Article

Colored Perceptions: Racially Distinctive Names and Assessments of Skin Color

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Abstract

Scholars are increasingly employing skin color measures to investigate racial stratification beyond the dimensions of self- or other-classification. Current understandings of the relationship between phenotypic traits, like skin color, and racial classification are incomplete. Scholars agree that perceptions of phenotypic traits shape how people classify others; it remains to be seen, however, whether racial classification in turn shapes people's perceptions of phenotypic traits. The present study is based on an original survey experiment that tests whether assessments of others' skin color are affected by a subtle racial cue, a name. Results indicate that skin color ratings are affected by the presence of a racially distinctive name: A significant share of people will rate the same face darker when that face is assigned a distinctively Hispanic name as opposed to a non-Hispanic name. In addition, ratings of male faces are more sensitive to racially distinctive names. The findings bear important lessons for our understanding of the social construction of race and its role in producing inequalities.

Keywords

race, ethnicity, classification, skin color, Latino/as

In recent years, skin color measures have appeared on several major surveys. These measures accomplish important goals, including facilitating cross-country comparisons and exposing heterogeneity between people who are formally classified as members of the same racial group (Bailey, Saperstein, & Penner, 2014; Flores & Telles, 2012; Frank, Redstone Akresh, & Lu, 2010; Keith & Herring, 1991; Monk 2014, 2015; Murguia & Telles, 1996; Telles & Murguia, 1990). By looking beyond self- or

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interviewer-classification, skin color measures also answer Roth's (2010) call to examine multiple dimensions of race.

The growing popularity of these measures demands that we understand the relationship between phenotypic traits, like skin color, and other dimensions of race, like external classification. Accounts of the social construction of race agree that people use phenotypic traits imbued with social meaning to racially classify themselves and others. The present study asks whether this process also happens in reverse; in other words, do racial classification cues also affect the perception of phenotypic traits? Scholars of race have long argued that a person's characteristics affect how others racially classify that person. Whether a person's characteristics also affect how others perceive that person's phenotype, and in particular his/her skin color, remains to be demonstrated.

This study investigates the impact of racial cues on perceptions of skin color using an original online survey experiment carried out with over 500 U.S. adults in 2014. The purpose of the experiment was to evaluate whether the presence of a racially[1] distinctive name affects skin color ratings *of the same face*. Subjects viewed and rated pictures of five male and five female faces using an 11-tone skin color palette. Each face was paired with either a distinctively Hispanic or non-Hispanic name, from a set of pretested names.

The results indicate that assessments of a person's skin color are significantly affected by the racial background associated with that person's name. About one quarter of subjects rate the same face one skin tone darker when that face is linked to a Hispanic name as opposed to a non-Hispanic name. The size of this effect varies by the gender of the target face; specifically, ratings of male faces are more sensitive to racially distinctive names than are ratings of female faces.

Our findings suggest that racial classification cues affect how people perceive phenotypic traits. These findings lead us to rethink the role of perception in the process of social construction. People do not simply utilize phenotypic traits to classify themselves and others; these classifications in turn affect their perception of seemingly objective traits. In addition, these findings bear important lessons for the measurement of skin color and for the estimation of racial inequality. In the Conclusion, we reflect on the continued use of skin color measures.

Background and Theory

The Rise of Skin Color Measures

Beginning in the 1970s, skin color measures have been used to study racial discrimination and stratification. The first national surveys to incorporate such measures were the 1979 Chicano Survey and the 1979 National Survey of Black Americans.[2] These measures relied on 5-point, verbal scales ranging from *very dark* to *very light*. Studies based on these surveys found that darker skinned Blacks and Mexican Americans had lower earnings and education than their lighter skinned counterparts, even controlling for parental background (Keith & Herring, 1991; Murguia & Telles, 1996; Telles & Murguia, 1990, 1992).

Since the 2000s, several surveys have incorporated skin color measures linked to visual aids or color palettes that provide interviewers with visual benchmarks of different skin tones. For example, the skin color item on the New Immigrant Survey (2003) is linked to a chart with 10 skin color categories, each one represented by a hand of a different color. The following major surveys have incorporated similar skin color measures linked to visual aids/palettes: The Panel Study of American Religion and Ethnicity (2006), the 1997-cohort National Longitudinal Study of Youth (follow-up rounds 12 and 13, 2008-2009, 2009-2010), the American National Election Survey (2012), the General Social Survey (2012), and the Fragile Families and Child Wellbeing Study (15-year follow-up, data collection ongoing).[3]

Recently, two multinational surveys have also adopted skin color palettes, giving scholars unprecedented access to this type of data for international comparisons. The Americas Barometer (2010-present) and the Project on Ethnicity and Race in Latin America (PERLA; 2010) have collected data in 4 and 23 Latin American countries, respectively. Both surveys use an instrument developed by Edwards Telles and the PERLA team (2014), featuring 11 skin colors.[4]

The Significance and Limitations of Skin Color Measures

The popularity of skin color measures follows calls to capture the multiple dimensions of race (Roth, 2010; see also Zuberi, 2001). In recent years, scholars have moved toward an understanding of race as a multidimensional phenomenon that encompasses how people see themselves, how they are seen by others, and phenotype, among other factors (Roth, 2010). On the ground, these dimensions do not always overlap. For example, self-identification often differs from observers' classification (Campbell & Troyer, 2007, 2011; Cheng & Powell, 2011; Garcia, 2013; Roth, 2010; Vargas & Stainback, 2016). Most surveys rely exclusively on self-identification measures, challenging researchers' ability to study discrimination for those, like Hispanics and multiracial individuals, whose self-identification does not match others' classification (Roth, 2010). The presence of multiple measures of race on surveys allows researchers to better understand the different processes through which race affects life outcomes.

