi-Level Studies: Sampling Voters and
    Electoral Contexts." *Electoral Studies* 21:235–67.
Taylor, Marylee C. 1998. "How White Attitudes Vary with the Racial Composition of Local
    Populations: Numbers Count." *American Sociological Review* 63:512–35.
———. 2000. "The Significance of Racial Context." In *Racialized Politics: The Debate About
    Racism in America*, eds. David O. Sears, Jim Sidanius, and Lawrence Bobo, pp. 118–36. Chicago,
    IL: University of Chicago Press.
Tversky, Amos, and Daniel Kahneman. 1974. "Judgment Under Uncertainty: Heuristics and Bi-
    ases." *Science* 185:1124–31.
Waters, Mary C. 1990. *Ethnic Options: Choosing Identities in America*. Berkeley; CA: University
    of California Press.
Waters, Mary C. 1999. *Black Identities: West Indian Immigrant Dreams and American Realities*.
    New York: Russell Sage Foundation.
Welch, Susan, Lee Sigelman, Timothy Bledsoe, and Michael Combs. 2001. *Race & Place: Race
    Relations in an American City*. New York: Cambridge University Press.
Wright, Gerald C. 1977. "Contextual Models of Electoral Behavior: The Southern Wallace Vote."
    American Political Science Review 71:497–508.