Bringing the Person Back In: Boundaries, Perceptions, and the Measurement of Racial Context

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Place is sometimes vague or undefined in studies of context, and scholars use a range of Census units to measure "context." In this article, we borrow from Parsons and Shils to offer a conceptualization of context. This conceptualization, and a recognition of both Lippmann's pseudoenvironments and the statistical Modifiable Areal Unit Problem, lead us to a new measurement strategy. We propose a map-based measure to capture how ordinary people use information about their environments to make decisions about politics. Respondents draw their contexts on maps—deciding the boundaries of their relevant environments—and describe their perceptions of the demographic make-up of these contexts. The evidence is clear: "pictures in our heads" do not resemble governmental administrative units in shape or content. By "bringing the person back in" to the measurement of context, we are able to marry psychological theories of information processing with sociological theories of racial threat.

The study of individuals interacting with their environments has a long history (Lewin 1936) and a vibrant presence today in the large literature on "context effects." The results are fascinating, but practical matters may hinder continued progress. In particular, scholars could make the following observations about the last 75 years of this research: (1) we use contextual measures that are readily available; (2) different measures of context generate different results; (3) people's perceptions of their environment do not resemble governmental units; and (4) people define their environments differently. Taken together, these critical observations suggest that when we use administratively drawn geographic units as "context," we risk confusion of multiple types.[1]

Given these observations, why would scholars continue to use data collected at the level of an administrative unit as measures of people's contexts almost exclusively? There are at least two reasons for this persistence: many scholars do not have the resources to collect alternative data, and more importantly, we do not know how to determine whether a unit is the "right" one. But, we often require our students embarking on research projects to answer two questions: Are the concepts and measures clear and meaningful? And, how does the proposed design relate to the ideal? The observations made above imply that it would be difficult to answer these fundamental questions. To remedy this problem, we offer a theoretical foundation for contextual effects, propose a data collection methodology commensurate with it, and present illustrative data as proof of concept.

Our new map-based measure of context ought to help future researchers answer both questions of measurement—what kind of geographic units ought to be most relevant for individual attitudes and behavior?—as well as questions of mechanism—how does place get into the heads of people, and how do

[1]We thank the Interdisciplinary Institute at the University of Michigan for funding the pilot study, and the University of Illinois Center on Democracy in a Multiracial Society for a fellowship for Wong. An online appendix for this article is available at https://journals.cambridge.org/jop containing supplemental analyses. Data and supporting materials necessary to reproduce the numerical results in the paper are available at www.carawong.org.

The Journal of Politics, Vol. 74, No. 4, October 2012, Pp. 1153–1170 doi:10.1017/S0022381612000552
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ISSN 0022-3816

people represent places in their minds? The operationalization of context needs to capture the many different ways that the macro-social demography of a community is linked to the political psychology of its residents. Therefore, we ask respondents to draw their contexts on maps—wherever they see the boundaries of their communities—and then describe the content of these contexts. With our new measure of context, we examine whether people's "pseudoenvironments" reflect the "objective" context across multiple units of analysis and discuss the distance between common practice and our conceptualization of context. We also ask why levels of misperception may vary at different geographies and across different attributes of an area, raising new questions about the mechanisms by which contexts affect individuals.

The results help deepen and extend our knowledge about how context matters in politics, showing that governmental administrative units do not define the environments relevant to individuals, and that people do not "see" what the Census "sees." Census numbers may be related to political judgments, but only by studying how these facts become beliefs can we understand more fully the mechanisms by which place affects politics. By measuring an environment that is relevant to the individual, researchers can also avoid a serious methodological problem—the modifiable areal unit problem—that could explain the inconsistency of results in research on racial threat and contact.

After a quick summary of some of the meanings of context and contextual outcomes, we explain why a clear conceptualization will help us address some of the observations made about previous research. We then describe why there are problems in measurement at the level of both the aggregate contextual unit as well as the individual. Finally, we use a pilot study to illustrate the use of new ways to approach the study of context and compare the effects of different measures.

Situating Research on Context

The places where people live can affect them in a myriad of ways because context can be both objective and subjective, and the outcomes can be physical or psychological (Sampson, Morenoff, and Gannon-Rowley 2002).[2] For example, in the case of pollution, environmental allergens in the air breathed by individuals have a direct physical effect on their lungs and health. This "context effect" requires no knowledge on the part of its residents about the environment; one does not have to see and recognize smog to be affected by it. Similarly, living in a poor area can minimize people's ability to engage in politics due to limited access to information and politicians' attention, all without entering into these residents' calculations about whether to participate in politics; they may not realize resources are missing, but the contexts in which they live can still influence their behavior.

People's surroundings can also have less direct effects, particularly when the outcomes are psychological in nature. For many important political phenomena, people must be cognizant of their environment for it to have an impact. Living in a poor area, for example, can also lead individuals to feel threatened; living in an area with many racial outgroup members can lead to fear for one's job, identity, or political voice (Blalock 1967; Taylor 1998). These perceived threats are the main concern of political scientists focused on racial context (see, for only a few examples, Glaser 1994; Key 1949; Oliver 2010). However, if these environmental characteristics lead to feelings of threat, someone—elites, if not also ordinary residents—must be cognizant of the context (Lazarsfeld, Berelson, and Gaudet 1968). After all, fear is an emotional response to a perceived threat, and the brain acts as the filter for recognizing outgroup members as "pollutants" or threats.

Just as the outcomes of context can be both physical and psychological, context itself can be objective—defined by gates, walls, and borders—as well as subjective (Wong 2010). Political science measurement of racial context tends to emphasize the former. When we conceptualize the environment as a container (of recognizable and commonly shared dimensions), it is sufficient to pick the size of the container, measure its contents, and test for relationships between said content and our outcome of interest, whether that is a propensity to develop asthma or prefer a particular policy. The researcher will still need to justify the choice of the container size for statistical and theoretical reasons discussed later. But, if "context" is conceptualized as an "objective" container, it is unnecessary to ask residents if they are aware of the container and its contents.

However, while one's environment may serve as a physical container within which individuals exist and interact, "context" can also refer to the environment in which people *believe* they live; the "pictures in their heads" or their "pseudoenvironments" are the

[2]In this paper, we set aside explicit considerations of personal networks of acquaintances and focus on the perceptual mechanisms of impersonal interactions only. We do discuss how some measures of impersonal interactions may reflect interpersonal mechanisms and focus on "geographic" rather than "social context" (Huckfeldt and Sprague 1987, 1995).

reality with which people engage, regardless of the accuracy or distortion of these perceptions (Lippmann 1991). While it is a truism in social science research that race is a social construct, we want to emphasize that people's racial contexts are also social constructions, as well as seemingly objective attributes of a physical reality. Researchers have learned much from studies of phenomena like white flight, tipping points, and racial discrimination in housing, insurance provision, and medical care, all of which emphasize the importance of how individuals perceive, construct, and evaluate the race and ethnicity of those they observe and with whom they interact (see, for example, Yinger 1997). Recognition of these multiple types of outcomes and perceptions of context is important because it highlights the different mechanisms by which context can affect politics, just as adding frustration-aggression displacement theory to realistic group conflict theory emphasizes how "perceived" shortfalls can matter as much as "objective" deprivations (LeVine and Campbell 1971).

Conceptualization of Context

While political scientists have written about how environments matter for politics for almost a century, geographic "context" is very rarely defined in contemporary articles, perhaps because its ordinary language usage is shared by researchers. It seems almost superfluous to state explicitly that "context" is the place, area, or environment in which people live. However, these general definitions serve more to delineate what Adcock and Collier (2001, 530) would call the "background concept" (including all possible meanings associated with the concept) rather than the "systematized concept" (the specific formulation adopted by a researcher). This lack of specificity leaves scholars with little guidance as they move from concept to operationalization, making the danger of operationalism very vivid (Blalock and Blalock 1968). For example, context simply *becomes* percent black or ethnic diversity in a county.