The growing popularity of skin color measures stems in part from their ability to give us greater insight into appearance-based discrimination in labor markets and other social arenas. Telles and the PERLA team (2014), for example, find that skin color serves as a discriminating factor even among people who identify with the same racial category. The ability to infer appearance-based discrimination from associations between skin color and socioeconomic markers, however, hinges on the assumption that interviewers do not translate socioeconomic markers into their ratings of skin color. However, even scholars who disagree on the ideal implementation and interpretation of skin color measures concur that these measures are likely subject to social and relational influences (Flores & Telles, 2010; Telles & PERLA, 2014; Villarreal, 2012).

Previous discussions of social influences on measures of race have focused on two issues: interviewer effects and money whitening. Regarding the first, research has found that interviewers assess other's skin color in a relative and self-referential

manner. Hill (2002), for example, shows that White interviewers rated the skin color[5] of Black respondents darker than did Black interviewers, while Black interviewers rated the skin color of White respondents lighter than did White interviewers. Interviewers also reported more skin color variation within their own racial group, consistent with the illusion of out-group homogeneity identified by social psychologists (Mullen & Hu, 1989).

The second line of discussion deals with the relationship between external classification and a person's characteristics, rather than those of observers. Central to this discussion is the concept of "money whitening," which refers to the process by which affluent individuals are more likely to self-identify and be classified in a "whiter" category. In Latin America, where this concept originated (Harris, 1964), there is mixed empirical support for money whitening (Garcia, 2013; Telles & Flores, 2013; Telles & Paschel, 2014). In the United States, there is evidence that men in professional attire are more likely to be categorized as White while people who experience socioeconomic decline are more likely to be categorized as Black (Freeman, Penner, Saperstein, Scheutz, & Ambady, 2011; Saperstein & Penner, 2012).

More recently, scholars have argued that socioeconomic status also affects perceptions of phenotypic traits like skin color, not just classification into racial categories (Flores & Telles, 2012; Villarreal, 2012). Again, phenotype and racial classification, though related, are not synonymous (Roth, 2010), and even members of the same racial group may face different opportunities and outcomes as the result of appearance-based discrimination (Telles & PERLA, 2014). To our knowledge, Flores and Telles (2012) present the only published, empirical model predicting skin color using interviewee characteristics, in particular household income as a measure of status. Their analysis examines a skin color measure based on a verbal scale where interviewers assigned individuals to color categories (e.g., white, light- and dark-brown) without reference to a visual aid or palette. Flores and Telles (2012) find that color categories are susceptible to the effect of interviewees' social class, though Villarreal (2012) speculates that skin color measures linked to palettes are also susceptible (see also Sulmont & Callirgos, 2014). This raises an important question that has yet to be empirically examined: Are color ratings affected by the characteristics of the person being rated, even when the ratings are tied to a visual aid/palette? The present study answers this question, and in so doing, contributes to our understanding of the impact of social and relational factors on perceptions of phenotype.

Answering this question requires a different methodological approach than the one used in prior studies. In general, studies treat interviewer subjectivity as something to be adjusted in statistical models after data have been collected.[6] As Villarreal (2012) suggests, scholars should "be aware of and adjust for systemic tendencies in individuals' perceptions of others' skin tone in our analysis of social stratification" (p. 501). However, skin color also affects individuals' outcomes. Crudely stated, skin color affects outcomes affect skin color. Given the strong threat of reverse causality, the causal relationship between skin color and social and contextual factors is impossible to disentangle using observational survey data and standard regression techniques.

Accordingly, we carried out an experiment designed to investigate whether assessments of a person's skin color are affected by the presence of a racial cue, specifically a name. In so doing, we build on previous research that shows that perceptions of skin color are influenced by broad set of social and relational influences that operate simultaneously in the course of interpersonal interactions. As Sulmont and Callirgos (2014) write:

> "Chromatic" classification was made in a setting of social interaction . . . a setting with certain keys or "clues"; interviewers may have "translated" some "visible" indicators other than physical appearance, such as the respondent's neighborhood or residence, the respondent's clothes, or way of speaking, to "skin color." (p. 163)

By exploring the impact of a racial cue on perceptions of skin color, our study also speaks to theories of social construction, which tacitly treat perception as a precursor to classification.

Constructing Race: The Role of Perception

Current understandings of the social construction of race characterize perception as an "input" in the process of classification. The construction of race involves attaching social meanings to perceived physical differences so that groups of people come to be regarded as biologically distinct, though these divisions have no scientific basis (Cornell & Hartmann, 2007; Omi & Winant, 1994; Smedley, 1999). Scholars describe physical characteristics, such as skin color, as arbitrary markers of race. They have documented how people "perform" race by displaying, and sometimes manipulating, physical and social characteristics to signal membership in specific groups, and how in turn, these performances affect how others perceive their race (Candelario, 2007; Roth, 2012).

However, scholars have largely neglected how observers' perceptions of phenotype are affected by ingrained categorization schemas. For example, Zuberi (2001) in his far-reaching critique of the collection, analysis, and interpretation of racial classification measures, nevertheless fails to problematize the ability to discern or measure physical traits:

> Social statisticians have long used race as a variable in their analysis. I am not talking here about the situation in which we are asked to give a detailed description that includes the color of a person's skin. In this situation skin color is being used like other biological traits such as eye color and hair texture. . . . Used in this way skin color is a distinguishing fact about a designated person. (p. 80)

Another example comes from Omi and Winant (1994), who note that "although the concept of race invokes biologically based human characteristics (so-called 'phenotypes'), selection of these particular human features for purposes of racial signification is always and necessarily a social and historical process" (p. 55). These examples suggest that while scholars are aware that *the choice to attend* to certain phenotypic markers is arbitrary and fluid, the *perception* of these markers is implicitly theorized as an input in the process of constructing race.

