

Biological Conceptions of Race and the Motivation to Cross Racial Boundaries

Melissa J. Williams
University of California, Berkeley

Jennifer L. Eberhardt
Stanford University

The present studies demonstrate that conceiving of racial group membership as biologically determined increases acceptance of racial inequities (Studies 1 and 2) and cools interest in interacting with racial outgroup members (Studies 3–5). These effects were generally independent of racial prejudice. It is argued that when race is cast as a biological marker of individuals, people perceive racial outgroup members as unrelated to the self and therefore unworthy of attention and affiliation. Biological conceptions of race therefore provide justification for a racially inequitable status quo and for the continued social marginalization of historically disadvantaged groups.

Keywords: race, lay theories, essentialism, intergroup relations, interracial friendship

Human survival and well-being fundamentally depend on connections to other people. In the present research, we examine the extent to which people's conceptions of social groups determine which connections are most worthy of investment. Specifically, we investigate whether conceiving of racial group membership as biologically rooted determines to whom people attend and with whom they affiliate. We argue that a biological notion of race saps people's desire to reach out to members of racial groups that have been historically disadvantaged. These biological outgroup members ultimately are rendered, as a group and individually, less relevant to the self.

In the United States, race has traditionally been viewed in terms of biological essentialism—that is, race is understood to be a fundamental and stable source of division among humankind that is rooted in our biological makeup. More recently, however, some have come to see race as a social construct, initially created for purposes of maintaining a hierarchical social order but now a

meaningful marker of cultural orientation, social identity, and experiences with discrimination (Smedley & Smedley, 2005).

Evidence could be gathered in everyday life that would seem to support either view. For example, one individual may have observed that he is easily able to identify someone's race from the person's physical appearance. He may have read about a new cardiac drug targeted specifically to Black Americans (Saul, 2005), suggesting to him that race is linked to a person's biology at the genotypic and phenotypic levels. He may also have observed that people tend to remain members of the same racial group throughout their lifetimes, suggesting to him that race is an unchanging internal property of an individual. On the basis of this evidence, this individual may come to the conclusion that racial group membership is biologically based and static.

Another individual may have used equally available evidence to draw a very different conclusion about the meaning of race. She may have met people who identify with a different racial group than their appearance would indicate or learned that scientists have found no genetic markers for race in the human genome, suggesting to her that race is imperfectly linked to human biology. She may also have traveled to a country where her own race is perceived differently than it is at home, suggesting to her that race is impermanent and culturally variable. On the basis of this evidence, she may come to the conclusion that people's racial group membership is a dynamic aspect of the sociocultural environment.

The purpose of the present research is not to determine which view is most accurate but instead to investigate the consequences of endorsing one conception over another. From previous social psychological studies, we know that biological essentialism (whether applied to race, gender, or fictional outgroups) is associated with stereotype endorsement (Bastian & Haslam, 2006; Brescoll & LaFrance, 2004; Haslam, Bastian, Bain, & Kashima, 2006; Hoffman & Hurst, 1990), prejudice (Condit, Parrott, Bates, Bevan, & Achter, 2004; Jayaratne et al., 2006; Keller, 2005), and a tendency to attribute the behavior of outgroup members to dispositional rather than situational causes (Yzerbyt, Rogier, & Fiske, 1998; see Prentice & Miller, 2007, for a review).

Melissa J. Williams, Department of Psychology, University of California, Berkeley; Jennifer L. Eberhardt, Department of Psychology, Stanford University.

This research was supported in part by National Science Foundation Grant BCS-9986128 to Jennifer L. Eberhardt. We thank Criselda Arellano, Reza Asgari, Hilary Burbank Bergsieker, Whitney Brechwald, Jacquelyn Brown, Rochelle Smith Burnaford, Wayne Chan, Kirby Chow, Dana Feigenbaum, Steve Fein, Skye Fraser, Yonatan Harel, Mary Elaine Ignacio, Lauren Jensen, Amy Jin, Tina Mahal, Lorraine Martinez, Puja Patel, Vivi Richards, Anna Rubin, Melanie Sun, Katherine Urbanic, Diane Velasco, Joanne Wan, and Charis W. Wong for invaluable assistance with data collection throughout the project. We also thank Nilanjana Dasgupta, Carol Dweck, Susan Fiske, Eric D. Knowles, Dale Miller, Benoit Monin, Elizabeth Page-Gould, Julie Spencer-Rodgers, and the Culture Co-Laboratory at Stanford University for helpful comments on earlier versions of this article.

Correspondence concerning this article should be addressed to Melissa J. Williams, Department of Psychology, University of California, Berkeley, 4143 Tolman Hall, MC 5050, Berkeley, CA 94720-5050, or to Jennifer L. Eberhardt, Department of Psychology, Stanford University, Stanford, CA 94305-2130. E-mail: melissa@berkeley.edu or jleberhardt@stanford.edu

Despite the growing body of social psychological research in this area, little is known about how race conceptions relate to people's perceptions of the social order. Although social psychologists, like other academics, frequently acknowledge the influence that biological essentialism may have on how people come to understand and justify racial inequities (Jost, 2001; Jost & Banaji, 1994; Yzerbyt, Estrada, Corneille, Seron, & Demoulin, 2004; Yzerbyt & Rogier, 2001), there is surprisingly little empirical research that examines this relationship. Moreover, little is known about how a belief in biological essentialism might influence the decisions people make in their day-to-day interpersonal interactions.

Instead, racial prejudice has become the dominant variable used to explain both reactions to existing racial disparities and the quality of interracial interactions. For example, for decades, researchers have highlighted the role of prejudice in the lack of support for social policies designed to decrease inequities between racial groups (Federico & Sidanius, 2002; Kinder & Sears, 1981; Sears, 1988; Sears, van Laar, Carrillo, & Kosterman, 1997). Researchers have also documented that prejudice, or concern about appearing prejudiced, can lead to negative interpersonal interactions across race lines. Moreover, not only might people experience negative interracial interactions (Dovidio, Kawakami, & Gaertner, 2002; Towles-Schwen & Fazio, 2006; Vorauer & Sakamoto, 2006), but they may also anticipate negative interactions even before they occur (Shelton, 2003; Shelton & Richeson, 2005; Towles-Schwen & Fazio, 2003) and work to avoid such interactions where possible (Plant & Butz, 2006; Shelton, Richeson, & Vorauer, 2006).

Less often have researchers investigated the role of people's evaluatively neutral beliefs in explaining reactions to racial disparities and the quality of interracial interactions. Beyond racial prejudice, in this article we investigate whether a simple belief that racial categories are biologically determined has the power to dampen people's motivation to engage with historically disadvantaged racial groups. Affiliating and engaging with others is a fundamental need. However, a biological conception of race may function as an affiliation cue that operates preferentially, such that people who hold this conception most desire to affiliate with those who are in their biological ingroup. That is, because people are more likely to direct their resources and attention to those whom they perceive as kin (Hamilton, 1964; Kruger, 2003; O'Gorman, Wilson, & Miller, 2005), they may direct their resources and attention to those within their racial ingroup when they view race as biological in nature.

We demonstrate in the present studies that individuals who understand race to be biologically derived are more accepting of racial inequities. They tend to understand racial inequities as natural, unproblematic, and unlikely to change (Study 1), a relationship that cannot be accounted for by racial prejudice. Moreover, an experimentally manipulated view of race as biological leads people to respond to racial inequities with less emotional engagement (Study 2). That is, they are not only less motivated to change racial inequities but also less concerned with and moved by such disparities. At the interpersonal level, we show that those with a biological conception of race maintain friendship networks that are less racially diverse (Study 3), have less desire to develop friendships across race lines (Studies 3 and 4), and are less interested in simply sustaining contact with a person of another race

(Study 5) than are those with a social conception of race. Thus, we argue that a biological notion of race—beyond racial prejudice—sharpens associational preferences along race lines.

Preliminary Studies: Race Conceptions Scale (RCS) Development

At the outset of the research project, we sought to develop scale items that could be used in subsequent studies to reliably measure the extent to which individuals hold a conception of race as biologically based. After extensive preliminary testing and a thorough review of the relevant literature in the social sciences, natural sciences, humanities, and law, we developed 22 test items (see Appendix A) designed to measure the extent to which racial categories are considered biological (e.g., "Racial groups are primarily determined by biology"), natural (e.g., "It's natural to notice the racial group to which people belong"), easily discernable (e.g., "It's easy to tell what race people are by looking at them"), stable across time (e.g., "The same racial categories have pretty much always existed"), stable across contexts (e.g., "There's agreement across cultures about which racial groups people fall into"), and stable within individuals (e.g., "A person's race is fixed at birth"). Of importance, we included items designed to simply tap people's understanding of the factors determining racial categories (e.g., "Racial groups are primarily determined by biology") rather than items designed to tap people's understanding of the specific abilities, behaviors, or psychological traits that have been linked to race. (For example, we did not include items such as, "Intelligence is primarily determined by biology" or "Blacks are inherently less intelligent than Whites"). We are interested in the power of race conceptions alone—not racial stereotypes, prejudice, or negative social attributions—to influence perceptions of racial inequities and to determine the outcomes of interracial interactions.

