Measuring Racial Context*

Brian T. Hamel† Bryan Wilcox-Archuleta‡

September 26, 2019

Abstract

Research suggests that where people live — and the kinds of people who surround them — affects their politics. Empirically, these studies often use residence-based measures of context, ignoring the movement of people in and out of spaces for work, recreation, and commerce. Using new data from the U.S. Census Bureau, we introduce a zip code-level measure of racial context — racial change — that captures the difference in racial composition across work and s. As expected, we find that resident-only measures of context often understate or overstate neighborhood racial diversity. We merge our measure with survey data from the Cooperative Congressional Election Study, and show that greater racial change — more black workers relative to black residents — is associated with more conservative voting behaviors and racial attitudes among whites. Our study suggests that scholars should augment their analyses with presence-based measures of racial context.

*We thank Dan Hopkins, Ben Newman, Tyler Reny, Dan Smith, and Yamil Velez for helpful comments and conversations. Hamel and Wilcox-Archuleta thank the National Science Foundation Graduate Research Fellowship program and the John Randolph Haynes and Dora Haynes Foundation for support, respectively. The views and opinions expressed in this article are those of the authors and do not represent the position or opinions of Facebook, Inc., or its employees.

†Ph.D. Student, Department of Political Science, University of California, Los Angeles, 4289 Bunche Hall, Los Angeles, CA 90095-1472 (bhamel@ucla.edu)

‡Research Scientist, Demography and Survey Science, Facebook, Inc., 1 Hacker Way, Menlo Park, CA 94025-1456 (bwilcox@fb.com)

A prominent body of work shows that white voting behavior and racial attitudes reflect perceptions of racial threat (e.g., Blalock 1967; Key 1949). For example, Reny and Newman (2018) find that black inflows to white areas during the Second Great Migration predicted support for a proposition protecting racial discrimination in housing. Similarly, Enos (2016) shows that whites became less likely to support conservative candidates following the destruction of a large public housing project in Chicago that moved thousands of blacks further from whites. Others find that local growth in the immigrant and Hispanic population increases white opposition to immigration (e.g., Hopkins 2010; Newman 2013).[1]

Common among these studies are the use of resident-only measures of racial context. For instance, Newman (2013) relates over-time changes in the size of the Hispanic population to immigration attitudes. He takes the residential location of the each respondent and links each to the number of Hispanics living in the same county at different points in time. Yet, we know that contexts change: people move in out and out of spaces for work, recreation, and commerce. Simply put, residents are not the only ones who occupy a space, and they may not even be the most visible from day-to-day. In particular, those who move into a space for work everyday may be the most visible and public-facing, and who works in an area may differ from who lives there. If so, resident-only measures of racial context may understate or overstate neighborhood diversity. Areas with large white (black) resident populations may in fact be relatively more (less) diverse as non-white (white) workers move into these spaces for work and out of these spaces at night. As a result, many neighborhoods — and the experiences of people living in them — may be more or less racially diverse than researchers may ascribe to them in studies of context.

We introduce a new dataset from the U.S. Census Bureau, and a new zip code-level measure of context — racial change — that gives the difference between the black work population and the black . Positive (negative) values indicate that there are more (fewer)

[1] An alternative perspective suggests that sustained contact with racial and ethnic minorities gives rise to more accepting attitudes among whites (Allport 1954; Mo and Conn 2018; Oliver and Wong 2003; Oliver 2010).

black workers than there are residents. In doing so, we build on recent efforts to develop new measures of context that better account for the ways in which people think about and define their contexts and experiences (Moore and Reeves 2017; Velez and Wong 2017; Wong et al. 2012, 2018). Second, using data from the Cooperative Congressional Election Study, we examine how racial change correlates with white voting behavior and racial attitudes. We report two key findings. First, we find that resident-only measures of context often understate or overstate racial diversity. Racial change is positively (negatively) correlated with the white (black) resident population, suggesting that resident-only measures of context do not fully capture race as it moves in and out of a research subject's residential area and view. Second, we find that racial change is negatively associated with support for Democratic candidates, and positively associated with feelings of racial resentment and opposition to affirmative action. While our design does not permit causal claims, our results do not appear to be an artifact of conservatives selecting into particular contexts, as we find no statistically significant relationship between racial change and attitudes on abortion, climate change, and gun control. We also find no evidence of a relationship between racial change and political preferences among black respondents.