We suspect that the perception of phenotype is not just a *precursor* to the social construction of race, but, at least in part, a *product* of this process. Racial constructs affect our perception of seemingly objective traits, such as skin color. Our suspicion is rooted in a growing body of psychological research that shows (1) stereotypical beliefs affect perceptions of faces and (2) racial categorization is not simply a reflection of physical appearance (Eberhardt, 2005; Eberhardt, Goff, Purdie, & Davies, 2004; Quadflieg & Macrae, 2011). For example, people who are exposed to crime-related words perceive Black faces as darker skinned and with more stereotypical features (Eberhardt et al., 2004). In addition, people perceive faces with Black hairstyles as being darker and having wider features than identical faces with Hispanic hairstyles (MacLin & Malpass, 2001). As Eberhardt et al. (2004) conclude, visual processes reinforce stereotypic associations, and "the associations themselves are the consequences of widely shared cultural understandings and social patterns" (p. 891).

Our line of work complements the "cognitive turn" in the study of race and ethnicity, as identified by Brubaker, Loveman, and Stamatov (2004). Brubaker et al. describe race, ethnicity, and nation as "ways of seeing" in the *figurative* sense. They argue that ethnicity, race, and nation "are not things in the world, but perspectives on the world, not ontological but epistemological realities" (p. 45). Ethnicity, race, and nation serve as templates for action, allowing people to identify themselves and others and to make sense of their interests and their problems. We test the limits of the metaphor of race as a "way of seeing" by examining if racial constructs also influence what we see in the *literal* sense, "coloring" our perception of seemingly objective traits like phenotype.

Our Approach

The present study deploys experimental methods to systematically test how one cue, a racially distinctive name, affects how observers rate someone's skin color. By using pictures of faces, we remove the influence of interview setting on skin color ratings. Furthermore, we collect data on how different observers rate the skin color of the same face. Finally, our experimental approach makes it possible to identify a unidirectional, causal effect *of* categorization cues *on* skin color ratings. Our results have implications for understanding the microprocesses of external perception that underlie practices of profiling and discrimination and the social construction of race (Saperstein, Penner, & Light, 2013).

Research Questions and Hypotheses

How do racial cues shape assessments of skin color? More specifically, does a racially ambiguous face receive a different skin color rating when it is assigned a distinctively Hispanic name versus a distinctively non-Hispanic name? We focus on Hispanics because this group exhibits a wide range of phenotypic characteristics and because observers rely more on skin color to categorize ambiguous faces (Willenbockel, Fiset, & Tanaka, 2011). Furthermore, Hispanics, particularly those who are darker skinned, are racialized in the United States (N. Lopez, 2004; Roth, 2012; Telles & Ortiz, 2008). Hispanics are thought to have medium skin tones, medium lips, and heavy body types

(Feliciano, 2016). Accordingly, we predict that for a given face a distinctively Hispanic name will yield a significantly higher skin color rating than a distinctively non-Hispanic name.

In addition, we examine gender differences in the perception of skin color. Previous research using skin color palettes has identified differences between men and women both in terms of skin color and in skin color's consequences (Bailey & Telles, 2006; Keith & Herring, 1991; Telles & Ortiz, 2012; Villarreal, 2010). Constructed notions of femininity and masculinity influence how people present themselves and how their skin color is perceived. Urrea Giraldo, López, Augusto, and Viveros Vigoya (2014) argue that "hegemonic norms of femininity can have a whitening effect" (p. 99). Some women may change their appearance to conform to European notions of beauty. In turn, interviewers may "whiten" female subjects to avoid undercutting subjects' claims to femininity (Urrea Giraldo et al., 2014). Thus, we predict that a female face will receive a lighter skin color rating than a male face.

Data and Methods

The following analyses are based on an original survey experiment conducted between October and December 2014.[7] The survey was distributed to an online convenience sample through Amazon's Mechanical Turk (MTurk) website. Overall, 560 unique subjects[8] participated in the study; the sample was restricted to adults living in the United States.

Each participant viewed and rated images of five female and five male faces using a skin color palette below the image, on the same screen. Each face was randomly assigned a gender-appropriate name from a list of 20 distinctively Hispanic and non-Hispanic names. For example, the same image of a woman appeared to some subjects with a distinctively non-Hispanic name, such as "Margaret," and to others with a distinctively Hispanic name, such as "Margarita." After rating skin color, and as a manipulation check, subjects were asked to guess the "most likely" racial background of the face. Finally, subjects answered a series of demographic questions covering age, gender, race, education, income, U.S. region, and self-rated skin color; the wording of these questions is included in Appendix A. Next, we detail the myriad considerations that went into designing and selecting the palette, images, and names.

Skin Color Palette

Our skin color palette is based on a foundation skin color chart developed by L'Oréal researchers using a skin measurement instrument and interviews with women worldwide. The original L'Oréal chart includes 66 shades that vary along two dimensions: light to dark and pink to yellow undertones. We selected 11 tones ranging from light to dark with similar, neutral undertones. This 11-tone palette closely resembles the one developed and implemented by Telles and the PERLA team (2014) but includes a wider range of lighter skin tones. Results from PERLA indicate that only 17.67% of people received a skin color rating above six, suggesting a need for finer grained distinctions on the lighter end of the spectrum. We believe our palette is better suited to the task of rating people who are

ambiguously Hispanic or non-Hispanic White. The skin color palette is included in Appendix A (Figure A1).