The RCS was designed such that individuals with a relatively biological conception of race were those who tended to agree with items describing race as biological, natural, easily discernable, and stable and to disagree with items describing race as socially determined, context specific, difficult to discern, and unstable. We also examined the extent to which such items could be differentiated from racial prejudice, motivation to control prejudice, lay theories of static versus dynamic personality traits, social dominance orientation, and social desirability.

Method and Results

Sample 1

The initial sample was 302 Stanford University students (55% female) who self-identified as White (48%), Asian (30%), Latino (4%), Black (5%), and of mixed or other ethnic backgrounds (11%). The remaining 3% did not report their ethnicity. In a questionnaire packet administered in a mass testing session, participants completed the Modern Racism Scale (McConahay, 1986), the Attitudes Toward Blacks measure (Brigham, 1993), the Internal and External Motivation to Respond Without Prejudice Scales (Plant & Devine, 1998), the Motivation to Control Prejudiced Reactions Scale (Dunton & Fazio, 1997), and the Implicit

Person Theory measure (Chiu, Hong, & Dweck, 1997), along with the RCS.

The 22 RCS items showed strong coherence (Cronbach's $\alpha = .79$). An analysis of variance (ANOVA) revealed no difference in mean scale scores as a function of participants' race ($M_{\text{White}} = 4.09$; $M_{\text{Nonwhite}} = 4.15$), $F(1, 281) < 1$, *ns*. Male participants ($M = 4.20$) scored marginally higher than did female participants ($M = 4.04$), $F(1, 285) = 3.54$, $p = .06$.

Convergent and discriminant validity: Prejudice and implicit theories. Participants' RCS scores correlated with their Modern Racism Scale scores ($r = .28$, $p < .01$) and their Attitudes Toward Blacks Scale scores ($r = .37$, $p < .01$), both of which were scored such that higher scores indicate more explicit prejudice. Likewise, RCS scores correlated positively with the External Motivation to Respond Without Prejudice Scale ($r = .18$, $p < .01$), which measures individuals' motivation to avoid appearing prejudiced to others, and negatively with the Internal Motivation to Respond Without Prejudice Scale ($r = -.22$, $p < .01$), which measures individuals' motivation to behave in accordance with internalized egalitarian values. These results indicate that individuals with a biological conception of race are more likely to feel external pressure to avoid displaying prejudice but less likely to feel internal pressure to be nonprejudiced. RCS scores showed virtually no relationship with the Motivation to Control Prejudiced Reactions Scale ($r = -.03$, *ns*), which may reflect the fact that this scale includes items relating to both external and internal motivation. Finally, the RCS showed a positive correlation with the Implicit Person Theory measure, such that individuals who conceived of race as biological were more likely to have a fixed view of personality traits ($r = .13$, $p = .02$).

Test-retest reliability. Approximately 1 month after the initial administration of the RCS, 207 of the same participants again completed the scale as part of a questionnaire packet. Internal reliability was again high (Cronbach's $\alpha = .86$), and participants showed a high degree of consistency between their two sets of responses ($r = .82$, $p < .01$).

Social desirability. Some initial evidence that the RCS is relatively nonreactive can be seen in the distribution of mean scale scores relative to those of the explicit measures of prejudice. The mean RCS score was 4.11 on a 7-point scale ($SD = 0.72$), with a virtually normal distribution (skewness = 0.05). By contrast, the Modern Racism Scale had a mean of 2.07 ($SD = 0.91$) and the Attitudes Toward Blacks Scale a mean of 1.99 ($SD = 0.72$). Both prejudice measures use 7-point scales and are scored such that a higher score indicates greater prejudice. The prejudice measures also showed a great deal of positive skewness, with values of 1.03 for the Modern Racism Scale and 1.08 for the Attitudes Toward Blacks Scale. These results suggest that the RCS captures a broader distribution of scores that tap an underlying construct than do explicit prejudice measures, the scores of which tend to be concentrated at the low end of the scale.

Factor analysis. Although an individual's conception of race was theorized to be a unitary construct, we nonetheless subjected the 22 RCS items to a principal-components analysis with varimax rotation to examine the scale's internal structure. Six factors with eigenvalues greater than 1 were extracted; however, they did not readily appear to have theoretical coherence. Furthermore, the internal reliability of the six factors individually (range = .13–.74) was substantially lower than that of the scale as a whole.

Sample 2

Forty-four University of California, Berkeley, students (55% female) who self-identified as White completed the RCS and the Marlowe–Crowne Social Desirability Scale (Crowne & Marlowe, 1960) as part of a larger questionnaire packet.

The RCS items again showed strong coherence (Cronbach's $\alpha = .93$). Because all participants were White, analyses by race were not conducted. Male participants ($M = 3.90$) again had marginally higher RCS scores than did female participants ($M = 3.26$), $F(1, 43) = 3.70$, $p = .06$.

Social desirability. RCS scores showed almost no relationship to social desirability scores ($r = .04$, *ns*), indicating that individual tendencies to respond in a socially desirable manner were not related to tendencies to respond to the RCS.

Factor analysis. This sample was not subjected to a factor analysis because of its small size.

Sample 3

Sample 3 comprised 925 University of California, Berkeley, students (63% female), of whom 30% were White, 44% were Asian, 9% were Latino, 2% were Black, and 8% were of mixed or other backgrounds. The remaining 8% did not specify their ethnic background. The participants in this sample completed the RCS and the Social Dominance Orientation Scale (Pratto, Sidanius, Stallworth, & Malle, 1994), which measures preferences for group-based hierarchies.

The RCS items once again showed strong coherence (Cronbach's $\alpha = .84$). Unexpectedly, non-White participants ($M = 4.05$) had higher RCS scores (indicating a more biological conception of race) than did White participants ($M = 3.86$), $F(1, 855) = 10.11$, $p < .01$. As in previous samples, men ($M = 4.14$) scored higher on the RCS than did women ($M = 3.92$), $F(1, 861) = 14.06$, $p < .01$.

Convergent and discriminant validity: Social dominance orientation. RCS and the Social Dominance Orientation Scale scores were positively related ($r = .11$, $p < .01$), such that participants with a biological conception of race had a greater preference for a hierarchical society.

Factor analysis. The RCS was subjected to a principal-components analysis with varimax rotation. As in Sample 1, six factors with eigenvalues greater than 1 were extracted. Again, however, these factors did not appear to have theoretical coherence. Moreover, the internal structure of Sample 3 did not reliably match that of Sample 1; none of the six factors included the same sets of items across samples. Finally, the internal reliability of the six factors individually (range = .46–.75) was substantially lower than that of the scale as a whole.

Discussion

Across three samples, we demonstrate that the RCS survey items are internally consistent, are consistent over time, are related to—but nonetheless distinct from—measures of prejudice, and are less reactive than these measures. The RCS also is related to, but distinct from, measures of social dominance orientation and a tendency to perceive personality traits as fixed.

Men tended to score higher on the RCS than women. Although the current data sets do not provide explanations for this difference, it is possible that men and women may be differentially exposed to information regarding a biological basis of race or differentially motivated to seek such information. In contrast, these results do not show reliable race differences in RCS responding—members of non-White groups are at least as likely as White participants to hold theories of race as biologically based.

As suspected, results of factor analyses in Samples 1 and 3 did not indicate that the RCS has clear-cut consistent subcomponents. The scale is therefore used in a unitary fashion in subsequent studies.

Study 1

The development of the RCS placed us in the position to begin testing our primary predictions. In Study 1, we used the RCS to explore the relationship between conceptions of race and reactions to disparities between racial groups, such as those that currently exist in education, income, and employment between Black and White Americans. We predicted that a view of race as biological would be associated with increased acceptance of racial disparities and reduced motivation to address such disparities. Furthermore, we predicted that this relationship would not be accounted for by explicit racial prejudice.

Method

Participants

Stanford students ($N = 140$) completed a survey on racial disparities in the United States in exchange for course credit. This sample was 61% female and self-identified as White (49%), Asian American (32%), Latino (9%), and Black (8%). The 11 Black participants were dropped from analyses, as the social issue presented in the study (regarding obstacles faced by Black Americans) would not have been an intergroup issue for these participants, resulting in a final sample size of 129.

All participants had completed the RCS, the Modern Racism Scale, the Attitudes Toward Blacks Scale, and the Internal and External Motivation to Respond Without Prejudice Scales as part of a questionnaire packet earlier in the quarter.