The concept of context should convey what unit of analysis might be most appropriate. Fortunately, there is no need to reinvent the wheel, nor is it necessary to develop an idiosyncratic conceptualization; instead, we use a classic social science definition. In *Toward a General Theory of Action*, Parsons and Shils describe three components of their theory: "actors, a situation of action, and the orientation of the actor to that situation" (1951, 56). The situation of action

> is that part of the external world which means something to the actor whose behavior is being analyzed. It is only part of the whole realm of objects that might be seen. Specifically, it is that part to which the actor is oriented and in which the actor acts. (56)

We believe that Parsons and Shils's "situation of action" is the context to which scholars refer when they talk about context having an effect on individuals' political attitudes and actions. Note that this concept encompasses containers; a container is just a "part of the external world" toward which people are assumed uniformly oriented, in terms of both its boundaries and contents. In other words, using the Parsons and Shils definition does not preclude the instances in which objective characteristics of a fixed container affect individuals' attitudes and actions directly.

According to this conceptualization, a context effect can encompass the effects of communication. For example, one could imagine an individual who receives all of his information about his context, accurate or not, from a demagogue who warns of encroaching outgroup members. (The individual could be visually impaired or blithely unobservant of his environment.) If the demagogue mobilizes voters using threats posed by outgroups without reference to a geographic area—possibly stressing a violation of ideology or values—then this would not be a contextual effect. In contrast, if information given about his surroundings then affects this individual's attitudes and actions, we would argue that there is both a contextual and communication effect.

Measurement of the Contextual Unit

Political scientists almost always justify their choice of contextual unit on theoretical grounds. For example, because individuals rarely live and work in the same census tract—and the effects of racial context in one's life overall, not just one's neighborhood, may have political effects—county may be the ideal contextual unit of analysis despite its extreme heterogeneity (Branton and Jones 2005). Alternatively, because racial context may be understood as the interaction between ingroup and outgroup members, the unit of analysis should be small—like the neighborhood—in order to capture actual contact between individuals and significant social relationships (Gay 2004). Or, because the outgroup is defined at the national level (i.e., immigrants), the appropriate context is the country (Quillian 1995). Political elites at the national level may also prime a local context

that is, or is becoming more, diverse (Hopkins 2010). And, scholars argue that multiple contexts, macro- and microenvironments, may interact and should be considered simultaneously; this raises the additional question of which of the many possible combinations of contexts to consider (Key 1949; Liu 2001). As Oliver and Mendelberg explain, "Identifying a context's boundaries is essential for understanding its potential effects" (2000, 577).

While the different theoretical arguments justifying area size are reasonable prima facie, a major reason for why a particular unit may be chosen in studies of racial context is that of practical necessity. As Glaser describes,

> ... the social scientist's choice of neighborhood, precinct, county or state is often arbitrary, determined by what is available in a dataset, and there is no guarantee that he/she is really capturing racial balance in a way that is salient to respondents. (2003, 608)

Because few studies are designed explicitly to address questions of racial context, scholars are constrained by the units available in a given dataset.[3] Many studies, like the General Social Surveys for example, do not automatically identify respondents at multiple geographic levels in order to protect the anonymity of survey respondents; one by-product is that scholars are often limited to asserting that the contextual unit they use is ideal rather than testing and proving it. And unfortunately, the many studies of racial context have not converged to a consensus about the ideal contextual unit. In their article, Tam Cho and Baer (2011) provide an excellent summary of many examples of the research on racial context; across 34 studies, the geographic units chosen vary from prison cells to countries. And, even when the same contextual unit of analysis is chosen, they show the results can support contact theory, threat theory, or even both simultaneously. They also point out that these disparate findings could arise because of a statistical artifact.

In response to the cacophony of units and results, Tam Cho and Baer recommend that more than one unit should be used in analyses, partly as a robustness check, but mostly to be aware of the potential conflicting results that can arise from the "modifiable areal unit problem" (MAUP). The MAUP is a phenomenon well-documented by geographers, whereby relationships between variables at one level can change when studied at a different level of aggregation; the areal units chosen are "modifiable" or arbitrary (Achen and Shively 1995; Cho and Manski 2008). The MAUP is actually composed of two problems concerning scale and aggregation. Gehlke and Biehl (1934) find that larger units lead to larger correlation coefficients, even when the correlation at the individual level across units is constant, showing that scale can affect statistical inference. Wong explains:

> ... a general characteristic of the scale effect is to smooth out extreme values so that the range of the values is narrower ... If one follows the logic that more spatially aggregated data are less variable, and this logic is extended to analyze correlation between variables, it is not difficult to come to the conclusion that data at the higher aggregation levels will likely have higher correlation than more spatially disaggregated data. (2009, 5)

The aggregation effect is easily understood if one considers the problems of redistricting after a census; even with the constraint that districts must have roughly the same number of residents, there are multiple possible maps that can be drawn. Districts drawn by individuals with different political leanings, for example, rarely lead to the same number of Republicans and Democrats elected.

Openshaw and Taylor (1979) show both the scale and aggregation effects of the MAUP using the relationship between the percentages of Republican voters and of elderly voters in Iowa. They compared the correlations in the state's 99 counties as well as in all possible combinations of these counties into larger districts. They were able to find correlations ranging from -.97 to +.99, with no clear pattern between the spacial characteristics of the districts and the variation in the coefficients.

The effects of the MAUP are less severe if the aggregation is done in a noncontiguous or spatially random way or if the variable of interest is randomly distributed. However, racial groups in the United States are not randomly distributed. And, given that tracts are composed of contiguous block groups, counties of contiguous tracts, and so on, the aggregation effect of the MAUP may be even more severe in political science research on racial context. Further research has shown that the MAUP affects multivariate regression, Poisson regression, multilevel models, spatial interaction models, and spatial autocorrelation statistics, along with simpler statistics like the mean, variance, and correlation coefficient (Gotway and Young 2002). Scholars have proposed complex statistical solutions for the MAUP, but each has its own limitations, set of assumptions, and critics (King 1997; Wong 2009).

Not many political scientists have looked at contextual effects at multiple levels, and almost all

[3]Although more recent studies have tended to make more geographic identifiers available, this was a common problem with older surveys.

explain discrepancies across levels in substantive terms, rather than noting the MAUP (Baybeck 2006; Oliver and Mendelberg 2000). For example, an argument could be made that racial diversity has an effect at the metropolitan level and not at the neighborhood level because threat is only experienced at the larger, aggregate levels (Oliver 2010). It is rare for scholars to test whether their findings are consistent across multiple levels, which Wong (2009) argues is the minimum standard in handling the MAUP (see Hopkins 2010, for example). An equally good explanation for differences in coefficients across scales is the MAUP. We have no way of knowing whether these differences arise because of the explained substantive rationales or whether the differences are statistical artifacts of the MAUP. Even if one takes into account the effects of nearest neighboring contextual units, there is still no way to adjudicate between one scholar's argument that census tract is the best unit of analysis and another's that city is superior.

Openshaw (1984) explains that the "simplest solution" to the MAUP has been to ignore it and that "the general absence of comparative studies may have helped to disguise the extent to which zone-dependent regularities are being uncovered" (31). While simple statistical solutions to the MAUP are elusive and ignoring it is problematic, we propose here a way of *sidestepping* the MAUP. The choice of unit should not be limited by the constraints of a survey (e.g., geographic identifiers gathered for respondents), and it should have geographical meaning. Census data, for example, are reported for modifiable areal units (blocks, tracts, etc.), following criteria determined by political and logistical considerations rather than because they are "natural areas" with intrinsic geographical meaning (Hatt 1946).[4] If we think of the Parsons and Shils conceptualization of context and the questions that motivate scholars of racial threat, the real question of interest is how people react to their surroundings. Such a conceptualization naturally emphasizes new possibilities for operationalizing context: given this definition, what is the ideal context to be studied? The "situation of action" should be measured at levels that individuals "see," and it should be allowed to vary by individual. The "external world" that matters may also vary from policy to policy.