Racially Ambiguous Faces

Our objective was to identify faces that were "racially ambiguous," meaning that they could plausibly be linked to a distinctively Hispanic *or* a distinctively non-Hispanic name. To do this, we drew 68 images from the publicly available face database of the Artificial Intelligence Laboratory of the Faculdade de Engenharia Industrial in Sao Paolo, Brazil. We pretested the faces using an experimental survey distributed to a convenience sample through MTurk between August and September 2014. Two-hundred nine unique subjects participated in the pretest; again, the sample was restricted to U.S. adults. Each subject viewed and rated 10 faces in terms of perceived race, age, attractiveness, and class; each face was rated by approximately 30 subjects. Most notably, subjects were asked to guess—in the absence of additional information—whether the person depicted in the image was "most likely" White, Black/African American, Hispanic/Latino, or Asian or Pacific Islander. We deployed the following "ambiguity criterion" to select faces: for a given image, the proportion of subjects who selected "most likely White" had to be statistically indistinguishable from the proportion who selected "most likely Hispanic/Latino." Eight female faces and five male faces met this criterion. We omitted three female images that were outliers in terms of perceived attractiveness, class, or both. Facsimiles of the faces are reproduced in Appendix A (Figure A2).

Racially Unambiguous Names

Numerous experimental studies use racially distinctive names to manipulate race (e.g., Bertrand, & Mullainathan, 2004; Pedulla, in press). Due to mounting social desirability pressures, racial cues must be both indirect and deniable to be effective. Names are useful tools for research on prejudice and discrimination, because they are both subtle and unambiguous signals of race. Distinctive names, however, often signal more than just race; for example, they may also signal socioeconomic background. Our goal was to identify names that were unambiguously associated with Hispanic background but not strongly associated with class. Researchers typically do this by analyzing vital statistics data and choosing the names of babies whose mothers have comparable levels of education (see Bertrand & Mullainathan, 2004). However, names that are objectively associated with specific class backgrounds are not necessarily perceived as such (Abascal, 2015). We therefore took a different approach to selecting names: we pretested 64 names via an MTurk survey experiment conducted in September 2014. Sixty-two unique subjects participated in the pretests, all of them U.S. adults. Each subject rated 32 names in terms of perceived race and class, such that each name was rated by approximately 30 subjects.

Ultimately, the task of disentangling perceived race from perceived class proved impossible: With no exceptions, distinctively Hispanic names were associated with lower class backgrounds than distinctively non-Hispanic names.[9] We thus selected the 20 most racially distinctive names[10]; consequently, we cannot determine whether the effects we observe are due to the perceived race or class of the pictured face. Though

we did not test this, we suspect that Hispanic names were also associated with perceived immigrant status or "foreignness." Though this limits our ability to determine whether perceived race, class, or immigrant background are driving the observed effects, the names accurately reflect the entanglement of these statuses in the real world. The men's names include John, Juan, Peter, Pedro, Richard, Ricardo, Paul, Pablo, Joe, and Jose. The women's names include Catherine, Catalina, Joann, Juana, Margaret, Margarita, Charlotte, Carlota, Danielle, and Daniela.[11]

A manipulation check from the final experiment indicates that subjects "correctly" classified each face in 64% of cases. In other words, they reported that the person was "most likely" Hispanic/Latino when the picture was linked to a Hispanic name and "most likely" White when the picture was linked to a non-Hispanic name. Predictably, the effects reported in the following pages are more pronounced when we limit the sample to those subjects who "correctly" classified the person in the picture.[12]

Randomization and Descriptive Statistics

Random assignment achieved a fairly uniform distribution of subjects across conditions, with 2,783 unique ratings of faces assigned Hispanic names and 2,817 unique ratings of faces assigned non-Hispanic names. Because each subject rated pictures with both Hispanic and non-Hispanic names, subject characteristics were necessarily balanced across experimental conditions. Table 1 presents descriptive statistics for those 538 cases with no nonmissing values. These estimates are consistent with previous descriptions of the MTurk population, which disproportionately comprises highly educated young people (Paolacci, Chandler, & Ipeirotis, 2010). Unless the effect of a racially distinctive name is moderated by—or interacts with—subject age or class, then the average treatment effect represents an unbiased estimate of the true causal effect. In supplementary analyses, we find no evidence of such interactions.

Results

Variance in Skin Color Ratings

Our data present a unique opportunity to examine the consistency in skin color ratings of one face, across different raters. If skin color measures reliably capture *actual* skin color, different subjects should generally agree on the appropriate rating for a given face. Instead, we find that skin color ratings vary widely across subjects: the average skin color rating for a given face is 3.576, but 68% of the observations fall between 2.215 and 4.937 (Table A1).[13] If skin color ratings for the same face vary across subjects, what explains ratings? The following analyses shed light on this question.

The Effect of a Distinctively Hispanic Name

Each picture was viewed by each subject once. Subjects could take as long as they needed to view and rate each picture; on average, subjects spent nearly 1 minute per picture. In about half of the cases, the picture was assigned a distinctively Hispanic

Table 1. Descriptive Statistics for Subjects.