Procedure

A survey on racial disparities was distributed in an introductory psychology class. The survey instructions explained that, "There are racial disparities between Black and White Americans in this country in a number of areas (e.g., inequalities in education, employment, income). On many different dimensions, Black Americans do not do as well as White Americans." Participants were then asked to indicate, using a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), the degree to which they endorsed seven statements regarding racial inequities: "Racial disparities pose a major problem to American society" (reverse scored), "I find the magnitude of racial disparities in this country to be unacceptable" (reverse scored), "Racial disparities are insurmountable," "It is highly unlikely that the choices I make in my own life will have an effect on racial disparities," "It is natural that some groups will not do as well as others on some dimensions," "Racial

disparities are likely to disappear in the future" (reverse scored), and "Some racial disparities are due to inherent trait differences between White and Black Americans." In addition, a filler item ("Some racial disparities are due to social or environmental differences between White and Black Americans") preceded the last item. We predicted that most people would feel uncomfortable stating that "Some racial disparities are due to inherent trait differences" unless they could also state that "Some racial disparities are due to social or environmental differences."

Results

As predicted, endorsement of the filler item was high among all participants; mean endorsement of this item ($M = 5.66$) was higher than endorsement of all seven target items (range = 2.60–5.60). The filler item also showed virtually no relationship to participants' RCS scores ($r = .11$, *ns*).

A race disparities score was computed by averaging each participant's responses to the seven target items (Cronbach's $\alpha = .63$). As expected, participants' RCS scores correlated significantly with their endorsement of the racial disparities items, such that a more biological conception of race was associated with greater acceptance of racial disparities ($r = .29$, $p < .01$). Partial correlations were subsequently calculated to determine whether this relationship would persist when controlling for participants' scores on measures of explicit prejudice.¹ As predicted, the relationship between RCS and the averaged racial disparities items held even when controlling for participants' scores on the Modern Racism Scale ($r = .19$, $p = .04$), the Attitudes Toward Blacks Scale ($r = .16$, $p = .07$), the Internal Motivation to Respond Without Prejudice Scale ($r = .27$, $p < .01$), and the External Motivation to Respond Without Prejudice Scale ($r = .26$, $p < .01$).

Discussion

These results demonstrate that the more participants conceived of race as a biological construct, the more accepting they were of current racial disparities—perceiving these disparities to be relatively unproblematic, natural, and unlikely to change via individual or societal efforts. Moreover, although race conceptions are moderately related to levels of prejudice and a desire to control prejudiced responses, race conceptions account for unique variance in people's responses to race disparities, even when controlling for prejudice. This lends support to our view of race conceptions as theoretically distinct lay theories that are not redundant with racial prejudice.

Although conceptions of race appear to be related to people's perceptions of race disparities, Study 1 leaves unaddressed the

¹ Pairwise correlations between the RCS and the explicit measures were as follows: Modern Racism Scale, $r = .28$; Attitudes Toward Blacks Scale, $r = .32$; Internal Motivation to Respond Without Prejudice Scale, $r = -.12$; and External Motivation to Respond Without Prejudice Scale, $r = .17$. The magnitude of these relationships held generally constant for participants of different racial backgrounds; within-group correlation coefficients for the three participant race groups were: Modern Racism Scale, $r_s = .21-.28$; Attitudes Toward Blacks Scale, $r_s = .27-.37$; Internal Motivation to Respond Without Prejudice Scale, $r_s = -.19-.16$; and External Motivation to Respond Without Prejudice Scale, $r_s = -.01-.25$.

causal nature of this relationship. Does a biological conception of race produce greater acceptance of racial disparities or does greater acceptance of racial disparities lead people to adopt a biological conception of race? We address this issue in Study 2 by experimentally manipulating views of race as biological or social in origin.

We have argued that a biological conception of race dampens people's sensitivity to the plight of disadvantaged racial groups and diminishes the desire to change racial inequities. An alternative explanation, however, is that people's acceptance of racial disparities comes from a decrease in perceived efficacy rather than desire. In other words, people with a biological conception of race may want to rectify racial inequities but may feel they are less able to do so than people with a social conception of race. Study 2 was designed to address this issue as well.

Study 2

In Study 2, we placed participants in a situation in which they may find themselves every day—reading a real newspaper article about a social problem relevant to race—and measured how it affects them emotionally. We hypothesized that participants' manipulated conceptions of race would affect the degree to which they became emotionally engaged in response to the article, in that those exposed to a view of race as socially constructed would feel more moved and upset—a precursor to motivated action—after reading a news article describing racial inequities than would those exposed to a view of race as biologically derived.

Method

Participants

A total of 85 undergraduates at the University of California, Berkeley, participated in the study in exchange for partial course credit. All participants had completed two measures of explicit prejudice, the Modern Racism Scale and the Old-Fashioned Racism Scale (McConahay, Hardee, & Batts, 1981), earlier in the semester. The sample was 59% female and 35% White, 34% East Asian, 18% Latino, 12% South Asian, and 1% Black. The 1 Black participant was dropped from analyses, as the social issue presented in the study (regarding obstacles faced by Black Americans) would not have been an intergroup issue for this participant.

Materials

Race conception primes. Participants read an article that was described as having been taken from a science website. The article described new findings from the journal *Gene* relating to the ability of scientists to determine race from human tissue samples via genes implicated in skin color. In the biological conception condition (see Appendix B), the article was accompanied by the headline, "Scientists Pinpoint Genetic Underpinnings of Race," and said that by using genetic information about skin color, researchers had been able to correctly guess a person's race at a rate that was significantly above chance. The lead author was quoted as saying, "we obtain our genetic material from our parents, so we generally inherit their race along with everything else." Thus, the biological conception article argued that race originates in heritable biology.

In the social conception condition (see Appendix C), the article was accompanied by the headline, "Scientists Reveal That Race Has No Genetic Basis." It said that the researchers had been able to guess a person's race at a rate that did not differ from chance. In this version of the article, the lead author was quoted as saying, "we do inherit our physical appearance from our parents, but the practice of classifying people into racial groups based on certain patterns of physical appearance is entirely cultural in origin. There's just no genetic basis for it." Thus, the social conception article argued that race originates in the sociocultural environment rather than in biology.

Racial inequities article. The stimulus designed to confront participants with racial inequities in American society was a news article that appeared on the front page of *The New York Times* on March 20, 2006. Headlined "Plight Deepens for Black Men, Studies Warn," the story described recent reports by social scientists arguing that Black men with little education and poor job prospects are increasing in numbers and in their alienation from mainstream America, even as overall economic growth in recent decades has provided boosts to other demographic groups. For example, one study cited in the article found that among young Black men who had not completed high school, more were in prison than were working. This article was selected for the present study for two reasons. First, it presented a major inequity between racial groups by pointing out that in comparison to White men, Black men are at increasing risk of losing out on the economic and social resources that are available to other groups. Second, the article was inconclusive as to the key reasons for this inequity. Many possibilities were raised, including racism, bad schools, absentee fathers, and drug-sentencing laws, leaving room for the reader to draw any of a myriad of conclusions about where the blame for this problem should be laid.

Procedure

Participants completed the study via the Internet from a location of their choosing. The study was described as investigating awareness of media issues. To bolster the cover story, participants initially provided information about their media consumption, their beliefs about media trustworthiness, and their attitudes toward scientific research.

Priming manipulation. Participants were then presented with a list of science news headlines that included the headline for either the biological prime article or the social prime article and were told that they would be randomly assigned to evaluate one of the articles in the list. The distracter headlines, all on scientific topics unrelated to race (e.g., "Dangerous Practices in Drug-Safety Monitoring") were designed to reduce awareness of the study's focus on race. In fact, all participants were assigned to either the biological prime article or the social prime article. After reading the article for 5 min, they were asked some basic comprehension questions about its content.

Response to racial inequities. Participants were next told that they would be reading two news articles, both reprinted from *The New York Times*, regarding American social issues. They were presented with a list of news headlines that included the headline for the article about racial inequities ("Plight Deepens for Black Men, Studies Warn"), the headline for a distracter article ("California Bill Calls for Cuts in Emissions"), and several additional

headlines (e.g., “Some Abortion Foes Forgo Politics for Quiet Talk”) and were told that they would be randomly assigned to evaluate two of the articles in the list. The distracter article and headlines, all on social topics unrelated to race, were designed to reduce awareness of the study’s focus on race. In fact, all participants first read the distracter article on environmental legislation, which also was a real article that appeared in *The New York Times* on April 4, 2006, for 3 min. All participants then read the article about racial inequities for 8 min. They were subsequently asked basic comprehension questions about the racial inequities article.

Participants next indicated the degree to which each of 11 adjectives described their present mood state using a 5-point scale (ranging from 1 = *not at all* to 5 = *extremely*). Four of these items were selected to reflect emotional engagement (*moved, concerned, upset, and nervous*) and four to reflect emotional disengagement (*comfortable, indifferent, relaxed, and apathetic*). There were three additional filler items: *educated, informed, and knowledgeable*. Finally, participants provided demographic information about themselves and were debriefed and thanked.