In short, our results provide suggestive evidence that the movement of people in and out of spaces affects people's political thinking. The presence of black workers in contexts with few black residents is associated with more conservative political preferences. We see these findings as indicative of the power of racial threat: both permanent, residential inflows (e.g., Enos 2016; Newman 2013; Reny and Newman 2018) *and* temporary (yet regular) inflows link to conservatism and anti-group attitudes. While our analyses cannot speak to the mechanisms underlying these associations, they may reflect a "get off my lawn" effect: white residents dislike that "undesirable" non-resident racial minorities move into *their* space everyday for work. We conclude by encouraging scholars to augment their analyses with *presence-based* measures of context — like ours — and highlight ways in which our findings impact recent theoretical and empirical treatments of context and behavior.

Introducing Racial Change

We introduce a new publicly-available administrative dataset from the U.S. Census Bureau — the LEHD Origin-Destination Employment Statistics (LODES) data — that gives detailed information about where workers live and where workers work. Included is information about the racial composition of the workforce and of the workers who live in that same area. Using only data from 2010 to 2014,[2] we create a measure capturing differences between the black work population and the black resident population. For each zip code, we subtracted the percent black in the resident population from the percent black in the work population.[3] We then averaged these data across years (within zip code). Positive values indicate a larger black work population relative to the black resident population. Negative values indicate a larger black resident population relative to the black work population. We call our measure "racial change," as it reflects the way in which contexts change demographically over the course of the day.[4]

As is clear, our study is motivated by a suspicion that resident-only measures of context may understate or overstate diversity in many areas. To test our expectation, we merged our measure of racial change with estimates of zip code-level racial diversity from the American Community Survey (ACS). Figure 1 gives the bivariate association between racial change,

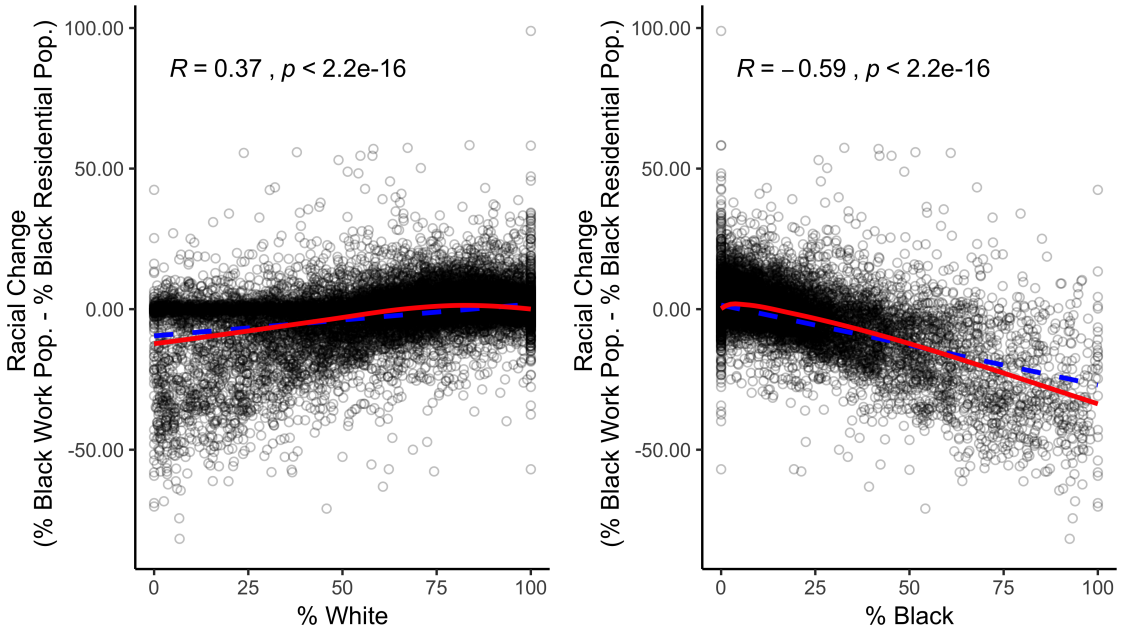
[2]We do so because we later link these data to survey data from the CCES about racial attitudes, and the questions we use — the standard racial resentment questions — are only consistently available in 2010, 2012, and 2014

[3]Consistent with some previous work, we use data at the zip code level (e.g., Hopkins 2010; Velez 2018). We choose zip codes because it offers one of the lowest levels of aggregation available, but also because they appear to be a meaningful locus of exposure. Velez and Wong (2017), for example, shows that objective zip code demographics are the most predictive of user defined boundary-based measures.