	Mean	*SD*
Skin color [1, 11]	3.002	1.791
Age (years)	29.762	9.329
Female [0, 1]	0.375	0.485
White, non-Hispanic [0, 1]	0.704	0.457
Black, non-Hispanic [0, 1]	0.065	0.247
Hispanic [0, 1]	0.071	0.256
Asian, non-Hispanic [0, 1]	0.143	0.351
Education [1, 6]	4.130	1.245
Household income ($)	51515	38892
U.S.-born [0, 1]	0.948	0.222
Northeast [0, 1]	0.223	0.417
Midwest [0, 1]	0.182	0.386
South [0, 1]	0.320	0.467
West [0, 1]	0.275	0.447
N (subjects)	538	

name; in the other half, the picture was assigned a distinctively non-Hispanic name. Figure 1 presents the mean skin color rating for all images, female images, and male images when the images were assigned a non-Hispanic name versus a Hispanic name.

Three patterns come into focus. *First*, for the pooled sample of male and female images, names are significantly associated with skin color ratings. Overall, images with a non-Hispanic name receive a mean skin color rating of 3.447 while images with a Hispanic name receive a mean skin color rating of 3.705 ($p < .001$)[14]; seen another way, about 25.6% of respondents, over one quarter, rate the same face one skin tone darker when the face is linked to a Hispanic name as opposed to a non-Hispanic name. *Second*, male images are rated significantly darker than female images (3.988 vs. 3.165; $p < .001$).

Third and finally, male faces appear to be more sensitive to the effect of a racially distinctive name. The mean skin color rating of female faces assigned non-Hispanic names is 3.086. The mean skin color rating of the same faces assigned Hispanic names is 3.241, and this difference is significant ($p < .01$). This indicates that 15.5% of subjects, or about one in six, rate the same female face one skin tone darker when that face is linked to a Hispanic name as opposed to a non-Hispanic name. By contrast, the mean skin color rating of male faces assigned non-Hispanic names is 3.803, and the mean skin color rating of the same faces assigned Hispanic names is 4.173. This difference is highly significant ($p < .001$) and indicates that 37.0% of subjects, or about one in three, rate the same male face one skin tone darker when that face is linked to a Hispanic name as opposed to a non-Hispanic name. In other words, ratings of male faces vary more than ratings of female faces depending on the name attached to the face; the interaction between name and image gender is significant ($p < .01$).

To produce synthetic estimates of these effects and to assess the relationship between subject characteristics and skin color ratings, we deploy a multivariate, multilevel

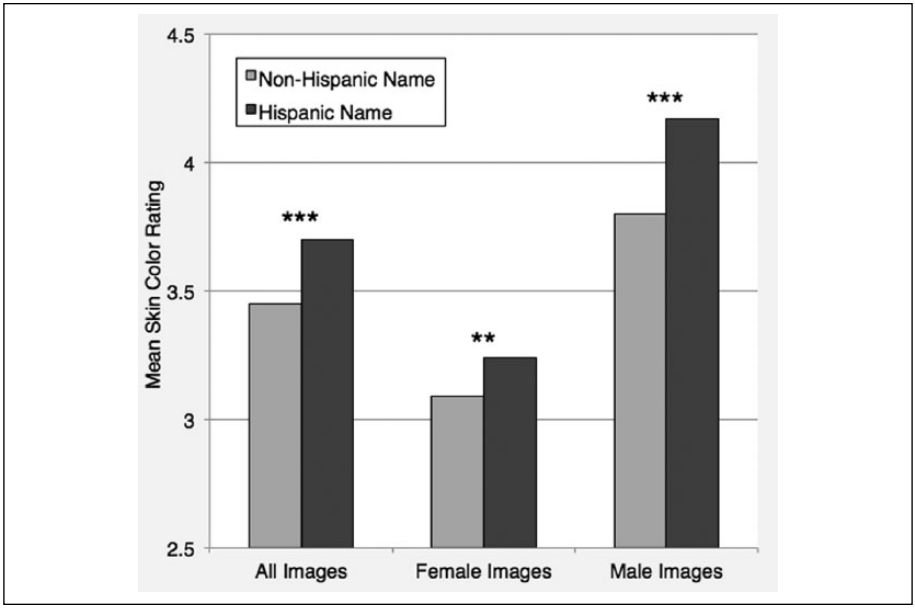

Figure 1. Mean skin color rating by image gender and name.
$^{+}p < .10$. $^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$ (two-sided).
Note. For this table, the *p* values and corresponding *t* scores were calculated using simple linear regressions with standard errors adjusted for clustering at the subject level. An unpaired *t* test would not have been appropriate since each subject rated more than one picture.

regression predicting skin color ratings (Table 2). Fixed effects for the images and name pairs account for unobserved differences between names and faces. In addition to controlling for specific subject characteristics, including self-rated skin color, age, gender, race, education, income,[15] birthplace, and U.S. region of residence, the models also include a random effects parameter that captures unmodeled heterogeneity across subjects.[16] Finally, we interact Hispanic names with face gender to assess whether the effect of a Hispanic name differs across male and female faces.

Holding subject differences constant, male faces receive darker skin color ratings than female faces: female faces receive an average rating of 2.819, while male faces receive an average rating of 3.627 ($p < .001$).[17] There are two possible explanations for the male–female gap. According to the first, women present themselves as lighter or are perceived and/or rated lighter by others (Urrea Giraldo et al., 2014). According to the second, the criteria by which men and women are judged to be racially ambiguous differ. Recall that the faces in the final experiment were judged to be ambiguous by pretest subjects; perhaps to be judged ambiguous, female faces had to be lighter than male faces. To assess this, we ran a posttest among 203 new subjects who rated the faces—without names—in terms of skin color and race. For female faces, we find that a skin color rating of 4.57 is associated with a 50% probability of being classified as Hispanic (vs. White); for male faces, this threshold is 4.82, with substantial overlap in the confidence intervals.