Results

Three participants in the biological conception condition failed to recall from the prime article that race was detected at an above-chance rate from patients’ DNA, and another 2 participants in the social conception condition failed to recall from the prime article that race was not detected from patients’ DNA. Because it was not clear that these participants had adequately attended to the prime, they were dropped from further analysis.

The dependent variables were the average of the four mood items capturing emotional engagement ($\alpha = .79$) and the average of the four mood items capturing disengagement ($\alpha = .73$). An ANOVA revealed that, as predicted, participants in the social conception condition were more emotionally engaged ($M = 2.42$) than were participants in the biological conception condition ($M = 2.10$), $F(1, 78) = 3.38, p = .07$. Further, condition persisted as a significant predictor of emotional engagement in a regression analysis controlling for Modern Racism Scale scores, $\beta(75) = .23, p < .05$, as well as in a regression analysis controlling for Old-Fashioned Racism Scale scores, $\beta(75) = .23, p < .05$. This pattern did not, however, emerge for emotional disengagement: There was no significant difference in disengagement among those in the social conception ($M = 2.43$) and the biological conception ($M = 2.40$) conditions, $F(1, 78) < 1, ns$.

Discussion

In Study 2, we experimentally manipulated participants’ conceptions of race by differentially exposing them to information suggesting that race is or is not reliably linked to heritable biology. This information affected how participants subsequently responded to an evocative presentation of a real social inequity between racial groups in America: Those led to think that race is a social construct felt more emotionally engaged than those led to think that race is a biological construct. Although participants exposed to a biological view of race were not more comforted by the inequities experienced by Blacks than were those exposed to a social view, those exposed to a biological view were significantly less moved, concerned, and upset by those inequities.

The articles created for this study as primes of biological and social race conceptions are more than rarefied laboratory stimuli. The arguments and the scientific inquiries they discuss are frequent topics of discussion in the professional and lay media (Bamshad & Olson, 2003; Condit et al., 2004; Davis et al., 2001; Kristof, 2003; Stolberg, 2001). Thus, exposure to information from an apparently credible source about the underlying meaning of race may be a common occurrence that significantly alters how people think and feel about the inequities experienced by racial outgroups.

Study 3

Whereas Studies 1 and 2 examine how race conceptions influence responses to group-level inequities, the next three studies examine how race conceptions might influence interpersonal interactions. In Study 3, we investigated the relationships among individuals’ chronically held race conceptions, the diversity of their social networks, and their interest in social contact with people outside their own racial group. We made two specific predictions. First, we predicted that a biological conception of race would be negatively related to motivation to engage in social interactions with racial outgroup members. Second, we predicted that a biological conception of race would be negatively related to the actual presence of diversity among participants’ networks of close others, a situation that could be seen as both a consequence and an antecedent of the predicted difference in motivation to engage in interracial interaction. In both cases, we expected that these relationships would not be moderated by explicit racial prejudice or the race of the participants.

Method

In exchange for partial course credit, 507 University of California, Berkeley, students participated in the study.² This sample was 64% female and 56% Asian, 31% White, 12% Latino, and 2% Black.

The study was conducted as part of a larger questionnaire packet that included multiple measures unrelated to race. Within the packet, participants completed the RCS and two explicit prejudice scales: the Modern Racism and the Old-Fashioned Racism Scales. They further responded to six items designed to assess their interest in and willingness to engage in social interactions with people of a different ethnic background from their own on a 4-point scale. These items were taken from the Other-Group Orientation subscale of the Multigroup Measure of Ethnic Identity (Phinney, 1992). This subscale has been shown to be conceptually and statistically distinct from the items tapping ethnic identity and instead measures a person’s overall attitudes toward interaction with different ethnic groups. The items were as follows: “I like meeting and getting to know people from ethnic groups other than my own,” “I sometimes feel it would be better if different ethnic groups didn’t try to mix together” (reverse scored), “I often spend time with people from ethnic groups other than my own,” “I don’t try to become friends with people from other ethnic groups” (reverse scored), “I am involved in activities with people from

² Sample sizes vary slightly among analyses because of missing data.

other ethnic groups,” and “I enjoy being around people from ethnic groups other than my own.”

Last, participants were presented with descriptions of eight types of close others (e.g., “people I have dated,” “my close friends at work”) and asked to list the ethnic groups represented by each type of person in their own lives. They chose from a list of six groups—Asian, Black, Native American, Latino, White, or mixed. Diversity scores were then obtained for each participant by counting the number of ethnic groups listed for each type of close other that differed from the participant’s own group (“mixed” was always counted as differing from the participant’s own group). It is important to note that diversity scores reflect the total number of groups represented for each friend category rather than the total number of friends and therefore have a potential range of 0 to 5. As an example, an Asian participant who had 2 Asian friends, 1 Black friend, and 2 White friends at work would be assigned a diversity score of 2 (1 for Black and 1 for White) for the work friends category.

Results

As predicted, RCS scores were significantly related to participants’ self-reported motivation to seek out contact with diverse others. An average score calculated from these six items ($\alpha = .81$) correlated significantly with RCS scores, $r(503) = -.26, p < .01$, such that the more that participants had a biological view of race, the less interest they had in interracial interaction. Further, a regression analysis in which both Modern Racism Scale and RCS scores were entered as predictors revealed that RCS scores remained a significant predictor of motivation to engage in interracial interaction, $\beta(498) = -.16, p < .01$. Similarly, when Old-Fashioned Racism Scale and RCS scores were entered as predictors in a separate analysis, RCS scores remained a significant predictor of motivation to engage in interracial interaction, $\beta(498) = -.15, p < .01$.

RCS scores also were significantly related to the actual presence of diversity in participants’ networks of close others, as predicted. Results are presented in Table 1. Specifically, a biological conception of race negatively predicted diversity among participants’ close friends in high school, the people they have dated, the close friends they have made at current or past jobs, the people with whom they have formed close meaningful relationships, their current close friends, the people they typically study with, and those they confide in. Further, a regression analysis in which both

Modern Racism Scale and RCS scores were entered as predictors of each type of friendship diversity revealed that RCS scores remained a significant predictor of friendship diversity (with the exception of the analysis with job friends, which was marginally significant). Similarly, when Old-Fashioned Racism Scale and RCS scores were entered as predictors in separate analyses, RCS scores remained a significant predictor of friendship diversity.

Finally, follow-up analyses revealed that this pattern of results was essentially unchanged when examined as a function of participant race. The relationships between participants’ conceptions of race, their motivation for interracial interaction, and their friendship diversity were of comparable size, regardless of participants’ own racial backgrounds. Looked at differently, when the analyses were performed while excluding one of the four participant race groups (Asian, White, Latino, and Black) at a time, the pattern of effect sizes likewise did not change.

Discussion

This study demonstrates that a biological conception of race is associated not only with a less diverse circle of close others but also with less motivation to seek contact outside of one’s own racial group. Regardless of the initial direction of causality, this lack of motivation is likely to perpetuate the status quo. Individuals with a biological view of race may not perceive racial outgroup members as being related to the self and therefore worthy of time, attention, and friendship.

Study 4

In Study 4, we experimentally manipulated conceptions of race and measured the consequences for interracial interaction motivation. We predicted that participants exposed to a biological view of race would show less interest in becoming friends with a racial outgroup member, relative to those exposed to a view of race as socially constructed. To rule out the possibility that a biological view of race reduces interest in social interaction generally and not specifically in cross-race interaction, we included an additional condition in which participants evaluated a target of their own race. Also, to provide further information about whether the effects of race conceptions on friendship motivation are driven more by the biological or the social end of the race conceptions continuum, we included a no-prime control condition for comparison purposes.

Table 1
Race Conceptions Scale (RCS) Scores as Predictors of Friendship Diversity in Study 3

Type of close other	Correlation with RCS (r^a)	Relationship with RCS controlling for Modern Racism (β^b)	Relationship with RCS controlling for Old-Fashioned Racism (β^b)
Diversity of close friends in high school	-.24**	-.19**	-.20**
Diversity of past dating partners	-.19**	-.13**	-.16**
Diversity of close friends at current or past jobs	-.14**	-.09†	-.10*
Diversity of close meaningful relationships	-.24**	-.17**	-.19**
Diversity of current close friends	-.24**	-.17**	-.16**
Diversity of typical study partners	-.18**	-.11*	-.12*
Diversity of current confidants	-.18**	-.13**	-.13*

^a $N = 467$. ^b $N = 462$.
† $p < .10$. * $p < .05$. ** $p < .01$.

This document is copyrighted by the American Psychological Association or one of its allied publishers. This article is intended solely for the personal use of the individual user and is not to be disseminated broadly.