[4]We note two features and limitations of the LODES data. First, these counts reflect workers, not people. The data are generated by administrative data on earnings. As a result, the data give the number of workers who live in a given area, and the number of workers who workers in a given area, respectively. Non-working individuals are not captured by these measures. Finally, and perhaps more importantly, the data do not speak to inflows and outflows from a given area. Imagine we are studying Austin, TX. Ideally, we would want to know — with details about race — how many people live in Austin who also work in Austin, how many people live in Austin but do not work in Austin, and how many people live outside of Austin, but work in Austin. A measure of inflows and outflows would allow us to better speak to the composition of individuals. The counts given by the LODES data though, may double-count individuals, for example, who both live in and work in the same area. Our measure then can only reflect "how many more" or "how many fewer" blacks work — relative to live — in a particular zip code.

and the percent white and percent black , respectively. It gives both the line of best fit from a linear regression (blue) and a LOESS regression (red). We find that racial change is positively related to the percent white . In short, predominantly white areas (among residents) are actually more diverse than than standard measures of context would suggest. Put another way, in more white neighborhoods, the gulf between the number of blacks living there and the number of blacking working there is larger — and in the direction of greater diversity. Conversely, we find that as the size of the black increases, the size of the black work population — relative to the black resident population — decreases.[5]

Figure 1: **Racial Change and Residential Racial Composition**



[5]In the Appendix, we present two additional pieces of descriptive evidence. First, we show how these differences manifest themselves in particular cities and neighborhoods (Table A1). Second, we present a multivariate model of racial change using a variety of zip code-level, resident-based demographic and economic variables from the ACS (Table A2). We still find a positive association between percent white and racial change, and a negative association between percent black and racial change. We also find evidence that areas high in racial change tend to have more educated residents and wealthier residents. Geographically, we find that more densely-populated neighborhoods, zip codes in the South, and non-rural (i.e., urban/small cities, and suburban) communities tend to experience more racial change.

Racial Change and Political Preferences

Next, we examine whether racial change is associated with white voting behavior and racial attitudes. We ask: how does living in a context with significant racial change — where "outsiders" move in and out of one's residential neighborhood everyday — affect one's political preferences?[6] We merge our measure with the 2010-2014 cross-section of the Cooperative Congressional Election Study (CCES). The CCES is a nationally representative survey of 50,000+ Americans, and it includes residential zip code for each respondent, allowing us to link each subject to racial change in their neighborhood.

We restrict our main sample to white respondents only, and examine four outcomes: support for Democratic candidates for President and U.S. House, feelings of racial resentment, and opposition to affirmative action. We model each as a function of racial change, as well as a series of individual-level covariates from the CCES (party identification, ideology, gender, age, family income, and education) and each of the resident-only contextual variables included in Table A2.[7] We estimate each model using ordinary least squares, and we cluster our standard errors at the zip code level. Table 1 shows the association between racial change and each of our outcome variables.[8] As is clear, we find evidence that more racial change — that is, a larger black work population relative to the black resident population — is associated with a decrease in the probability of voting for Democrats, and an increase in racially conservative attitudes among whites. Note that these associations persist even in the presence of controls for resident-only measures of racial context, suggesting that whether contexts grow more or less diverse from day to night has a unique and independent influence on political preferences. Figure 2 reports predicted probabilities across levels of racial change

[6] We are not able to test whether people who live in a predominantly white neighborhood, but who work in an area with more racial diversity, are politically distinct from those who both live and work in racially diverse (or racially homogenous) contexts. We see this as an important extension — akin to new work exploring how adolescent racial contexts and adulthood racial contexts affect adulthood racial attitudes (Goldman and Hopkins 2018) — but it requires information on where people work.