In the new measures we develop and test, we ask individuals to define their own relevant contexts; rather than assume that administrative units are places with meaning to individuals, we ask our respondents to draw their contexts on maps. The level of interest does not have to be less aggregated than the level of data available: we care about the context to which people are reacting, and we can gather individual-level data on both the context seen (i.e., its size, boundaries, and content) and the reactions to it. With this new measure, we are also able to answer the question of how the boundaries of people's communities match up to administrative units used in most previous racial context work in political science. If we think context is a "situation for action" and want to understand the political outcomes of individual orientations to the situation, then we need to measure context at the level of the individual. If we do so, we also avoid the MAUP: we will know that our statistical summaries reflect differences across individuals, not artifacts of aggregation and scale.

Measurement of Racial Threat as a Psychological Process

If context matters for individual-level psychological phenomena like threat and ethnocentrism, it must matter via perceptions. That people observe and understand their contexts is assumed by most research on this topic in political science; the standard practice is to use Census data as the measure of diversity, and the interpretation is that individuals observe qualities of their locales and these observations may affect their opinions and actions. We tend to assume that people's perceptions are similar both to Census numbers and to each other's.

However, since the 1940s, scholars of public opinion have learned a great deal about why Census numbers may not be good measures of people's "pseudoenvironments." The American public's level of political knowledge is often surprisingly low (Converse 1964; Delli Carpini and Keeter 1997). Ordinary citizens also make incorrect inferences based on personal experiences or recent, salient events due to perceptual biases (Ross 1978). When it comes to the racial/ethnic make-up of the United States, for example, surveys have shown that Americans greatly overestimate the numbers of minorities in the country (Highton and Wolfinger 1991; Nadeau, Niemi, and Levine 1993; Wong 2007). Furthermore, individuals' misperceptions influence policy preferences (Gilens 2000, 2005; Hochschild 2001), and simply giving people factual information does not "correct" their

[4]In other fields, scholars have already shown that institutionally defined boundaries are not the most relevant for a wide range of outcomes of interest (Aitken and Prosser 1990).

policy opinions (Kuklinski et al. 2000). Nevertheless, the issue of misperception or misinformation has largely been missing in the political science research on racial context (but see Alba, Rumbaut, and Marotz 2005; Chiricos, McEntire, and Gertz 2001).

Inaccurate perception of racial demographics can be compounded by other misperceptions. While some scholars have equated "context" with racial/ethnic diversity, the content of a context obviously extends beyond this one dimension. Research on racial threat has also incorporated the effects of socioeconomic and partisan context along with racial context. The findings indicate that such attributes can interact or that socioeconomic or partisan context may be even more relevant for people's racial attitudes than the racial/ethnic diversity of where people live, individuals' personal income, or their own partisan identity (Branton and Jones 2005; Campbell, Wong, and Citrin 2006; Oliver and Mendelberg 2000).

However, the same problem of possible misperceptions arises for economic and partisan contexts. For example, the research on the effect of the economy on vote choice has supplied us with ample evidence that "it's the economy, stupid" should be changed to reflect that people's perceptions of the economy are what, in fact, spur votes (Hetherington 1996). While broken windows are easy to observe, other indicators of the average socioeconomic status of one's neighbors can be less visible than race; unless someone is wearing an old college sweatshirt, for example, it is difficult to discern at a distance if one's neighbor is a college graduate or not. Similarly, partisanship is not something most people wear on their sleeve (or car or front yard; however, see Baybeck and McClurg 2005); while individuals are often egocentrically biased to think other people think like them—and therefore assume a high level of homogeneity in their surroundings—a Republican living in a liberal college town could think himself under siege.[5] Using our new measure of context, we can show the similarities and differences of misperceptions about the racial make-up, socioeconomic well-being, and partisanship of one's surroundings.[6]

We are not focused on misperceptions *qua* misperceptions; the extent of the misperceptions simply provides evidence that we need a better understanding of the intervening steps linking Census facts about an area to perceptions of the demographic characteristics of that same area to feelings of threat and policy preferences. The objective indicators are, of course, important, but we need to know about people's "pseudoenvironments" as well. We want to be able to answer, for example, the question of whether two people who live in a block group with the same percent outgroup—but *believe* the diversity varies a great deal—will feel the same level of racial threat.

Application of our New Measurement

To illustrate the utility of our proposed conceptualization and measurement strategy, we use data from a pilot survey that we conducted of 62 black and white individuals living in one Midwestern county in 2004.[7] The in-person survey included a map-drawing measure of context, and the research design allows us to bring the individual back into the conceptualization and measurement of context. (See Appendix A for more details.) While the particular maps drawn by our respondents are not meant to be generalizable to the nation, our measure of context is broadly applicable, as are the questions our measure raises about standard practices.

Survey Design

To create a measure of personally relevant places that operationalizes our conceptualization of context, we developed a map-drawing addition to a traditional political science survey.[8] So, in addition to answering a number of survey questions, the respondents were also asked to refer to a few maps. They were first shown two maps—one centered on the block group in which their house was located and one encompassing all of the county from which the block groups were sampled—and were asked to draw on either

[5]However, reactions to status as a numerical minority may not work in similar ways for partisanship and race (Bledsoe et al. 1995; Finifter 1974).

[6]Even if data for multiple contextual variables come from the same source—like the U.S. Census—the causal mechanisms linking these different types of context to political judgments are not necessarily identical.

[7]Overall, the racial demographics of the county are quite similar to the nation's. In 2000, the U.S. was 75% white and 12% black; the county in which we conducted our study was 77% white and 12% black.

[8]We build on the work on mental mapping pioneered by Lynch and which has continued in geography and sociology (Coulton et al. 2001; Lynch 1973; Matei, Ball-Rokeach, and Qiu 2001).

map the area that made up their "local community."[9] The approximate location of their house was indicated on each map, and the maps included both block group boundaries as well as nearby labeled streets. In order to measure respondents' perceptions of the content of their contexts, we then asked about perceptions of the proportion of blacks and whites, Democrats and Republicans, and unemployed living in that community.[10] Later, they were shown a map with their block group highlighted and were again asked to describe the racial, partisan, and economic breakdown of the block group. They were also asked about their perceptions of these factors at the national level. Thus, we were able to gauge perceptions of multiple politically relevant characteristics of three geographic contexts, and because some of the contexts were shared, we could make comparisons both within and across individuals of two different racial groups.

Does the Government Define Pseudoenvironments?

We wanted to allow individuals to define for themselves (using maps) what they mean by "community," rather than assume that how context affects political judgments must occur within administrative units defined by government officials. While we were designing the map-drawing questions, we had contradictory predictions. On the one hand, we were skeptical that people knew the locations of the boundaries of any government-designated units in which they resided. On the other hand, we thought that respondents might be guided by the cues provided and follow the bold lines presented on the map, which designated block group boundaries.

Almost two-thirds of the respondents (n = 36) chose to draw their community on the smaller maps centered around their block group (see Figure 1(a) for examples), while the rest chose the larger one (23).[11] Even given the limited scope of the pen and paper maps, it is clear that people's communities are (1) different from governmental administrative units and (2) idiosyncratic and not commonly shared visions. Regardless of the size of their "local community," none of the respondents' drawings followed block group lines neatly. A couple of the maps had noncontiguous areas marked, some marked areas as small as a single street, while others encompassed the entire large map of the two cities within the county. No two maps were identical, even for residents living in the same block group, and they ranged in size from smaller than a block to larger than two cities together.[12] There is no clear pattern by race, income, or education as to what size of community was drawn. Furthermore, there is no simple relationship between size of community drawn and ethnocentrism. More ethnocentric individuals could choose a smaller community—limiting their inclusion of outgroup members in the community—but there is no clear pattern across a range of racial attitudes that this is the case.[13]

Later in the survey, respondents were shown the "small" map again, this time with their block group highlighted. They were told that the borders on the map showed the boundaries of what the Census

[9]The map-drawing task was one of the first in the survey, so the respondents were not primed to think about particular issues or communities by other survey questions. We also provided no definition of "local community," both to avoid the respondents second-guessing what the researchers might want and also to avoid cueing any particular level of aggregation. Granted, the largest map that could be drawn was at the county level, although respondents could also respond that they did not think of their "local community" in this way. While it would have been ideal to know how perceptions of their communities changed depending on the issue, for a pilot study we were interested in getting a more general sense of how people would define their local community. In future research, we plan to prime respondents to think of different policies or geographies before the map drawing. The terminology was chosen to emphasize a politically and personally relevant grouping of people (a "community") that is spatially interdependent ("local").