Method

Design and Participants

The study used a 3 (prime: biological conception, social conception, or control) \times 2 (target race: same race vs. other race) experimental design. Participants in the other-race target condition saw a Black target, whereas participants in the same-race target condition saw a target of the same racial background as themselves. To maximize the number of participants who were eligible for the study, we chose two targets for the same-race target condition who represented the two largest racial groups in the available pool: White and Asian. Last, to control for gender, we used both targets and participants from a single gender (male).

White and Asian men ($N = 284$) were recruited out of a larger pool of students at the University of California, Berkeley, who had previously completed a demographic survey and provided their gender and ethnicity. All were undergraduate students who completed the study in exchange for partial course credit.

Materials

Primes. The primes for the biological conception and social conception conditions were the same scientific articles used in Study 2. In addition, a control article was created on a scientific topic unrelated to race: "Scientists Discover Galaxy With Gas Halo." Pilot testing ($N = 29$) confirmed that this article was comparable with the two experimental articles in terms of difficulty and readability.

Target videos. Three male college students (1 White, 1 Asian, and 1 Black) were filmed telling a 2-min story about being recently fired from their jobs. The story was intended to be ambiguous with regard to whether the firing was justified. For example, the target said that he thought he was performing his job well but also that he sometimes showed up late. The three targets wore identical clothing during the video and followed an identical script. Pilot testing ($N = 39$) confirmed that the targets were comparable in terms of perceived attractiveness and likeability.

Procedure

Participants completed the study via the Internet from a location of their choosing. The study was described as investigating how people process information in online contexts. They were told that they would read textual material and view audiovisual media and would provide their opinions about this material. To bolster the cover story, participants first provided information about their use of and attitudes toward the Internet. As in Study 2, they were then given a list of headlines on scientific topics and told they would be randomly assigned to read one of the articles. One of these headlines was that of the biological conception prime, the social conception prime, or the control article. All participants were assigned to one of these three articles, which they then read for 5 min. The article was followed by the same basic comprehension questions used in Study 2.

Next, participants were presented with a second list of headlines unrelated to race that included that of the distracter article used in Study 2, "California Bill Calls for Cuts in Emissions." All participants were then "randomly" assigned to this article, which they then read for 3 min before responding to basic comprehension

questions. The purpose of this article was to disguise the race-related focus of the study.

In the next part of the study, participants were told the focus would be on audiovisual rather than textual presentation and that they would be viewing an audiovisual clip of a person describing a real event in his or her life. Each participant then watched the 2-min movie clip of the same-race (White or Asian, depending on the participant's own race) or other-race (Black) target describing his recent job loss and answered some basic recall questions about the clip.

Using a 7-point scale (1 = *strongly disagree* to 7 = *strongly agree*), participants responded to two questions designed to capture their interest in becoming friends with the target ("If you met the speaker in real life, how motivated would you be to become good friends?" and "If you met the speaker in real life, how likely is it that you would actually become friends?"). They then indicated in an open-ended format what they thought the purpose of the study was and were debriefed and thanked.

Results

Three participants were dropped from the study because they guessed the true nature of the study. Ten participants in the biological conception condition failed to recall from the prime article that race was detected at an above-chance rate from patients' DNA, and another 10 participants in the social conception condition failed to recall from the prime article that race was not detected from patients' DNA. Because it was not clear that these participants had adequately attended to the prime, they were dropped from further analysis. Finally, 12 participants incorrectly answered one or more of the three recall questions from the target video (e.g., "Had the speaker used any of his sick days?"), suggesting that they inadequately attended to the target or encountered technical difficulties in viewing the movie clip. These participants also were dropped from analysis, resulting in a final sample size of 249.

The central question was whether conceiving of race as biological or social would affect participants' interest in becoming friends with a racial outgroup member. Toward that end, friendship motivation scores for participants who viewed the other race target were subjected to a between-subjects ANOVA. The results showed that priming condition had a significant overall effect on other-race friendship motivation, $F(1, 126) = 3.35, p = .04$ (see Figure 1). Further analyses of simple effects revealed that other-race friendship motivation scores for the biological conception condition ($M = 2.87$) were significantly lower than those for both the social conception condition ($M = 3.55$), $F(1, 70) = 5.53, p = .02$, and the control condition ($M = 3.37$), $F(1, 98) = 4.18, p = .04$. The social conception and control conditions did not significantly differ from each other, $F(1, 85) < 1$. A similar analysis was conducted for participants who viewed the same-race target; however, as predicted, priming condition was unrelated to same-race friendship motivation for participants in the biological conception ($M = 3.21$), social conception ($M = 3.30$), or control ($M = 3.38$) conditions, $F(1, 121) < 1$.

Discussion

The results of this study support our central hypothesis that viewing race as biological triggers associational preferences along

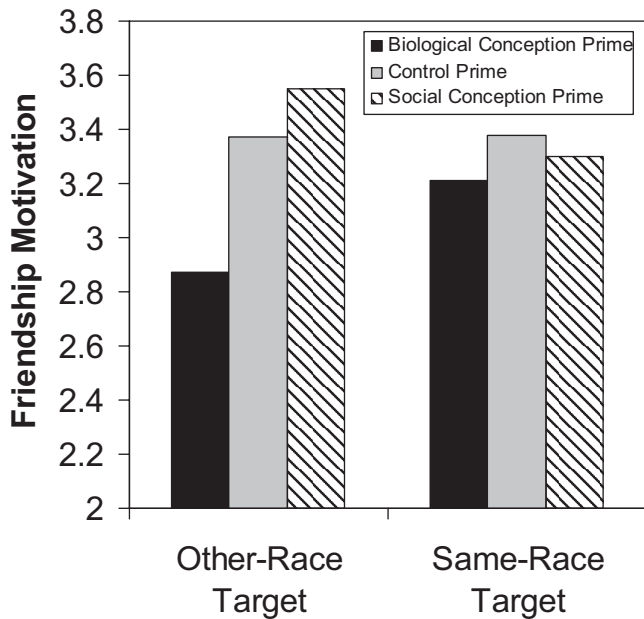


Figure 1. Race conceptions prime affects motivation for friendship with other-race but not same-race targets.

race lines. In comparison with those led to conceive of race as social, those led to conceive of race as biological were less likely to seek further friendship with an outgroup target. This study reinforces the correlational findings of Study 3 by demonstrating that primed race conceptions can have a direct causal effect on friendship motivation.

The results further show that friendship motivation in the biological conception condition—but not the social conception condition—differed significantly from friendship motivation in the control condition. This suggests that it is views of race as biologically derived, not views of race as socially constructed, that drive the (negative) effects on motivation for interracial friendship. Last, race conceptions primes affected friendship motivation only for participants who viewed an other-race (Black) target, implying that thinking of race as biological affects perceptions of potential outgroup friends and not of potential friends generally.

Recent work demonstrates that through training and practice, individuals can learn to approach racial outgroup targets more readily (Kawakami, Phillips, Steele, & Dovidio, 2007). However, the present study suggests that inclinations to approach outgroup members may be undermined with each exposure to everyday information suggesting biological origins of race. In Study 5, we examined the extent to which race conceptions influence people's willingness to extend contact with a racial outgroup member. More specifically, we explore the extent to which approach tendencies are driven by associational preferences, over and above people's anxiety about the interaction.

Study 5

In the final study, we sought to extend the results of Studies 3 and 4, which showed reduced motivation to engage in social contact with racial outgroup members, and test the behavioral

consequences of such motivation. We again experimentally manipulated participants' conceptions of race in this study and presented them with an other-race target. In this study, however, participants believed that they would actually interact with the target and had the opportunity to commit to future, longer-term engagement with him or her. We hypothesized that individuals who were exposed to information confirming the link between racial categories and underlying biology would be less willing to commit to a longer-term relationship with a racial outgroup member, compared with individuals exposed to information disconfirming that link.

Method

Participants

The participants were 161 University of California, Berkeley, undergraduate students (62% women) who completed the study in exchange for partial course credit. The ethnic makeup of the sample was 55% Asian, 21% White, 9% Latino, 6% Middle Eastern/South Asian, 3% Black, and 6% mixed or other backgrounds. The 5 participants who described themselves as Black were dropped from the study prior to analysis because the Black target person described in study materials would not have been an other-race target for those participants.

Materials

Primes. The primes used in the biological conception and social conception conditions were the same scientific articles used in Studies 2 and 4. (The control article from Study 4 was not used here.)

Partner self-descriptions. Participants read six self-description sheets that were ostensibly completed by members of another group of participants with whom they would shortly be interacting. Descriptions of hobbies and interests were designed to be broad, evaluatively neutral, and applicable to a wide range of college students (e.g., "likes pizza"). Five of the students were described as being White, and the sixth student was described as being Black. Of the five White students, two were described as male and three as female. The Black student's gender varied to match the gender of study participants, so that each participant's anticipated interaction with a Black partner was cross-race but not cross-gender.

