

Supplement to:

Michael T. Light and John Iceland. 2016. “The Social Context of Racial Boundary Negotiations: Segregation, Hate Crime, and Hispanic Racial Identification in Metropolitan America”. *Sociological Science* 3: 61-84.

THOUGH the methodological decisions made in the text are consistent with recent literature on racial self-identification, we devote considerable attention here to our instrumental variable framework and additional analyses using different racial designations as dependent variables and alternative estimation procedures.

Strength of Instrument

An important consideration in IV models is whether the treatment and instrument are significantly associated. If the correlation between the instrument and treatment is small, problems can arise in the second stage of IV models because weak instruments can increase standard errors and produce inconsistent IV estimators. Though in both cases the instruments and treatments are significantly correlated, there are diagnostics for assessing the explanatory power of the instrument in the first-stage of the IV framework. Here we utilize an F-test between instruments and treatment variables. Staiger and Stock (1997) suggest that an F statistic below 10 may indicate a weak instrument. Results reveal the correlation between the number of governments (instrument) and segregation (treatment) is well above that threshold ($F = 59.53$; $df = 1, 263$; $p < .001$). This pattern holds for the correlation between violent crimes and anti-Hispanic hate crimes ($F = 24.81$; $df = 1, 263$; $p < .001$).

Alternative Dependent Variables

The probit models presented in the body of the article estimate the likelihood of choosing ‘other race’ compared to any of the existing racial categories on census forms. This formulation tests our specific hypotheses about the role social contexts play in brightening boundaries between Hispanics and other racial/ethnic groups,

however, it is also valuable to examine the various racial designations that are available compared to the 'other race' option. Because the existing racial classification options are heterogeneous, it could be that the pattern of contextual variation we observe may be different for Hispanics' choice between 'black' or various multiple race options, for example. This latter set of multiple race options is particularly important to examine because only since the 2000 Census have individuals been allowed to identify in multiple racial categories. Thus, while we stress the importance of Hispanic racial identifications either within or outside the existing racial categories, a plausible alternative hypothesis is that Hispanics may choose several existing racial categories in areas characterized by segregation and prejudice.

We empirically test this possibility in Table 1 where we use our IV approach to estimate the likelihood of choosing the 'other race' option compared to seven different existing racial classifications. The first three classifications are those that identified in only one racial category: 1) white alone, 2) Asian or Indian alone, 3) black alone. The remaining four classifications are individuals who self-identified with multiple existing racial categories: 4) "White-Other" (48% of all multiple race Hispanic identifications), 5) "White-Asian" (14%), and 6) "White-Black" (12%). No other category had more than 5 percent of the respondents, and were thus combined into a seventh "Multiple-Other" category. Though we see small differences across these racial categories, the pattern of results from this analysis is substantively unchanged from the main findings presented in the text of the paper—Hispanics are significantly more likely to mark 'some other race' compared to nearly every available racial option in contexts characterized by Hispanic segregation and prejudice, and for all comparisons the relationships are in the expected direction. It is important to note that this pattern holds even in the models where Hispanics chose 'other race' along with 'white' (column 4). This suggests that contexts of segregation and prejudice do not predict identifications to middle racial categories where classifications are combined or modified, but away from existing racial options entirely. These findings are consistent with our theoretical formulation that in contexts of heightened boundary salience Hispanics are less likely to self-identify with any of the available options within the U.S. racial categorizations. They also provide an important robustness check that our main models are not driven solely by one particular group comparison.

Alternative Estimation Procedures

A plausible alternative analytical procedure would be to estimate the simultaneous effects of segregation and anti-Hispanic hate crimes on choosing 'some other race' compared to the seven different existing categories shown in Table 1. To do this we estimate multinomial logistic regression models without the instrumental variable approach (IV commands are not supported in a multinomial logistic framework). These results are shown in Table 2. Because 'other race' is the reference category in both models, negative coefficients indicate respondents are less likely to identify with the existing racial classification comparison (e.g. white, Asian/Indian, black, etc.). Overall, the estimates are consistent with the findings presented in the text—net of individual-level controls Hispanics are more likely to identify as 'other race'

in contexts of segregation and prejudice compared to almost all existing racial options.

Table 1: IV Probit Estimates of Hispanic ‘Other Race’ Identification. Testing Robustness of Results with Different Groupings of Racial Categories (dependent variable = Other Race)

Models	Single Racial Classification			Multiple Racial Classifications			
	(1) White	(2) Asian/ Indian	(3) Black	(4) White– Some Other	(5) White– Black	(6) White– Asian	(7) Multiple– Other
Panel A: Segregation Models							
Hispanic / Non-Hispanic Dissimilarity <i>(Number of Governments as Instrument, 2002)</i>	0.031 [†] (0.008)	0.034 [†] (0.009)	0.008 [†] (0.009)	0.019 [†] (0.005)	0.006 (0.011)	0.019 [†] (0.009)	0.033 [†] (0.013)
Panel B: Hate Crime Models							
(ln) Anti-Hispanic Hate Crimes <i>(Level of Violence as Instrument, 2003-2005)</i>	0.054 [†] (0.021)	0.059 [†] (0.013)	0.007 (0.022)	0.029 [†] (0.014)	0.009 (0.029)	0.039* (0.021)	0.037 [†] (0.019)
N	86562	27847	27237	27435	26204	26291	26674

Notes: The dependent variable is ‘other race’ identification (1 = other race). There are a total of 14 IV probit models—estimating the segregation and hate crime effects for other race versus all 7 different racial classifications. Each model includes all individual and contextual level variables shown in Table 1. Significance tests are calculated from robust standard errors (reported in parentheses). * p < .10; † p < .05.