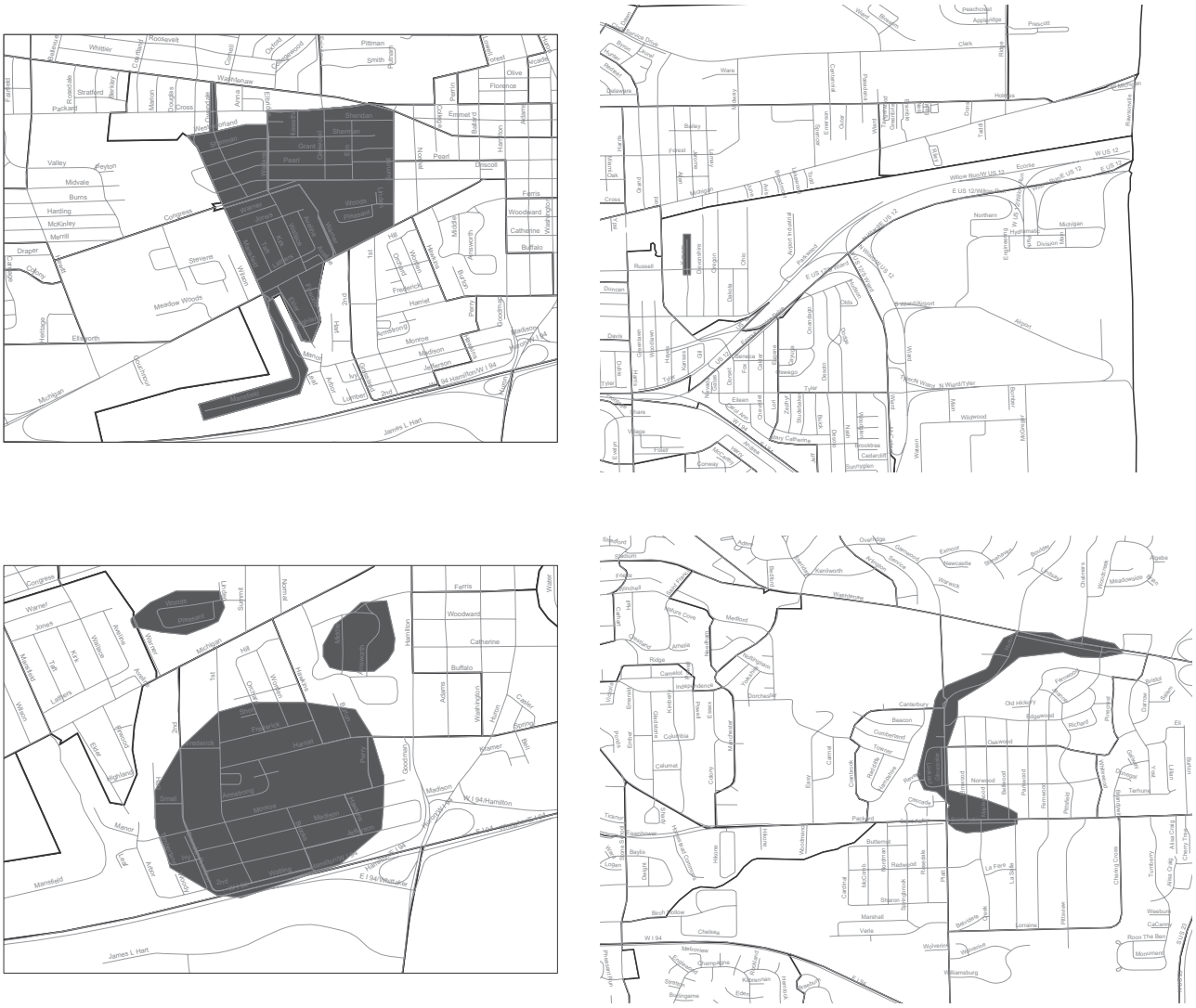
[10]While there are many possible measures of economic context, we chose to use percent unemployed. The average education level of residents in an area may be a more reliable measure than unemployment (Huckfeldt 1986), but we believe that if perceptions are driven in part by observational learning, then residents' employment status may be more visible to others than their diplomas.

[11]We were concerned that respondents might find the map-drawing task overly difficult, but our worries appeared to be unfounded. Only one respondent did not draw on the maps, explaining that she did not think of her "local community" in these ways. Two respondents who were visually impaired were able to describe the major streets and landmarks that defined the borders of their local communities. All other respondents were able to draw their local communities on the maps. Of course, the ability to draw maps is not the same as a clear understanding of maps; nevertheless, respondents do not need to be cartographers drawing navigable maps in order to communicate mental representations of their contexts.

[12]Each community map was traced into ARCGIS to determine its size and how it related to Census block groups.

[13]We need to keep in mind that even though the size of the communities drawn in the pilot varied widely, we believe the range would have been even greater if there had been more than two choices of maps offered. Given social psychological research about anchoring, it is very likely that people chose communities that would fit on one of these two maps and that if they were not so restricted to these particular spatial resolutions, the size of the community may have been even larger for some respondents, extending beyond the county in which they live.

FIGURE 1 Examples of Map-Based Measures of Context: "Local Communities" Drawn on Block Group and County Maps



(a) "Local Communities" drawn on "small" maps.