Pilot participants ($N = 31$) previously indicated how much they would like someone who matched each self-description (with race information excluded). Likeability means on a 9-point scale ranged from 5.0 to 6.7, with a 5.9 mean for the target who would later be described to study participants as Black. This mean did not significantly differ from any of the other five means, suggesting that the Black target was not seen as more or less likeable than any of the other targets.

Procedure

Participants signed up for experimental sessions in groups of two to five people. Upon arrival, each participant was told that he or she had been randomly assigned to Group A and that Group B participants would be working in a separate room.

Priming manipulation. When all participants had arrived, the experimenter described the study as comprising two unrelated tasks, the first of which involved people's ability to understand scientific research as it is presented in the media. Participants were given one of the two race conception primes and were asked to review it for 5 min. At that point, the experimenter gave the participants a questionnaire intended to reinforce the cover story; participants answered basic comprehension questions about the article's content.

Introduction of work partners. The experimenter then introduced the "second task," which was described as being about factors that affect people's ability to work well together in organizations or workplace groups. Participants were told they would be soon working on a challenging business problem in pairs, with each member of Group A being assigned to work with a member of Group B. The experimenter described the study as focusing on whether people work better together when they are able to choose their partners versus being randomly assigned to partners and indicated that the present group of participants would be shortly assigned to either a choice or no-choice condition. Participants then received blank self-description forms in which they described their own demographic characteristics, hobbies, career goals, and working styles; these were then traded with the set of six self-descriptions that had supposedly been completed by members of Group B. Participants then were given several minutes to review the self-descriptions and were asked to consider "who you think you'll get along well with and work well with."

Measurement of interest in future sessions and interaction expectations. After participants had read self-descriptions from Group B, the experimenter returned and announced that both groups had been randomly assigned to be in the no-choice condition, meaning that they would be assigned to work with a specific Group B partner rather than getting to choose one. The experimenter then passed out a form indicating the name of the person to whom each participant was assigned; in fact, each participant was assigned to work with the Black target.

The dependent variable of primary interest was whether participants, once assigned to a partner of another race, would be willing to take steps to further this relationship. Thus, we told participants they had the opportunity to participate in future experimental sessions for pay, in which they would work with the same partner they had just been assigned to. Participants indicated whether they were interested in signing up for future paid sessions and, if so, how many sessions they were willing to participate in, from 1 to 4.

We also asked participants to indicate how positive or negative they expected the upcoming interaction to be. Specifically, participants responded to 10 items, all using 7-point scales, that focused on possible concerns about the interaction (e.g., "How likely is it that you will enjoy working with your partner?" "How confident are you that you and your partner will develop a solution to the problem?" "How similar do you feel to your partner?" and "I expect this to be an awkward interaction").

After completing this form, participants were given a blank sheet and asked to write down all the information that they recalled from their partner's self-description form. This served as a check to ensure that all participants had noted that the partner they had been assigned to was Black. Finally, participants were informed that no subsequent interaction would take place. They were debriefed, thanked, and dismissed.

Results

Five participants failed to report that the partner to whom they had been assigned was Black. These participants were excluded from subsequent analyses, as it was not clear that they were making their decisions with respect to a partner of a different racial group. All participants in the biological conception condition correctly recalled from the prime article that race was detected at an above-chance rate from patients' DNA, and all participants in the social conception condition correctly recalled from the prime article that race was not detected from patients' DNA.

A chi-square analysis was performed on the dichotomous dependent variable of willingness to sign up for future sessions with the same partner as a function of priming condition. Results indicated that fewer than half (40%) of participants primed with the biological conception article were willing to continue their relationship with an outgroup target, whereas the majority (59%) of participants primed with the social conception article were willing to continue the relationship. These proportions differed significantly, $\chi^2(1, N = 151) = 5.52, p = .02$.

Among those who did agree to future sessions, condition did not significantly relate to the number of sessions participants signed up for, $F(1, 73) = 1.68, ns$. As suspected, condition was unrelated to the dependent variable averaging the 10 interaction expectation items ($\alpha = .81; M_{\text{Biological}} = 4.58, M_{\text{Social}} = 4.62$), $F(1, 149) < 1$, indicating that participants in both conditions expected the upcoming social interaction with their partner to be equally positive.

Discussion

This study replicates and reinforces the results of Studies 3 and 4 by demonstrating that views of race as biologically derived can cool interest in interacting with racial outgroup members. Study 5 proceeds further by demonstrating one consequence of this form of disregard—a failure to foster a nascent relationship with a racial outgroup member. Across conditions, almost exactly half (49%) of participants were willing to further this relationship by signing up for future interaction sessions, lending support to the idea that people in general are quite torn when faced with a potential interracial friendship (Plant & Butz, 2006). These data suggest that their choices may be influenced by whether they understand race to be biologically or socially derived.

Notably, the difference in willingness to engage in future interaction emerged despite the fact that both groups of participants expected the initial interaction with an outgroup member to be equally positive. This result may suggest that biological conception participants' relative unwillingness to maintain contact with the outgroup target may stem not from a sense that the interaction is likely to go poorly but from some deeper calculation of whether the interaction is likely to be worthwhile. Previous studies have established that individuals less readily affiliate with, help, and trust others whom they recognize to be nonkin relative to kin (DeBruine, 2002; Hamilton, 1964; Kruger, 2003; O'Gorman et al., 2005). Perceiving race as biological in origin, as in the present study, may reinforce a sense of remoteness that dampens the desire for social connection or friendship with members of the biological outgroup.

General Discussion

In these studies, we sought to elucidate the conflict that modern Americans experience when thinking about race: Race can be viewed as a product of the sociocultural environment as well as the physical body. At the outset of the article, we portrayed two hypothetical individuals who, by making everyday observations about the role race plays in their own and others' lives, came to very different conclusions about whether to think of race as a biological or a social construct. On the surface, these individuals' disparate conclusions may not appear to be of great consequence. Both people's opinions may be understandable and even socially acceptable. Neither view necessarily comes with a negative evaluation of any racial group, and both people certainly have captured part of the truth about race in America.

Even so, the evidence presented here suggests that the views of these two individuals may lead to very different outcomes when it comes to perceiving racial outgroups and interacting with their members. Both individuals may readily acknowledge inequities between racial groups in such critical domains as income and education but may vary in how accepting they are of them (Study 1) as well as their emotional response to such inequities (Study 2). The person who views race as socially based is likely to perceive that she as an individual, and society as a whole, can and should effect change to narrow the outcome gaps between groups. The person who views race as biologically derived, meanwhile, is likely to attribute racial inequities to inherent trait differences between Black and White Americans and to be significantly less concerned about seeking redress.

These findings may provide insight into controversies over public policies designed to address social inequities between Black and White Americans, including affirmative action. In their work on laissez-faire racism, sociologist Lawrence Bobo and his colleagues point to a disconnect between explicit negative views of Black Americans (which have decreased over time) and opposition to policies that address racial inequity (which has increased over time; Bobo, Kluegel, & Smith, 1997; Bobo & Smith, 1988). They argued that with the advent of the civil rights movement and the fall of institutionalized segregation laws, explicit anti-Black racism has been replaced with an insensitivity toward Blacks and a lack of concern about the structural and cultural causes that are implicated in the persistence of Blacks' disadvantaged position.

In other words, many White Americans now take a passive (or laissez-faire) approach to racial problems—not causing explicit harm but not doing anything to help either. The present data suggest that this form of passive disregard may be exacerbated or justified by viewing race as biologically derived. That is, conceiving of race as biological provides justification for members of dominant groups to simply turn away from the injustices experienced by racial outgroup members (Jost & Hunyady, 2005; Wakslak, Jost, Tyler, & Chen, 2007).

The two hypothetical individuals we described also are likely to differ in their views toward individual members of racial outgroups. Relative to the person who views race as socially constructed, the person who views race as biological is likely to have a less diverse social network of friends, colleagues, and romantic partners (Study 3) and be less motivated to seek out contact or foster relationships with racial outgroup members when the opportunity arises (Studies 3–5). As with the participants in Studies

1 and 2, whose hearts were not stirred when presented with the inequities experienced by Blacks, participants in Studies 3–5 were less likely to approach individual outgroup members if they chronically held (Study 3) or were primed with (Studies 4 and 5) a biological conception of race.

These results imply that a view of race as biologically derived may be implicated in the paradox of the racial status quo, in which explicitly expressed anti-Black attitudes are increasingly rare but neighborhoods, schools, and churches nonetheless remain strongly segregated (Massey & Denton, 1993). Such persistent segregation reduces opportunities for the meaningful, mutually respectful contact shown to be critical to fostering positive intergroup relationships (Allport, 1954; Dovidio, Gaertner, & Kawakami, 2003; Pettigrew & Tropp, 2006).