[7] The Appendix includes details about how our dependent and independent variables are measured, as well as the text of the survey questions used to generate these measures.

[8] We present all model coefficients in Table A3.

Table 1: **Racial Change, Voting Behavior, and Racial Attitudes (Whites)**

	President	*U.S. House*	*Racial Resentment*	*Affirmative Action*
Racial Change	-0.002^{***}	-0.001^{***}	0.005^{***}	0.003^{***}
	(0.000)	(0.000)	(0.001)	(0.001)
Intercept	1.192^{***}	0.933^{***}	1.674^{***}	1.613^{***}
	(0.080)	(0.077)	(0.211)	(0.154)
Controls	✓	✓	✓	✓
Observations	54081	74831	88032	98726
R^2	0.655	0.558	0.404	0.339
Adj. R^2	0.655	0.558	0.404	0.339
RMSE	0.292	0.326	0.950	0.772

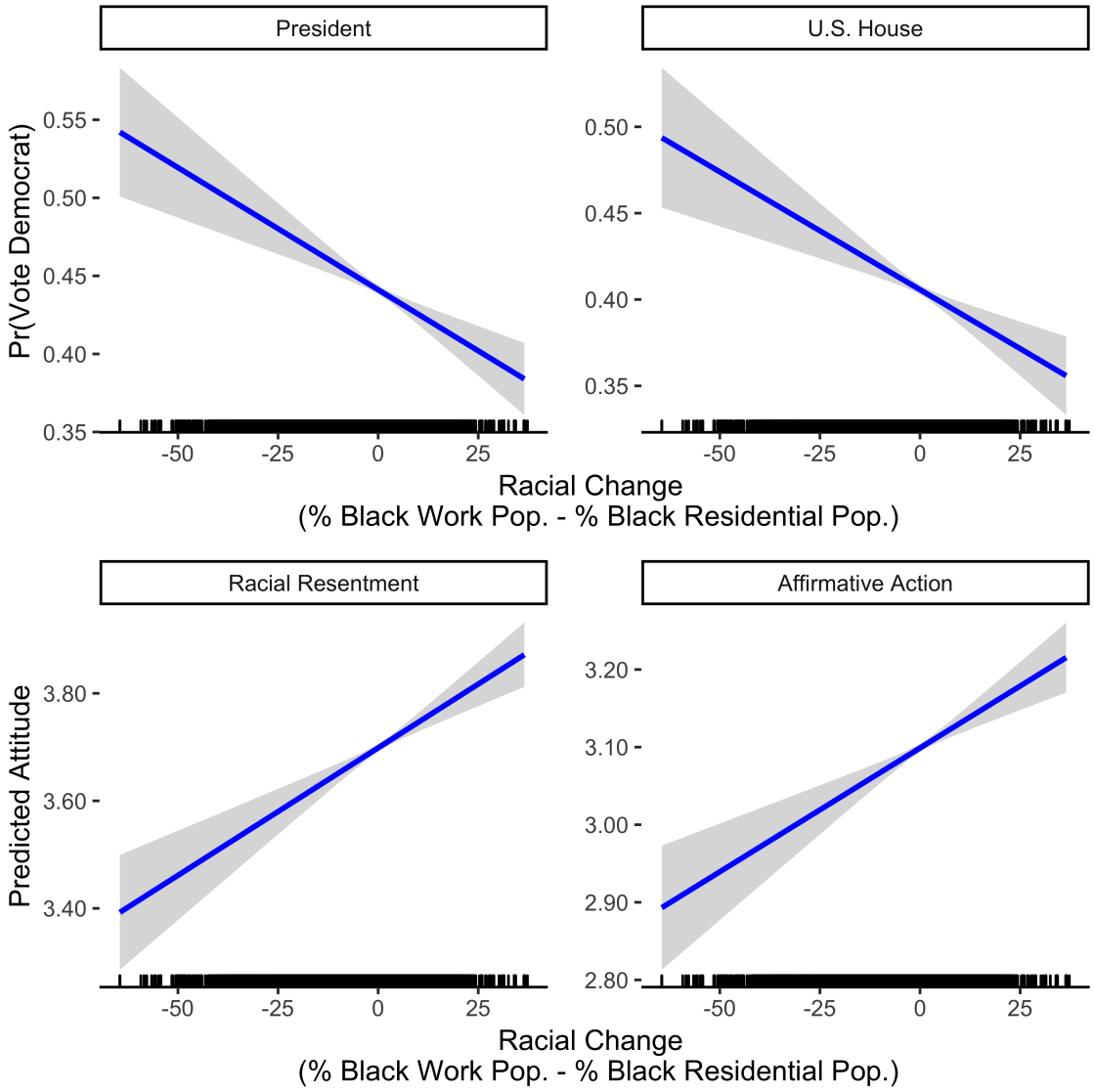
$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$