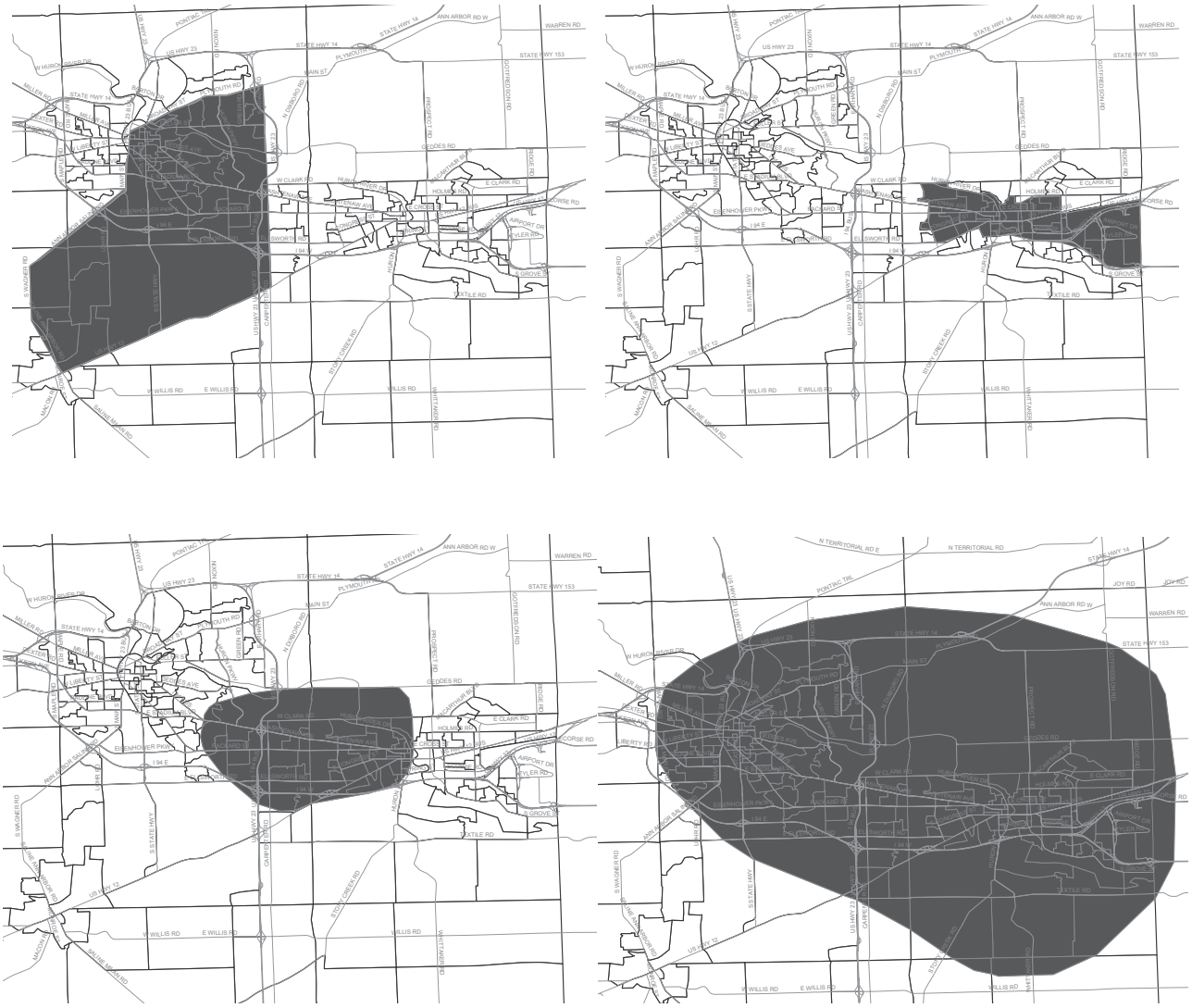
Bureau defines as a "block group." Respondents were then asked whether they thought the highlighted area captured what they thought of as their neighborhood. Sixty-one percent agreed that their block group was a reasonable representation of their neighborhood. This percentage may be biased upward for two reasons: suggestibility—with a credible government institution as the source—and acquiescence bias. Even taking into account that the response could be inflated, almost 4 out of 10 respondents did *not* think of their block group as a close approximation of their neighborhood. Other research has also shown that people's perceptions of their neighborhood vary greatly (Huckfeldt 1979; Sastry, Pebley, and Zonta 2002). This all serves as evidence that "neighborhood" is no more a commonly shared container than is "community" and that the variance across maps is not because "community" is a particularly idiosyncratic term.[14]

Do You See What I See?

A common assumption in the research on racial context is that people's beliefs align with the facts

[14]We expect that in areas where neighborhoods are named, isolated, or gated, agreement about the boundaries of the neighborhood may be greater; however, the clarity of these borders varies a great deal across the nation, and one cannot assume that knowledge in one area means knowledge in others. Furthermore, while other Census units may be more politically meaningful than block group—like city—there is no evidence that reality and perception would overlap more for city than for block group. Again, there is a great deal of heterogeneity across the United States.

FIGURE 1 Continued



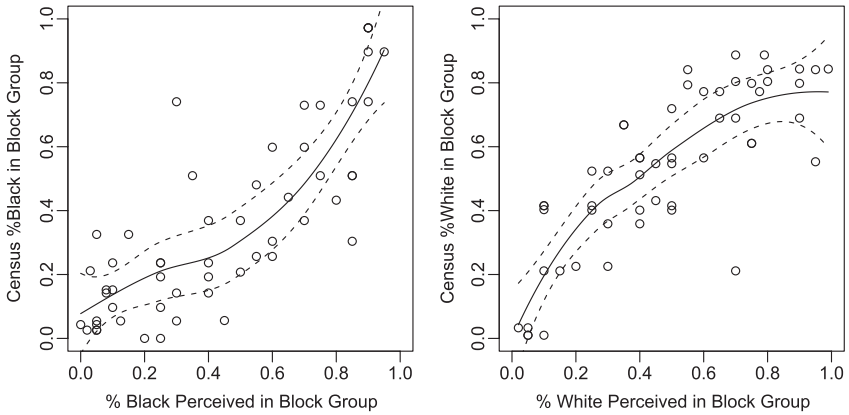
(b) "Local Communities" drawn on "big" maps.

about the demographic make-up of the areas in which they live. We examine whether individuals are indeed accurate when it comes to describing their contexts.[15]

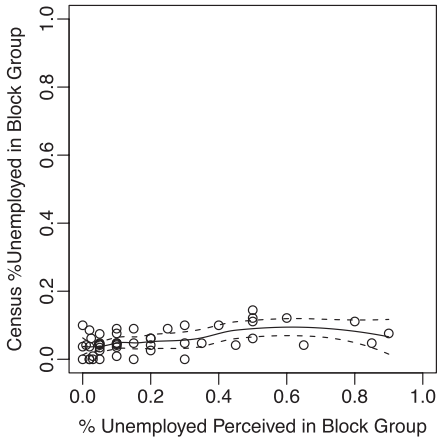
[15]For the analyses presented here, we use as a point of comparison for respondents' "local community" the average of any block group that is included in their drawing. For example, if a "community" was drawn to overlap with three different block groups, then the "objective" point of comparison for racial context used is the Census-reported percentages of whites and blacks for those three block groups together. We considered a couple other alternative measures, but none seemed superior. Using only block groups that were entirely enclosed within a "community" is problematic because some communities did not include a single entire block group. We also considered calculating the fraction of the area of a block group contained within a "community" and including only that proportion in the demographics; however, this assumes that individuals are evenly distributed across a block group, which is clearly incorrect.

Greater Misperception of Racial Context at Larger Aggregations. We predicted that respondents would be more accurate in their perceptions of their local community than the nation, given their personal experiences. Figure 2(a) shows two scatterplots, comparing respondents' perceptions of blacks and whites in their block groups with the Census percentages for the respective groups in the same areas. As can be seen from the plot on the left, the fitted smoothed curve is flatter than a 45-degree line, indicating that respondents' perceptions of the percentage of blacks living in their block group is greater than that reported by the Census. Conversely, their estimates of the number of whites are smaller than the objective numbers. Even if the situation *were* a container, orientations toward the container are not uniform and are not accurate.

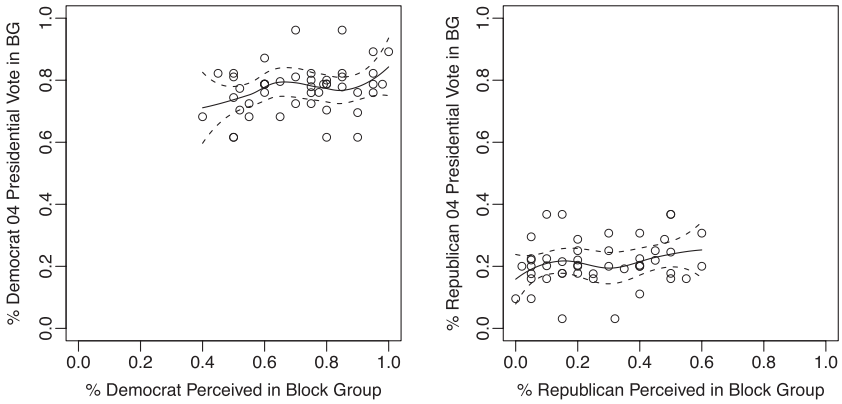
FIGURE 2 "Objective" versus Perceived Racial, Economic, and Partisan Context At the Block Group Level



(a) Relationship between Objective Racial Context and Perceptions at the Block Group Level.



(b) Relationship between Objective Economic Context and Perceptions.



(c) Relationship between Objective Partisan Context and Perceptions.

While there is an obvious relationship between objective indicators and subjective perceptions, Lippmann's pseudoenvironment is not identical to the world described by Census numbers.