This paradox is consistent with the idea that conceiving of racial group membership as biologically derived provides justification for disregarding others' disadvantage. Indeed, Bobo (2004) reported that very few Whites (5%) in recent polling data said that they "very often" feel sympathy or admiration for Blacks, implying a cultural climate that is "seriously doubtful of the full humanity of African Americans" (p. 22). To individuals who temporarily or chronically view race as biologically based, racial outgroup members may seem less like kin and therefore less deserving of their attention, affection, or assistance (DeBruine, 2002; Hamilton, 1964; Kruger, 2003; O'Gorman et al., 2005). Stephan and Finlay (1999) made a similar argument in their discussion of reactive empathy, which is a backlash response to the suffering of others (including racial outgroup members) that can result in aversion and avoidance rather than assistance. A biological conception of race may be especially likely to induce such reactions because it may reduce the sense of connectedness—of shared humanity that crosses racial lines and makes outgroup members worthy of attention. Indeed, research by Leyens and colleagues demonstrates a direct relationship between biological essentialism and the tendency to perceive outgroups as not fully human. Specifically, the tendency to perceive outgroup members as less likely to experience uniquely human emotions (Leyens et al., 2000; Paladino et al., 2002) is mediated by a tendency to perceive outgroups in essentialistic terms (Leyens et al., 2003).

Race in the Public Eye

One implication of the results presented here, particularly the experiments that used real or constructed media reports to represent racial issues (Studies 2, 4, and 5), is that mere discussions of race and racial issues in the lay and scientific media may have nontrivial consequences for intergroup relations in our communities. Simply talking about race in a way that focuses primarily on biological determinants of racial categories may fundamentally change the ways that people encounter each other in social situations. Condit and colleagues (2004) illustrated this point clearly by demonstrating that exposure to a public service announcement purportedly intended to improve the health behaviors of Blacks increased anti-Black prejudice scores when it included a subtle reference to a biological underpinning of race ("Research studies indicate there are some medical treatments that work better for Black men and women"), relative to a control announcement.

Imagine two people, each driving to work to meet a new coworker while listening to talk radio. In one car, a doctor is

explaining why she uses racial group membership to tailor her diagnoses and treatment decisions, arguing that the underlying biology of race affects how individuals respond to different drugs (Satel, 2002). In another car, a historian is describing the changing boundaries of racial groups in American history, pointing out that “color” lines have typically been drawn to correspond to economic and political inequities, not physical differences (Jacobson, 1998). If the new coworker is of a different racial group than our drivers, his or her outcomes may well be affected by something as innocuous as the topic of drive time radio.

Biological Conceptions of Race: Consequences for Historically Disadvantaged Targets

To the extent that race is understood to be biologically determined, members of all racial groups may exhibit a tendency to attend to and extend themselves to racial ingroup members more than to outgroup members. In Study 3, for example, we found that race conceptions predicted friendship motivation for a wide variety of racial groups. People need not be members of historically disadvantaged groups to either experience or deliver disregard.

We argue, however, that the long-term consequences of disregard for historically disadvantaged groups in particular are likely to be profound. Support for public policies designed to decrease racial disparities between Blacks and Whites, for example, are likely to be met with less support to the extent that race is viewed as biologically determined. Disadvantaged groups may remain at the margins of society while other groups advance—not unlike the situation described for Black men in the *New York Times* article used as a stimulus in Study 2. For the disadvantaged, disregard becomes a more general civic disregard that operates at both the intergroup and interpersonal levels to deepen alienation and marginalization. Not only are members of disadvantaged groups—who routinely experience disregard—vulnerable to social and economic isolation but also to a decline in feelings of belonging and to depressed cognitive performance (Walton & Cohen, 2007). Close connections to and acceptance by other people are essential to our experiences of well-being and to our very humanity (Diener & Oishi, 2005). Without this, we all suffer.

References

- Allport, G. W. (1954). *The nature of prejudice*. Cambridge, MA: Addison-Wesley.
- Bamshad, M. J., & Olson, S. E. (2003, November 10). Does race exist? *Scientific American*, pp. 78–85.
- Bastian, B., & Haslam, N. (2006). Psychological essentialism and stereotype endorsement. *Journal of Experimental Social Psychology*, *42*, 228–235.
- Bobo, L. D. (2004). Inequalities that endure? Racial ideology, American politics, and the peculiar role of the social sciences. In L. D. Bobo (Ed.), *The changing terrain of race and ethnicity* (pp. 13–42). New York: Russell Sage.
- Bobo, L. D., Kluegel, J. R., & Smith, R. A. (1997). Laissez-faire racism: The crystallization of a kinder, gentler, antiblack ideology. In S. A. Tuch & J. K. Martin (Eds.), *Racial attitudes in the 1990s: Continuity and change* (pp. 15–44). Westport, CT: Praeger.
- Bobo, L. D., & Smith, R. A. (1988). From Jim Crow racism to laissez-faire racism: The transformation of racial attitudes. In L. D. Bobo & R. A. Smith (Eds.), *Beyond pluralism* (pp. 182–220). Urbana, IL: University of Illinois Press.
- Brescoll, V., & LaFrance, M. (2004). The correlates and consequences of newspaper reports of research on sex differences. *Psychological Science*, *15*, 515–520.
- Brigham, J. C. (1993). College students' racial attitudes. *Journal of Applied Social Psychology*, *23*, 1933–1967.
- Chiu, C., Hong, Y., & Dweck, C. S. (1997). Lay dispositionism and implicit theories of personality. *Journal of Personality and Social Psychology*, *73*, 19–30.
- Condit, C. M., Parrott, R. L., Bates, B. R., Bevan, J., & Achter, P. J. (2004). Exploration of the impact of messages about genes and race on lay attitudes. *Clinical Genetics*, *66*, 402–408.
- Crowne, D. P., & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology*, *24*, 349–354.
- Davis, M. M., Bruckman, D., Cabana, M. D., Clark, S. J., Dombkowski, K. J., Kemper, A. R., et al. (2001). Constructive use of race and ethnicity variables. *Archives of Pediatric and Adolescent Medicine*, *155*, 973.
- DeBruine, L. M. (2002). Facial resemblance enhances trust. *Proceedings of the Royal Society of London*, *269*, 1307–1312.
- Diener, E., & Oishi, S. (2005). The nonobvious social psychology of happiness. *Psychological Inquiry*, *16*, 162–167.
- Dovidio, J. F., Gaertner, S. L., & Kawakami, K. (2003). Intergroup contact: The past, present, and the future. *Group Processes and Intergroup Relations*, *6*, 5–21.
- Dovidio, J. F., Kawakami, K., & Gaertner, S. L. (2002). Implicit and explicit prejudice and interracial interaction. *Journal of Personality and Social Psychology*, *82*, 62–68.
- Dunton, B. C., & Fazio, R. H. (1997). An individual difference measure of motivation to control prejudiced reactions. *Personality and Social Psychology Bulletin*, *23*, 316–326.
- Federico, C. M., & Sidanius, J. (2002). Racism, ideology, and affirmative action revisited: The antecedents and consequences of “principled objections” to affirmative action. *Journal of Personality and Social Psychology*, *82*, 488–502.
- Hamilton, W. D. (1964). The genetical evolution of social behavior, Part I and II. *Journal of Theoretical Biology*, *7*, 1–52.
- Haslam, N., Bastian, B., Bain, P., & Kashima, Y. (2006). Psychological essentialism, implicit theories, and intergroup relations. *Group Processes and Intergroup Relations*, *9*, 63–76.
- Hoffman, C., & Hurst, N. (1990). Gender stereotypes: Perception or rationalization? *Journal of Personality and Social Psychology*, *58*, 197–208.
- Jacobson, M. F. (1998). *Whiteness of a different color: European immigrants and the alchemy of race*. Cambridge, MA: Harvard University Press.
- Jayaratne, T. E., Ybarra, O., Sheldon, J. P., Feldbaum, M., Pfeffer, C. A., & Petty, E. M. (2006). White Americans' genetic lay theories of race differences and sexual orientation: Their relationship with prejudice toward Blacks, and gay men and lesbians. *Group Processes and Intergroup Relations*, *9*, 77–94.
- Jost, J. T. (2001). Outgroup favoritism and the theory of system justification: A paradigm for investigating the effects of socioeconomic success on stereotype content. In G. Moskowitz (Ed.), *Cognitive social psychology: The Princeton symposium on the legacy and future of social cognition* (pp. 89–102). Mahwah, NJ: Erlbaum.
- Jost, J. T., & Banaji, M. R. (1994). The role of stereotyping in system-justification and the production of false consciousness. *British Journal of Social Psychology*, *33*, 1–27.
- Jost, J. T., & Hunyady, O. (2005). Antecedents and consequences of system-justifying ideologies. *Current Directions in Psychological Science*, *14*, 260–265.
- Kawakami, K., Phills, C. E., Steele, J. R., & Dovidio, J. F. (2007). (Close) distance makes the heart grow fonder: Improving implicit racial attitudes