Table 2: Multinomial Logistic Regression Models of Hispanic Racial Self-Identification. Testing Robustness of Results with Different Groupings of Racial Categories (reference = Other Race)

Models	Single Racial Classification			Multiple Racial Classifications			
	(1) White	(2) Asian/ Indian	(3) Black	(4) White– Some Other	(5) White– Black	(6) White– Asian	(7) Multiple– Other
Model 1 (N = 93,432)							
Hispanic/Non- Hispanic Dissimilarity <i>(Number of Governments as Instrument, 2002)</i>	–0.019* (0.011)	–0.033 [†] (0.008)	–0.011 (0.014)	–0.017 [†] (0.007)	0.010 (0.018)	–0.033 [†] (0.010)	–0.037 [†] (0.013)
Model 2 (N = 93,432)							
(ln) Anti-Hispanic Hate Crimes <i>(Level of Violence as Instrument, 2003-2005)</i>	–0.163 [†] (0.030)	–0.071 [†] (0.032)*	–0.122* (0.063)	–0.087 [†] (0.025)	–0.040 (0.071)	–0.139 [†] (0.035)	–0.111 [†] (0.054)

Notes: The reference category is ‘other race’ identification. Contextual instruments are excluded because multinomial logistic estimators do not support IV analyses. Each model includes all individual level variables shown in Table 1. Significance tests are calculated from robust standard errors (reported in parentheses). * p < .10; † p < .05.

Table 3: Full IV Probit Models of Hispanic "Other Race" Identification.

		(1)	(2)
<i>Focal Measures</i>	Hispanic/Non-Hispanic D	0.031 [†]	
		(0.07)	
	(ln) Anti-Hispanic Hate Crimes		0.056 [†]
			(0.020)
<i>Ecological Variables</i>	Percent Hispanic	-0.006 [†]	-0.004 [†]
		(0.002)	(0.001)
	Percent Hispanic Poverty	0.002	0.006
		(0.009)	(0.06)
	Percent Unemployed	0.062*	0.032
		(0.035)	(0.020)
	Percent Manual Labor	-0.004	-0.002
		(0.009)	(0.007)
	Percent New Construction	0.008	-0.008
		(0.010)	(0.006)
	Northeast (reference)	-	-
	Midwest	-0.142	0.047
		(0.096)	(0.101)
	South	-0.115	-0.107
		(0.147)	(0.103)
	West	0.180 [†]	0.072
		(0.088)	(0.077)
<i>Individual Variables</i>			
	<i>Nativity</i>		
	Mexican (reference)	-	-
	Puerto Rican	-0.119	-0.062
		(0.056)*	(0.045)
	Cuban	-1.072	-0.898 [†]
		(0.093) [†]	(0.067)
	Other Hispanic	-0.044	-0.008
		(0.066)	(0.046)
	Native Born (reference)	-	-
Foreign Born	0.012	0.042*	
	(0.026)	(0.022)	
<i>Socioeconomic</i>	Less than H.S. (reference)	-	-
	H.S. Graduate	-0.078 [†]	-0.078 [†]
		(0.018)	(0.017)
	Some College	-0.148 [†]	-0.154 [†]
		(0.018)	(0.016)
	College Graduate	-0.431 [†]	-0.436 [†]
		(0.020)	(0.018)
	Below Poverty (reference)	-	-
	100-199% Poverty Status	0.003	0.005
		(0.016)	(0.016)
200-299% Poverty Status	0.050 [†]	0.050 [†]	
	(0.016)	(0.016)	
> 300% Poverty Status	-0.001	-0.003	
	(0.023)	(0.022)	
<i>Acculturation</i>	Speaks English at Home	0.358 [†]	0.377 [†]
		(0.035)	(0.038)
<i>Other Controls</i>	Married	-0.027*	-0.033 [†]
		(0.016)	(0.015)
	Age	-0.010 [†]	-0.010 [†]
		(0.001)	(0.001)
	Female (reference)	-	-
	Male	0.042 [†]	0.041 [†]
		(0.014)	(0.014)
	Non-Central City (reference)	-	-
Central City	0.142 [†]	0.122 [†]	
	(0.048)	(0.038)	
	N	93,432	93,432

Notes: Models are identical to models 4 and 5 in Table 2. Significance tests are calculated from robust standard errors (reported in parentheses). * p < .10; † p < .05.