Table 2. Predictors of Skin Color Rating.

	B	*SE*
Hispanic name	0.337***	0.046
Woman's face	−0.808***	0.098
Hispanic name × Woman's face	−0.160*	0.064
Subject characteristics		
Skin color	0.105***	0.026
Age (years)	−0.011**	0.004
Female	−0.044	0.074
White, non-Hispanic (ref.)		
Black, Non-Hispanic	−0.659***	0.184
Hispanic	−0.342*	0.147
Asian or "other," non-Hispanic	−0.444***	0.113
Household income ($1000s)	−0.025	0.030
Education	0.002**	0.001
Northeast (ref.)		
Midwest	−0.220	0.169
South	0.034	0.111
West	−0.016	0.097
Constant	3.627***	0.402
Image fixed effects	✓	
Name fixed effects	✓	
N (ratings)	5,380	
Log likelihood	−8744.815	
Intraclass correlation	0.137	

+$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$ (two-sided).

In other words, the skin color criteria by which faces are classified as "most likely" Hispanic or White do not differ by gender. This finding lends support for the first explanation: women are either lighter or perceived/assessed lighter by others.

The multivariate results confirm that the effect of a Hispanic name is more pronounced for male faces. Specifically, when assigned a Hispanic—as opposed to a non-Hispanic—name, the same male face receives a 0.337-point darker average skin color rating. A female face, on the other hand, receives a 0.177-point darker average skin color rating. Interestingly, subject's gender is not associated with skin color ratings. Subjects' self-rated skin color is significantly, positively associated with their skin color ratings of others, holding other differences—including race—constant. In addition, non-Hispanic Blacks, Hispanics, and non-Hispanic Asians and self-identified "Others" give significantly lighter ratings than do non-Hispanic Whites. Education is positively and significantly associated with skin color ratings, though the difference is substantively small; a one-point increase in educational attainment (on a 6-point scale) is associated with a 0.002-point darker skin color rating. Finally, the intraclass correlation—derived from the random effects parameter—suggests that skin color ratings vary across

subjects. For the same subject, skin color ratings of different faces are positively correlated ($r = 0.137$).

Who Rates Faces Darker?

The multivariate regression (Table 2) confirms that approximately one in four subjects rate the same face one skin tone darker when that face is assigned a Hispanic name as opposed to a non-Hispanic name. Who are the subjects who assign darker ratings to faces with Hispanic names? Because individual subjects viewed and rated each face only once, we do not know how any one subject would have rated the same face had it been assigned a different name.[18] Instead, our estimate represents an average treatment effect based on a constructed, aggregate counterfactual.

To get a sense of how subjects would have rated the same face with a different name, we match each subject in the Hispanic condition to a similar subject in the non-Hispanic condition who rated the same face. Specifically, we deploy one-to-one, nearest-neighbor propensity score matching with exact matching by image. We assume that, had each subject also viewed the same face linked to a non-Hispanic name, she/he would have selected the same skin color as his/her matched pair. We then model the probability of selecting a darker skin tone than expected using a multivariate, multilevel logistic regression (Table A1). The results indicate that subjects with darker self-rated skin tones and those with higher incomes are significantly more likely to assign a darker skin tone to a face linked to a Hispanic name. Non-Hispanic Blacks and Hispanics are significantly less likely than non-Hispanic Whites to assign a darker skin tone to a face linked to a Hispanic name. Similarly, subjects are significantly less likely to assign a darker skin tone to a female face than a male face linked to a Hispanic name; this is consistent with our finding that ratings of male faces are more sensitive to the effect of a racially distinctive name.

Interactions With Race, Gender, and Skin Color

Having established that racially distinctive names have different effects on ratings of female versus male faces (Tables 1 and 2), it makes sense to ask whether this effect in turn differs across female versus male subjects. In supplementary analyses, we add terms to the regression to capture possible interactions between a Hispanic name, a female image, and a female subject. The terms are not significant, nor do they alter the main effect of a Hispanic name. In other words, we do not find evidence that the effect of a Hispanic name on male versus female faces differs across male and female subjects.

It is also possible that the effect of a distinctively Hispanic name differs by subject's race. Along similar lines, we add terms to capture possible interactions between a Hispanic name, a female image, and (1) a non-Hispanic White subject, (2) a non-Hispanic Black subject, and (3) a Hispanic subject. In most cases the terms are not significant and do not alter the main effect of a distinctively Hispanic name. The one exception is the interaction term for a Hispanic subject rating a Hispanic image; Hispanic subjects give lighter skin color ratings to images with distinctively Hispanic names than do non-Hispanic White subjects, though this difference is only marginally

significant ($p < .094$). Finally, we explore possible interactions with subject's self-rated skin color. Once more, the terms are not significant; in short, we do not find evidence that the effects of the face's gender or of a Hispanic name vary by subjects' skin color.

Discussion

Our results indicate that racial cues influence seemingly objective assessments of phenotypic traits, like skin color. Observers rate a person's face darker when that person's name is distinctively Hispanic versus non-Hispanic, and this effect is more pronounced for male than female faces. Constructed and stereotypic notions of femininity and masculinity likely explain why Hispanic women are viewed as lighter skinned than men. Beauty—in particular a European phenotype—has been important for women as a form of "capital" that yields economic advantages (Hunter, 2002). Hegemonic norms of femininity may encourage women to present themselves as "whiter" by changing their appearance through makeup, skin and hair bleaching, contact lenses, or even surgery. In turn, observers see or rate them as "whiter" out of perceptual bias or in an attempt to bolster their claims to femininity[19] (Urrea Giraldo et al., 2014).