with all covariates held to their mean. We find that at the 5th percentile of racial change (-9.38), the probability of voting for Obama in 2012 is 0.46. In contrast, the probability of supporting Obama at the 95th percentile of racial change (8.76) is about .43. Likewise, moving from 5th to the 95th percentile in racial change is associated with an increase of about 0.08 percentage points on a racial resentment scale ranging from 1 to 5, where higher values indicate greater racial resentment.[9]

Our research design does not permit causal claims about racial change and political preferences. An age-old challenge in research on context is self-selection. It is difficult to know whether people's behaviors and preferences change as a function of their environment, or whether the contexts in which they live are simply a reflection of their political and social predispositions. We include a variety host of individual-level and contextual-level covariates in our models as a way to model the selection process, but we of course cannot fully rule out the potentially endogenous nature of the associations we report.

[9]One limitation is that we do not know how much time people spend in their own residential neighborhood. It is likely that many respondents work outside of their own zip code, limiting their direct exposure to an influx of minority workers. We reestimate our models among a set of people more likely to spend time in their community throughout the day: (white) retirees. We find substantively larger associations between racial change, voting behavior, and racial attitudes among retirees than we do using the full sample. These results are available in Table A4 and Figure A1.

Figure 2: **Racial Change, Voting Behavior, and Racial Attitudes (Whites) — Predicted Probabilities**



We report the results of two placebo tests in the Appendix (Tables A5 and A6, and Figures A2 and A3). First, we consider whether racial change predicts non-racial political attitudes. If our main findings reflect the influence of political and social predispositions, and not the influence of context, we would expect racial change to also be associated with conservatives attitudes on abortion, climate change, and gun control. We reestimate our model with each of these alternative dependent variables, and find no statistically significant relationships.[10]

[10]Question wording on these policies changed over time in the CCES. Models for climate change and gun

Because we find associations between racial change and racial attitudes — but not other attitudes — we see our results as suggestive that context shapes attitudes more so than it reflects attitudes. Second, we reestimate our models using only black respondents. Studies of racial threat see whites as responsive to changes in the minority population, but minorities should not respond in politically similar ways. The results confirms this expectation: we find no evidence of a relationship between racial change and black voting behavior or racial attitudes.

Conclusion

In this note, we have suggested that resident-only measures of racial context miss the movement of people in and out spaces, and as a consequence, may understate or overstate diversity in many contexts. Using new data from the U.S. Census Bureau, we introduce a measure of racial change that captures how contexts change between work and resident populations. Our empirics show, as expected, that racial change is positively (negatively) correlated with the white (black) resident population. Second, we show that racial change is associated with more conservative political preferences among whites. We hesitate to speculate about the mechanisms behind these associations, but our results do suggest that whites see threat in minority "outsiders" — those who move into white spaces only for work — just as they see threat in racial minorities taking up residence in their neighborhoods. Future work should focus both on establishing more causally-identified relationships, and on uncovering the mechanisms that explain such relationships. For instance, though some work sees racial threat working through symbolic, cultural concerns and not economic anxiety (e.g., Citrin et al. 1997), it seems plausible that economics — and more specifically, labor market competition — could in part explain a relationship between an influx of black workers and political preferences. Racial outsiders moving into white spaces to earn a living may be seen as more economically threatening than influxes of minorities who only live in those spaces.

control use data from 2010 and 2012; the model for abortion uses data from 2014.