Because of the sampling design, we are also able to look at the perceptions of white and black respondents living in the same block group; while one could hypothesize that neighbors may have

shared spatial experiences and similar perceptions of the neighborhood in which they live (Stipak and Hensler 1983), one might also hypothesize that black and white respondents have different experiences living in the same area (Kwan 2000). Scholars have found, for example, that while both whites and blacks are willing to live in integrated neighborhoods, their definitions of "integration" are markedly different (Clark 1991). Comparing white and black respondents who live within the same block group, we find that blacks' estimates of the proportion of blacks living in their block group was, on average, 12 percentage points lower than their white neighbors' estimates, and their estimates of the proportion of whites was 13 percentage points higher than that of their white neighbors. Within racial-groups average differences range from 1 to 5%. However, whites and blacks both tend to misperceive their racial contexts and in the same directions, overestimating the percentage of blacks and underestimating that of whites.

Perceptions of racial context in subjectively defined "communities" are similar to those at the block group level, with some variation. At this geographic level (see Appendix B), the line for percent black appears even flatter and the percent white steeper than those in Figure 2(a), indicating that perceptions of the numbers of blacks and whites are even more distorted when people evaluate their own "community" compared to block group perceptions. Respondents do not know their own drawn "communities" better than their Census block group, and misperceptions are even greater at the national level. Furthermore, while black and white neighbors have different pictures of the same block group in which they live, black and white respondents in our survey share similar visions of the nation; blacks' estimates of the proportion of blacks living in the nation were only 3 percentage points lower on average than whites' estimates.[16]

While the percentages of blacks are overestimated and that of whites underestimated, an interesting pattern emerges from comparing these different geographic units: perceptions of racial context become more accurate at more localized levels. In other words, while respondents tended to overestimate the percentage of blacks in the nation by 18 percentage points—thinking the nation is 30% black instead of 12%—the overestimate at the block group level was only 8 percentage points.[17] The story of growing levels of misperception as the "pseudoenvironment" increases in size becomes more complicated, however, when we look at different types of context.

Raising New Questions About Mechanisms with Economic and Partisan Context. We start with respondents' beliefs about the economic and partisan contexts of their block groups. Figure 2(b) and Figure 2(c) present plots for perceptions of the percent unemployed, Democrat, and Republican at the block group level, compared with Census figures and vote returns for 2004. In contrast to the racial content of one's context, the relatively flat line in Figure 2(b) shows that respondents are even more misinformed about the level of unemployment in their block group than the percentage of blacks and whites, with very little relationship between objective and subjective economic contexts.[18] On average, respondents overestimated the percentage of unemployed residents by 16 percentage points, although the misperceptions ranged from an overestimate of 82% to an underestimate of 10%. Respondents' perceptions of the partisan make-up of their contexts also seem to bear only a passing resemblance to the objective measures of partisan context.[19] On average, respondents underestimated the percentage of Democrats by 6 percentage points and overestimated the percentage of Republicans by 6 percentage points So, while there is little relationship between perceptions and objective indicators of socioeconomic and partisan contexts, respondents are more accurate, on average, in their estimates of living in predominantly Democratic block groups than in their beliefs that about one-out-of-every-six residents of their block group is unemployed.

Misperception of the economic context of the "local community" is similar to that at the block

[16]We do not think these results are merely due to innumeracy (see Appendix C).

[17]These national results are replicated almost identically in the 2000 General Social Survey. In the GSS, respondents' estimates of the proportion of whites and blacks were 59% and 31%, respectively. In our pilot, the corresponding numbers were 58% and 30%. This similarity lends support to the idea that these levels of misperception in our pilot are not unique to our sample.

[18]For "objective" data about unemployment rates, we use data from the 2000 Census. For the block groups in our sample, unemployment ranged from 0 to 14%. In contrast, Baybeck and McClurg (2005) find that respondents are fairly well-informed about the economic and partisan status of their neighborhoods. However, their measure of "objective" context was the aggregated self-report of respondents in the neighborhood.

[19]For the "objective" basis of comparison of partisanship, we use the 2004 presidential vote. Because vote returns are aggregated at the precinct level, we average the vote for any precincts that overlap with a block group's boundaries to create its "objective" partisanship. The block groups in our sample ranged from 62 to 96% Democrat, and the county as a whole voted 64% Democrat.

group level, with an average overestimate of 15 percentage points and very little overall relationship between perceptions and objective measures. Perceptions of partisan context at the "local community" level are also similar to that at the block group level: respondents underestimated the proportion of Democrats by 6 percentage points and overestimated that of Republicans by 3 percentage points on average, but hand-in-hand with this greater accuracy is very little relationship between the perceived partisan make-up of a community and objective measures of partisanship for that same area (see Appendix B). A similar pattern of misperception appears at the national level as well. Misperceptions about unemployment in the United States are, on average, an overestimate of 15 percentage points. So, in contrast to perceptions about racial context, people's visions of the economic context are distorted to the same extent across all three levels, whether they are thinking of their block group, community, or nation. There was also a lack of variation across levels for partisan context: at the national level, there was again only a low level of misperception on average; respondents overestimated the proportion of Democrats by less than 5 percentage points and underestimated that of Republicans by about 5 percentage points.

Comparing results across the three types of context—racial, partisan, and economic—across the three levels of context—block group, "local community," and nation—it is clear that (1) there is little variation in average misperceptions of unemployment and partisanship from the local to national level, and (2) perceptions of economic and racial context are more distorted than those of partisan context on average (see Appendix D for a table summarizing these results).

Sources of Varying Misperceptions

Why does our new measurement strategy reveal differing levels of accuracy about racial context across geographic units? People may simply have a better vision of their block group and can more easily envision 100 people, for example, than they can picture about 300 million Americans. Another explanation is that people learn about their various environments in different ways.

In our pilot, we asked all respondents to tell us, in an open-ended format, the source(s) of information for their perceptions at the local, block group, and national level. The responses differ greatly between where one gathers knowledge about the nation and where one gains information about one's local community and block group, with the responses about the latter two blending together (see Appendix E for details). Personal experience, families, and friends play a much larger role in knowledge about people's community and block group; as shown in previous research, everyday observation was cited by at least half of our sample as a source of information about their "local community" and block group, and personal social networks provided information to about a quarter (Gilliam, Valentino, and Beckmann 2002). In contrast, media is the primary source of information about the nation; over two-thirds of the responses referred to media, and few mentioned any other source for their knowledge about the United States as a whole. Exaggerated numbers are most prominent in national "pictures in people's heads," which suggests the important role of the media in creating perceptions of racial context and feelings of threat.

One possible explanation for perceptions of economic context is that such beliefs—regardless of level—are mainly based on media reports. Because few news sources would ever discuss unemployment at levels smaller than a respondent's city, he or she most likely is not exposed to systematic information about unemployment at the block group level. Inferences across all levels could be drawn from the same source of information, with an assumption of uniformity across levels.

When it comes to understanding the accuracy of perceptions of partisan context across all three levels, on average, one possible explanation is the role of media and elections in learning. Stories about election returns may highlight partisan surroundings in a dramatic way for individuals, unmatched by any event that would highlight their racial and economic contexts as clearly, regularly, and officially. Of course, one obvious problem with the explanation that media coverage can lead to greater accuracy is the fact that the news media regularly presents stories about the nation's unemployment rate and Census results, yet respondents were much more misinformed about these facts relative to facts about partisanship at the national level. Neighbors' partisanship is unlikely to change rapidly from year to year, so it may be easier for respondents to learn about their partisan context than the more volatile unemployment rate over time—assuming residential stability—but neighbors' races are even less likely to fluctuate than party loyalties. There is another plausible explanation: in contrast to economic and racial context, the partisan

composition of the nation (and likely many communities and block groups) is more evenly distributed between Democrats and Republicans. Therefore, if a respondent took a guess around 50%, he or she is more likely to appear "accurate" about partisan context at the national level, but grossly incorrect about economic and racial contexts. Research also shows that people are more likely to misperceive rare events than common ones. However, if one looks more closely at the contexts in our sample, this explanation is also problematic: the county from which we drew our sample leans Democratic, and the means and medians of the distributions in both block groups and the local communities drawn, ranged between 75 and 80% Democratic. Obviously, future research is needed to gain a better understanding of how people develop their perceptions of different types and sizes of context.