A complementary explanation is that observers perceive Hispanic men as darker because Latinos are stereotyped as criminal (N. Lopez, 2004). Previous experimental research has shown that crime primes lead observers to rate Black faces as darker skinned and that thinking about crime leads people to think about Blacks (Eberhardt et al., 2004). We believe the association between Latino masculinity and crime may reinforce stereotypical beliefs about Latinos, including the idea that they are darker.

The central limitation of the present study lies in our inability to disentangle the effects of perceived race from those of class and/or immigrant status. We simply were not able to identify Hispanic and non-Hispanic names that were associated with comparable class backgrounds; we suspect that we would have run into similar difficulties identifying Hispanic names that were not associated with immigration. On the one hand, these names faithfully capture the intersection of race, class, and nativity in the real world; as long as U.S. Hispanics are relatively more likely to be, or be viewed as, poor and foreign-born, then our findings accurately represent the causal effect of a distinctively Hispanic name. Whether this name affects skin color ratings *because* of its association with Hispanic background—as opposed to poverty or immigrant status—merits further investigation.

The effects we identified are likely pronounced in face-to-face interviews because interviewers can see more than just the faces of interviewees. In addition, the physical distance separating interviewers from interviewees is likely larger than the distance separating our subjects from their computer screens. Our study, therefore, represents a fairly stringent test of the effect of racial cues on assessments of skin color: the skin color palette appeared less than one inch from the target face on the same screen and subjects only received one racial cue, a name. By contrast, in a face-to-face interaction, respondents are several feet away from interviewers and interviewers are instructed to record skin color without showing respondents the

palette. Interviewer ratings, in short, often rely on memory of the instrument rather than on matching faces to it. Furthermore, in a face-to-face interaction, individuals are exposed to a broader set of social cues that influence their perception of skin color, such as the respondents' attire (Freeman et al., 2011), hairstyle (MacLin & Malpass, 2001), accent, the appearance of their home, and the demographic composition of their neighborhood.

Conclusion

Our findings carry an important lesson for how we interpret the relationship between skin color and socioeconomic inequality. A key concern raised by earlier work is the extent to which skin color measures are influenced by cues associated with respondents' socioeconomic status, as this can affect estimates of inequality (Flores & Telles, 2012; Villarreal, 2012). If interviewers assign darker skin colors to respondents they perceive as poorer, then skin color measures may overestimate socioeconomic inequality. In addition, skin color measures have been used to infer appearance-based discrimination in labor markets (Bailey et al., 2014; Keith & Herring, 1991; Telles & Murguia, 1990). The general explanation for these findings is that employers prefer lighter skinned workers because light skin signals positive qualities associated with whiteness. However, some people may also present themselves in a way that deemphasizes racial markers, for example, by avoiding certain names and hairstyles when applying for jobs.[20] Lighter skinned or wealthier individuals may have more resources to manipulate their appearance. Therefore, some individuals may accrue advantages not only because others value their lighter skin but also because they possess the ability to pursue advantageous self-presentation strategies.

To be clear, we are not advocating that researchers abandon skin color measures, any more than other sociologists would advocate dropping racial self-identification items because these, too, are affected by the characteristics of both interviewers and interviewees. Skin color measures have already proved valuable tools for studying the multidimensionality of race and uncovering inequalities along multiple axes. Nor do we believe "more objective" measures, such as spectrophotometer readings, are the answer. Spectrophotometers raise their own set of questions, including *where* and *when* to take readings. A face? An underarm? In the summer or winter? These questions, which are earnestly discussed by the specialists who use these instruments (e.g., I. Lopez, 2008), remind us that any measure that involves human discretion is necessarily subject to social and relational influence. Moving forward, we should ask ourselves whether the goal is (or could ever be) to capture "objective" skin color or whether the goal is to understand how society's symbolic and material rewards are distributed on the basis of traits, like skin color, *as those traits are displayed and interpreted in the course of interpersonal interactions*.

More broadly, our findings challenge the assumption that sensory perception is an objective precursor to the process of classification. Racial classification not

only draws on physical cues, it also alters our perception of these cues. In other words, perception is not simply a "tool" in the service of social construction; it is itself transformed through this process as the objects of our perception acquire latent social meaning. Our argument is buttressed by psychological research that shows social categories and stereotypes influence visual perception (Eberhardt et al., 2004; Quadflieg & Macrae, 2011). As Eberhardt et al. (2004) argue, "Visual practices may not simply reflect race-based associations; visual practices may work to sustain these associations as well." (p. 891). Hence, when concepts or ideas become associated with racial groups, they alter what we "see" to strengthen these associations.

An updated theory of the social construction of race must take into account how race is a way of seeing, both figuratively *and* literally. In a seminal article, Brubaker et al. (2004), described race as a "way of seeing" in the figurative sense (p. 43). Our contribution lies in demonstrating that racial constructs also influence what we see in the literal sense, and even seemingly objective perceptions of the world are "colored" by the constructs we carry in our heads. Our findings once again underscore the irresistible power of the racial illusion.

Appendix A

Table A1. Predictors of Darker-Than-Expected Skin Color Rating, Based on Matched Pairs.