In contrast, increases in the minority may induce out-group biases through its effect on the perceived changes to the "fabric" and culture of the community.

Our study calls for scholars of context and political behavior to augment their analyses with presence-based measures of context. Despite the suggestive nature of our empirical findings, we think they have implications for the innovative theoretical perspectives developed by others. For instance, consider Newman (2013). He advances a theory of acculturation and posits that influxes of immigrants activates racial threat among white residents only when it occurs in areas where immigrants were previously absent. Though we study blacks, our work suggests that at very local levels of geography, minorities may have always been present and influencing the politics of whites even if traditional measures of context would mask such exposure. Enos (2017) offers one of the most comprehensive and overarching theories of context, arguing that the geographic organization of people in space influences perceptions of other groups. Yet, like most work, his theory and the empirics supporting it only account for contact with "insiders" — i.e., fellow residents. In this note, we have offered one approach that would allow for scholars to test how the presence of "outsiders" within a context may matter, too, and one way (and source of data), for doing so: the differences between the work and resident population.

References

Allport, Gordon W. 1954. *The Nature of Prejudice.* Reading: Addison-Wesley.

Blalock, Hubert M., Jr. 1967. *Toward a Theory of Minority-Group Relations.* NewYork: John Wiley & Sons.

Citrin, Jack, Donald P. Green, Christopher Muste, and Cara Wong. 1997. "Public Opinion Toward Immigration Reform: The Role of Economic Motivations." *Journal of Politics* 59(3): 858–881.

Enos, Ryan D. 2016. "What the Demolition of Public Housing Teaches Us about the Impact of Racial Threat on Political Behavior." *American Journal of Political Science* 60(1): 123–142.

Enos, Ryan D. 2017. *The Space Between Us: Social Geography and Politics*. New York: Cambridge University Press.

Goldman, Seth, and Daniel J. Hopkins. 2018. "Past Place, Present Prejudice: The Impact of Adolescent Racial Context on White Racial Attitudes." *Journal of Politics* .

Hopkins, Daniel J. 2010. "Politicized Places: Explaining Where and When Immigrants Provoke Local Opposition." *American Political Science Review* 104(1): 40–60.

Key, V.O., Jr. 1949. *Southern Politics in State and Nation*. NewYork: Alfred A. Knopf.

Mo, Cecilia Hyunjung, and Katharine M. Conn. 2018. "When Do the Advantaged See the Disadvantages of Others? A Quasi-Experimental Study of National Service." *American Political Science Review* 112(4): 721–741.

Moore, Ryan T., and Andrew Reeves. 2017. "Defining Racial and Ethnic Context with Geolocation Data." *Political Science Research and Methods* .

Newman, Benjamin J. 2013. "Acculturating Contexts and Anglo Opposition to Immigration in the U.S." *American Journal of Political Science* 57(2): 374–390.

Oliver, J. Eric. 2010. *The Paradoxes of Integration: Race, Neighborhood, and Civic Life in Multiethnic America*. Chicago: University of Chicago Press.

Oliver, J. Eric, and Janelle Wong. 2003. "Intergroup Prejudice in Multiethnic Settings." *American Journal of Political Science* 47(4): 567–582.

Reny, Tyler T., and Benjamin J. Newman. 2018. "Protecting the Right to Discriminate: The Second Great Migration and Racial Threat in the American West." *American Political Science Review* 112(4): 1104–1110.

Velez, Yamil Ricardo. 2018. "Residential Mobility Constraints and Immigration Restrictionism." *Political Behavior* .

Velez, Yamil Ricardo, and Grace Wong. 2017. "Assessing Contextual Measurement Strategies." *Journal of Politics* 79(3): 1084–1089.

Wong, Cara, Jake Bowers, Daniel Rubenson, Mark Fredrickson, and Ashlea Rundlett. 2018. "Maps in People's Heads: Assessing a New Measure of Context." *Political Science Research and Methods* .

Wong, Cara, Jake Bowers, Tarah Williams, and Katherine Drake Simmons. 2012. "Bringing the Person Back In: Boundaries, Perceptions, and the Measurement of Racial Context." *Journal of Politics* 74(4): 1153–1170.