Old versus New Measures of Context

While this article has focused on measurement, we realize that some may ask whether it is worth the extra effort to measure perceptions of context rather than use administrative numbers. The first answer is that we cannot know for sure whether results that differ using administrative numbers across multiple levels of aggregation arise as statistical artifacts from the MAUP unless we measure "context" at the level of the individual. A second answer is that measuring perceptions gives us the potential to understand better the mechanisms by which context affects politics; for example, we can observe if racial context affects people like particulates in the air (i.e., affecting outcomes, regardless of subjects' awareness of their environment) or if it works via Lippmann's pseudoenvironments.

Some might suggest that we could use Census numbers to approximate the psychological measures that we might prefer. Or, put more critically, might difficult, novel, and messy psychological measures merely proxy for clean and easy Census numbers? In this section we engage with these questions using an example focused on the relationship between "racial context" and racial attitudes among white respondents; our pilot study offers the opportunity to compare the effects of (1) Census numbers in a Census geography, (2) Census numbers in a perceived geography, (3) perceived numbers in a Census geography, and (4) perceived numbers in a perceived geography.

We start with the simple relationship between percent black in a Census block group and responses to a racial resentment scale (Kinder and Sanders 1996).[20] On average, do whites living among more blacks report higher racial resentment? We replicates what has become the standard in larger and more representative surveys: the leftmost line in Figure 3 shows that, in our data, whites who live with many blacks in their block group tend to be more resentful than whites who live near relatively few blacks. In our particular data, we see that the 66% interval for a difference of 10 percentage points in percent black in a block group ranges from about 0.03 to about 0.07 points of difference in the resentment scale: the scale runs from 0 to 1, s.d. of .2. In the absence of other measures of context, we cannot know whether this relationship is masking some aggregation and/or zoning artifact (i.e., the MAUP), nor do we know whether this relationship has the psychological content that many theories of context would use this analysis to assess.

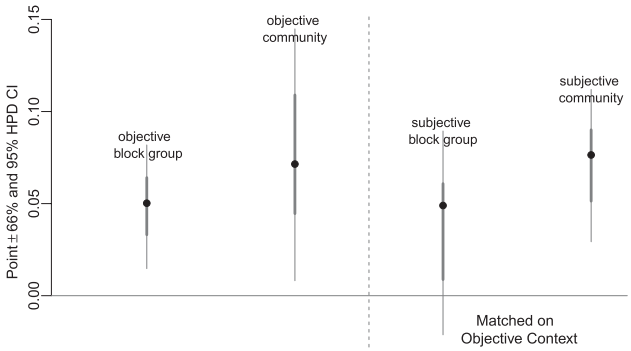
What if we were interested in the differences between people based not on what the Census reports about a Census unit, but about what the Census reports for a personally relevant unit? The second line from the left in Figure 3 shows that Census numbers for percent black in subjective maps relate to racial resentment more or less as strongly and in the expected direction as using Census numbers and boundaries, even if the diversity of maps increases the width of the interval: the center of the interval is in the .04 to .10 range. Because we were able to produce an individual-level, nonmodifiable measure of content, we could thus reassure ourselves that the analysis using Census boundaries was not misleading.[21]

While the map-drawing measure helps us avoid the MAUP, it does not tell us if Census numbers are good proxies for perceptions, or more generally, much about the mechanism by which environments affect people's political decisionmaking. We therefore turn to what we believe is the next step in the mechanism that can lead to threat: perceptions. We compare the effects of subjective measures—measures where we asked white respondents to report on the

[20]See Appendix F for information about the scale and details of the analyses that follow.

[21]In these analyses we do not adjust the estimates for any covariates. Here, the goal is not to disentangle the effects of context from the many and complex possible sources of it (such as selection effects), but rather to compare context based differences in racial resentment across measures of context (each of which may have its own interesting relationship with background covariates such as education and socialization).

FIGURE 3 Effects of Racial Context on Racial Resentment



Note: Racial resentment scale responses as predicted by different measures of racial context ("objective" percent black in the block group or in the hand drawn "community" and "subjective" percent black in the Census block group and hand drawn "community"). Points are empirical Bayes point estimates. Line segments represent highest posterior density intervals (HPD intervals) to summarize model-based uncertainty in the estimates (based on 10,000 samples from the posteriors implied by the Normal-Normal multilevel model with random intercepts and slopes). Estimates of the effects of objective context are not adjusted for any other covariates. Estimates of subjective context are conditional on pairs in which members have almost exactly the same objective context measurements. Creation of the pairs involved non-bipartite matching (Lu et al., 2001, 2011; Rosenbaum, 2010) on absolute distance of objective context ("community" for the subjective community number, and block-group for the subjective block group analysis).

proportions of blacks living either in the boundaries of a context drawn by the Census or the boundaries drawn by the respondent. Would such subjective reports have explanatory power beyond that provided by objective context? We matched respondents to one another, creating pairs on the basis of objective context (using either Census numbers in the block group or in their hand drawn community).[22]

If the subjective reports have little to add beyond objective numbers, then within pairs matched nearly exactly on objective numbers, we should see little difference in subjective reports and, more importantly, differences in subjective reports should not relate to substantively relevant outcomes (and should mainly be seen as noise). The rightmost lines in Figure 3 suggest that this is not the case: subjective context is nearly as strongly related to racial resentment as is objective context even holding objective context almost exactly constant. Specifically, the point estimates and centers of the posteriors arising from the multilevel models estimated conditional on the matching show that differences in subjective perceptions of percent black in a block group are associated with differences of about .05 on the racial resentment scale.[23] A similar result is evident when it comes to perceptions of the subjective boundaries (the line labeled "subjective community" in Figure 3). Even within pairs in which both respondents' maps contained almost the same percent black, the white respondent who perceived more blacks tended to report more racially resentful attitudes than the person who perceived fewer black people in their "local community."[24]

So, what we have shown here suggests that (1) our pilot is consistent with past research, such that objective context predicts racial attitudes; (2) any of the three methods to side-step the MAUP shows a relationship with racial attitudes (and, in our particular case, helps confirm that the sign on the relationship between objective block group percent black and racial resentment in our pilot study is not likely a statistical artifact); and (3) even within pairs of white respondents more or less identical on objective Census numbers, the person perceiving more blacks tended to be the person with higher racial

[22]This matching is not the usual form used in political science in which members of a treatment group are matched to members of a control group (also called "bipartite" matching to indicate that the matching is in two parts). We used nonbipartite matching, in which every unit is a potential pair with every other unit. The algorithm then assigns units to pairs so as to minimize the total differences on the matching scale (here, percent black in the block group). For more on nonbipartite matching, see Lu et al. (2001, 2011) and Rosenbaum (2010). See Appendix F for more explanation about how to use and assess nonbipartite matching.

[23]The uncertainty around this estimate (shown as the vertical lines in the "subjective block group" line on the figure) is wider than the corresponding objective block group analysis: a priori we did not know whether to expect that the loss of degrees of freedom from conditioning on pairs would decrease our precision or whether the increased variation arising from the subjective block group reports would increase our precision or whether the conditioning itself would increase precision by adding explanatory power (given the preceding analysis in which the objective block group numbers did predict the outcome).