	OR	*SE*
Woman's face	0.695+	0.139
Subject characteristics		
Skin color	1.110*	0.050
Age (years)	0.989	0.007
Female	0.979	0.125
White, non-Hispanic (ref.)		
Black, non-Hispanic	0.469*	0.149
Hispanic	0.522*	0.135
Asian or "other," non-Hispanic	0.743	0.143
Household income ($1000s)	1.003+	0.002
Education	0.975	0.051
Northeast (ref.)		
Midwest	0.902	0.171
South	0.758+	0.126
West	0.990	0.171
Constant	0.817	0.379
Name fixed effects	✓	
N (ratings)	2,706	
Log likelihood	−1754.011	
Intraclass correlation	0.207	

+$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$ (two-sided).

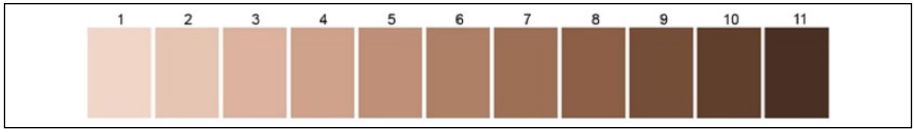

Figure A1. Skin color palette.
Note. Color images of the palette and faces are available in the online article.

Figure A2. Racially ambiguous faces.
Note. From the public database of the Artificial Intelligence Laboratory of the Faculdade de Engenharia Industrial of Sao Paolo, Brazil.

Control Variables

Age: Subject's age was initially recorded on a 10-point scale ranging from "18 to 24 years" (1) to "65 years and over" (10). For the analyses, we midpoint coded all but the final, open-ended category, which we recoded using linear interpolation.
Gender: Subject's gender is captured by a dichotomous variable where 0 corresponds to male and 1 corresponds to female.
Race: Subject's race is captured by a series of dichotomous variables for non-Hispanic Blacks, Hispanics, non-Hispanic Asians, and non-Hispanic, self-identified "Others," compared to non-Hispanic Whites (reference category).
Education: Education was recorded on a 6-point scale ranging from "Less than high school" (1) to "Graduate or professional degree" (6).
Household Income: Household income was initially recorded on a 12-point scale ranging from "Less than $10,000" (1) to "More than $150,000" (12). We midpoint coded all but the final, open-ended category, which we recoded using linear interpolation. For the multivariate analyses, we rescaled this variable by $1,000, such that a one-unit increase represents a $1,000-increase.
U.S. Birth: Subjects' place of birth is captured by a dichotomous variable where 1 corresponds to the United States and 0 corresponds to "Some other country."
U.S. Region: Region of residence is captured by a series of dichotomous variables for the Midwest, South, and West, compared to the Northeast (reference category).
Skin Color: At the end of the demographic survey, subjects were asked to rate their own skin color using the same, 11-point palette they used to rate others' faces.

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Authors' Note

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Notes

1. We use the term "race" rather than "ethnicity" throughout. Even scholars who disagree on the meaning of these concepts and the relationship between them agree that "race" is distinguished from "ethnicity" by its reliance on phenotypic traits that are assumed to reflect underlying biological differences (e.g., Brubaker et al., 2004; Omi & Winant, 1994).
2. Previously, two regional surveys of Mexican Americans included measures of skin color: Grebler, Moore, and Guzman's (1970) survey of Los Angeles and San Antonio, and Relethford, Stern, Gaskill, and Hazuda's (1983) survey of San Antonio.
3. See Bailey et al. (2014) and Frank et al. (2010).
4. For findings based on these surveys, see Telles and Flores (2013); Telles, Flores, and Urrea Giraldo (2015); Telles and Paschel (2014); and Telles and PERLA (2014).
5. Interviewers rated respondents' skin color as "light," "medium," or "dark."
6. For example, researchers have included covariates for interviewer characteristics—including self-identified race and self-rated skin color—in regressions predicting skin color ratings (Hill, 2002; Villarreal, 2010). In related studies, researchers predicted interviewees' racial self-identification controlling for interviewer's self-rated skin color (Telles & Flores, 2013; Telles & Paschel, 2014).
7. The experimental data and survey questionnaire will be posted on dataverse.org in 2017.
8. The sample size was predetermined by means of power calculations based on a substantively meaningful minimum detectable difference and an estimate of the interindividual variance in skin color ratings drawn from PERLA.
9. Non-Hispanic names may be described equally accurately as "White names"; "White" was overwhelmingly the racial category primarily associated with these names.
10. All the selected names were correctly identified as Hispanic or non-Hispanic at least 60% of the time, though most names far exceeded this lower bound.
11. The most distinctive names are those that are not translatable between languages (Sue & Telles, 2007); in the case of Spanish and English, Bryan and Guadalupe are examples of such names. We constructed a more stringent test of our hypothesis by using only names that have Spanish and English equivalents.
12. Supplementary analyses, not shown.
13. The ratio of the mean to the standard deviation is similar from a posttest where faces were presented without names.
14. All reported p values correspond to two-sided tests.
15. 3.9% of subjects were missing data on household income. The results are substantively similar imputing household income for these subjects (supplementary analyses, not shown).
16. A random—rather than fixed—effects parameter was employed in order to simultaneously model the effect of time-invariant subject characteristics, such as gender.
17. Among subjects in the reference category, that is, non-Hispanic Whites with less than a high school education.
18. Asking subjects to rate the same face more than once and with different names would have tipped them off to both deception and, most likely, the purpose of the study.
19. European beauty standards are also the norm among non-Hispanics. Thus, gendered norms may influence how non-Hispanic subjects perceive the skin color of women in general.
20. For example, an Internet video "Jose to Joe" became news when Mr. Zamora's decision to change the name on his resume finally led to callbacks after a months-long job search. http://www.huffingtonpost.com/2014/09/02/jose-joe-job-discrimination_n_5753880.html.

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