[24]Notice that we did not control for education or other covariates in these analyses. When we did this in analyses not reported here (using matching on mahalanobis distances created from rank transformed education, income, gender, and length of residence in a community, and/or using said distances to penalize the matchings on objective context and/or adding those covariates into the linear models as controls), we noticed weaker effects albeit a similar pattern. This supports the points made here: if subjective context is a real entity, then it ought to relate strongly to education and other personal attributes that would make different people perceive their contexts differently. And, objective context effects ought to depend on such characteristics too, both (a) indirectly as they matter for perceptions and (b) directly as such characteristics are proxies for the processes driving residential segregation.

resentment. That is, in terms of the mechanism by which the environment affects political beliefs, we learnt that perceptions of the context matter for attitudes, above and beyond objective characteristics. Parsons and Shils's "situation of action" matters, and objective numbers should not simply be used as proxies for people's perceptions, even if they may matter in other ways.

Discussion

One question raised by the finding that misperception of racial context is greater at larger units is how best to interpret previous findings that context is politically, economically, and culturally threatening at larger units but not at smaller ones. For example, most of the research that finds support for the racial threat hypothesis measures context at the level of county, metropolitan area, state, region, or country; in contrast, the research that has found support for the contact theory tends to measure context at smaller units, like census tract or zip code. In the past, this difference was interpreted as evidence that contact at the smaller units would diminish ethnocentrism, while diversity at the larger aggregate levels made such intergroup contact more likely. Diversity without contact, in contrast, would lead to feelings of threat (Stein, Post, and Rinden 2000).[25] Another interpretation, however, is that these differences in outcomes across levels are simply the result of the MAUP, and we should draw no substantive conclusions about differing perceptions of threat across levels. A third interpretation, given our findings, is that overestimates of the size of outgroups at larger contextual units relative to misperceptions at smaller units is what leads to a greater sense of threat in the more aggregated levels. In other words, if individuals had a more accurate picture of their surroundings, they might not feel a sense of racial threat at the metropolitan or county level, for example. This does not preclude the idea that personal interactions with outgroup members diminish ethnocentrism, but it does raise more questions as to why racial context rarely poses a "threat" at the more localized level in previous research.

We also raise the question of how one should interpret perceptions by different racial or ethnic groups. While the bulk of research on racial threat has focused on the attitudes and actions of white Americans, recent research has expanded to include the effects of context on the political judgments of racial/ethnic minorities (Barreto, Segura, and Woods 2004; Gay 2004; Glaser 2003). The theoretical arguments advanced for all groups are similar—predominantly group conflict or contact theory—although the specifics are left a bit vague as to why groups of such disparate sizes should behave in similar ways. It does seem peculiar to argue that white respondents who compose a majority in a county are as "threatened" by blacks as black respondents in that same county are by whites. After all, if one considers the Black Belt studied by Key, the threat of lynching for blacks was much more real and vivid than the threat of losing political power was for whites. Another complication is added by the fact that previous research has shown that Americans of *all* races overestimate the numbers of minorities in the United States and underestimate the number of whites in the country (Wong 2007). What has not been mentioned is that the motivations attributed to these inaccuracies cannot be the same across groups: if whites, for example, exaggerate the numbers of blacks due to a sense of threat, then why do blacks also exaggerate the numbers of blacks? Threat cannot explain why an individual overestimates the numbers of both her outgroup *and* ingroup.

These misperceptions also have policy effects. The literature on white flight discusses the fact that whites are unhappy and flee when blacks move into their neighborhoods. However, Harris (2001) has found that blacks are also threatened by other blacks moving into their neighborhoods, a threat that cannot be motivated by fear of a racial outgroup. It is possible that economic threat motivates both groups' responses, or they may have different impetuses; teasing out the meaning depends on understanding how different groups perceive and interpret the same environments. When scholars study one group at a time, it is easier to find plausible theoretical explanations for the empirical findings; it is only by comparing groups that one is confronted by the more complicated picture of how perceptions of context can affect political judgments.

[25]We find in our pilot study that contact with outgroup members has no noticeable effect on people's perceptions of their contexts; for example, whites who have contact with blacks at work, at their place of worship, or in their circle of friends are not more or less accurate in their perceptions of how many blacks live in their block group or community, compared to whites whose daily lives are more segregated. In other words, in our pilot, actual interactions with outgroup members do not lead to either greater accuracy or misinformation. So, while contact may diminish ethnocentrism (Allport 1979), it may not do so via greater awareness of one's surroundings.

The housing literature is also relevant for another reason to the analyses presented here. According to Schelling's argument about tipping points, small preferences at the individual level can become magnified at the aggregate level, such that slight preferences for a homogeneous neighborhood lead to the dramatic levels of residential racial segregation that exists in this country (Schelling 2006). Furthermore, as Bruch and Mare (2006) show in their analysis of Schelling's model, the existence of a threshold is key to explaining how slight differences in preferences could lead, in a theoretical model, to an "apartheid America." While the strikingly low threshold observed in real life may reflect the "objective" status of the neighborhood's make-up, it is also possible that the neighborhood is perceived as more diverse than it is in reality and that the threshold for white flight in people's minds is higher than the one observed. In other words, someone might be willing to live in a neighborhood that is one-third black, but because he overestimates the percentage of blacks living in his neighborhood, he ends up moving away well before his real threshold has been reached. While the practical implications may be the same in terms of policy interventions to prevent flight and hypersegregation, there may be a role for public education about the demographics of one's surroundings that could at least slow down white flight.

Conclusion: Attitudes are not Asthma

Medical researchers who study the effects of pollutants on the development of asthma measure airborne particulates in a geographic region and the presence of asthma and other respiratory symptoms for the population living in that area. When political scientists study the effects of racial context on ethnocentrism and policy opinions, their studies mimic the pollution studies: outgroup members are the threatening allergens and attitudes are the asthma. However, in general, context does not surreptitiously affect one's attitudes and actions like smog can invisibly penetrate one's lungs, even if perceptions of it can lead to fear (which in turn can lead to a panoply of unconscious reactions). Parsons and Shils include this perceptual stage—Lippmann's "pseudoenvironments"—in their conceptualization of context, and our map-based measure of context is valid for this conceptualization. Our operationalization of context allows us to ask questions about respondents' self-drawn communities as compared to places that group people by administrative fiat, thus side-stepping the MAUP. We also do not need to presume that ordinary citizens are fully informed consumers of government statistics, nor do we need to assume that people are exchangeable agents who see and react to their contexts in the same ways. When we find contextual effects using convenient, institutionally drawn boundaries, it is impossible to determine if these effects are overly conservative or liberal, or whether they are statistical artifacts, since they most likely vary a great deal across individuals, across subgroups, and across geographic units.

Our first attempt at following our guiding research principles from concept to questionnaire measure and design suggests a need to "bring the person back in." Furthermore, by examining different aspects of people's contexts in our pilot study, we are able to contrast the varied ways that facts about the environments in which people live are converted into beliefs. We find that the mechanisms by which racial, socioeconomic, and partisan contexts are perceived and affect political attitudes and actions do not appear to be the same.

If pictures fixed in people's heads do not match Census pictures, the practical implications extend beyond the confines of citizens' minds or the voting booth. The "fear of crime" literature in sociology has explained that personal and altruistic fear—regardless of accuracy—leads to purchases (e.g., guns), behavioral changes (e.g., not going out at night), and abandonment of locations (e.g., parks and industrial areas; Warr and Ellison 2000). Political scientists need to understand whether perceptions of community heterogeneity and interracial competition have equally serious consequences for political actions and outcomes.

Acknowledgments

We thank Andrea Benjamin, Alana Hackshaw, and Laura Schram for their excellent research assistance on the survey. Thanks for excellent suggestions, critiques, and comments on the overall research project from colleagues and seminar participants at Illinois, Michigan, Harvard, Wisconsin, the 2011 Chicago Area Behavior Workshop, and many anonymous reviewers for the political science, geography, and sociology panels of the National Science Foundation. We particularly want to thank Wendy Tam Cho, Dennis Chong, Jim Kuklinski, Jeff Mondak,

Eric Oliver, and Spencer Piston for their careful reading of this manuscript.

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