- and interracial interactions through approach behaviors. *Journal of Personality and Social Psychology*, 92, 957–971.
- Keller, J. (2005). In genes we trust: The biological component of psychological essentialism and its relationship to mechanisms of motivated social cognition. *Journal of Personality and Social Psychology*, 88, 686–702.
- Kinder, D. R., & Sears, D. O. (1981). Prejudice and politics: Symbolic racism versus racial threats to the good life. *Journal of Personality and Social Psychology*, 40, 414–431.
- Kristof, N. D. (2003, July 11). Is race real? *New York Times*. Retrieved December 17, 2007, from <http://www.nytimes.com>
- Kruger, D. J. (2003). Evolution and altruism: Combining psychological mediators with naturally selected tendencies. *Evolution and Human Behavior*, 24, 118–125.
- Leyens, J.-P., Cortes, B., Demoulin, S., Dovidio, J. F., Fiske, S. T., Gaunt, R., et al. (2003). Emotional prejudice, essentialism, and nationalism. *European Journal of Social Psychology*, 33, 703–717.
- Leyens, J.-P., Paladino, M.-P., Rodriguez-Torres, R., Vaes, J., Demoulin, S., Rodriguez-Perez, A., et al. (2000). The emotional side of prejudice: The attribution of secondary emotions to ingroups and outgroups. *Personality and Social Psychology Review*, 4, 186–197.
- Massey, D., & Denton, N. (1993). *American apartheid: Segregation and the making of the underclass*. Cambridge, MA: Harvard University Press.
- McConahay, J. B. (1986). Modern racism, ambivalence, and the Modern Racism Scale. In J. F. Dovidio & S. L. Gaertner (Eds.), *Prejudice, discrimination, and racism* (pp. 91–125). Orlando, FL: Academic Press.
- McConahay, J. B., Hardee, B. B., & Batts, V. (1981). Has racism declined in America? It depends on who is asking and what is asked. *Journal of Conflict Resolution*, 25, 563–579.
- O’Gorman, R., Wilson, D. S., & Miller, R. R. (2005). Altruistic punishing and helping differ in sensitivity to relatedness, friendship, and future interactions. *Evolution and Human Behavior*, 26, 375–387.
- Paladino, M.-P., Leyens, J.-P., Rodriguez, R., Rodriguez, A., Gaunt, R., & Demoulin, S. (2002). Differential association of uniquely and non uniquely human emotions with the ingroup and the outgroup. *Group Processes and Intergroup Relations*, 5, 105–117.
- Pettigrew, T. F., & Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology*, 90, 751–783.
- Phinney, J. S. (1992). The multigroup ethnic identity measure: A new scale for use with diverse groups. *Journal of Adolescent Research*, 7, 156–176.
- Plant, E. A., & Butz, D. A. (2006). The causes and consequences of an avoidance-focus for interracial interactions. *Personality and Social Psychology Bulletin*, 32, 833–846.
- Plant, E. A., & Devine, P. G. (1998). Internal and external motivation to respond without prejudice. *Journal of Personality and Social Psychology*, 75, 811–832.
- Pratto, F., Sidanius, J., Stallworth, L. M., & Malle, B. F. (1994). Social dominance orientation: A personality variable predicting social and political attitudes. *Journal of Personality and Social Psychology*, 67, 741–763.
- Prentice, D. A., & Miller, D. T. (2007). Psychological essentialism of human categories. *Current Directions in Psychological Science*, 16, 202–206.
- Satel, S. (2002, May 5). I am a racially profiling doctor. *New York Times Magazine*, p. 56.
- Saul, S. (2005, June 24). FDA approves a heart drug for African-Americans. *New York Times*. Retrieved December 17, 2007, from <http://nytimes.com>
- Sears, D. O. (1988). Symbolic racism. In P. A. Katz & D. A. Taylor (Eds.), *Eliminating racism: Profiles in controversy* (pp. 53–84). New York: Plenum Press.
- Sears, D. O., van Laar, C., Carrillo, M., & Kosterman, R. (1997). Is it really racism? The origins of White Americans’ opposition to race-targeted politics. *The Public Opinion Quarterly*, 61(1), 16–53.
- Shelton, J. N. (2003). Interpersonal concerns in social encounters between majority and minority group members. *Group Processes and Intergroup Relations*, 6, 171–185.
- Shelton, J. N., & Richeson, J. A. (2005). Intergroup contact and pluralistic ignorance. *Journal of Personality and Social Psychology*, 88, 91–107.
- Shelton, J. N., Richeson, J. A., & Vorauer, J. (2006). Threatened identities and interethnic interaction. *European Review of Social Psychology*, 17, 321–358.
- Smedley, A., & Smedley, B. D. (2005). Race as biology is fiction, racism as a social problem is real. *American Psychologist*, 60, 16–26.
- Stephan, W. G., & Finlay, K. (1999). The role of empathy in improving intergroup relations. *Journal of Social Issues*, 55, 729–743.
- Stolberg, S. G. (2001). Shouldn’t a pill be colorblind? *The New York Times*, p. 1.
- Towles-Schwen, T., & Fazio, R. H. (2003). Choosing social situations: The relation between automatically activated racial attitudes and anticipated comfort interacting with African Americans. *Personality and Social Psychology Bulletin*, 29, 170–182.
- Towles-Schwen, T., & Fazio, R. H. (2006). Automatically activated racial attitudes as predictors of the success of interracial roommate relationships. *Journal of Experimental Social Psychology*, 42, 698–705.
- Vorauer, J., & Sakamoto, Y. (2006). I thought we could be friends, but . . . Systematic miscommunication and defensive distancing as obstacles to cross-group friendship formation. *Psychological Science*, 17, 326–331.
- Wakslak, C. J., Jost, J. T., Tyler, T. R., & Chen, E. S. (2007). Moral outrage mediates the dampening effect of system justification on support for redistributive social policies. *Psychological Science*, 18, 267–274.
- Walton, G. M., & Cohen, G. L. (2007). A question of belonging: Race, social fit, and achievement. *Journal of Personality and Social Psychology*, 92, 82–96.
- Yzerbyt, V., Estrada, C., Corneille, O., Seron, E., & Demoulin, S. (2004). Subjective essentialism in action: Self-anchoring and social control as consequences of fundamental social divides. In V. Yzerbyt, C. M. Judd, & O. Corneille (Eds.), *The psychology of group perception: Contributions to the study of homogeneity, entitativity, and essentialism* (pp. 101–124). New York: Psychology Press.
- Yzerbyt, V., & Rogier, A. (2001). Blame it on the group: Entitativity, subjective essentialism, and social attribution. In J. T. Jost & B. Major (Eds.), *The psychology of legitimacy: Emerging perspectives on ideology, justice, and intergroup relations* (pp. 103–134). Cambridge, England: Cambridge University Press.
- Yzerbyt, V., Rogier, A., & Fiske, S. T. (1998). Group entitativity and social attribution: On translating situational constraints into stereotypes. *Personality and Social Psychology Bulletin*, 24, 1089–1103.

(Appendixes follow)

Appendix A

Race Conceptions Scale Items

1. If a Black American family traveled around the world, people they met would probably think of them as Black, too.
2. The physical features of different racial groups haven't really changed much over the centuries.
3. The same racial categories have pretty much always existed.
4. It's impossible to determine how a person will be racially categorized by examining their DNA. (R)
5. No one can change his or her race—you are who you are.
6. If a White American family traveled around the world, people they met would probably think of them as White, too.
7. It's natural to notice the racial group to which people belong.
8. I believe physical features determine race.
9. Generally speaking, two Black people will always look more similar to each other than a Black person and a White person ever would.
10. How a person is defined racially depends on the social context. (R)
11. Siblings born to the same parents will always be of the same race as each other.
12. Young children probably learn about which people fall into which racial groups automatically, without much help from adults.
13. A person's race is fixed at birth.
14. The political climate can dictate whether someone is categorized as Black or White. (R)
15. In 200 years, society will use basically the same racial categories.
16. There's agreement across cultures about which racial groups people fall into.
17. The average person is highly accurate at identifying people by race.
18. People who are of different races may look quite similar to each other. (R)
19. Racial categories haven't always existed in the world. (R)
20. It's easy to tell what race people are by looking at them.
21. Racial groups are primarily determined by biology.
22. It's possible to be a full member of more than one race. (R)

Note. Participants rated items on a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). When the scale is scored, a higher score indicates a more physical conception of race. (R) indicates a reverse-coded item.

Appendix B

Text of News Article Used to Prime a Biological Conception of Race in Studies 2, 4, and 5

“Scientists Pinpoint Genetic Underpinnings of Race”

CHARLOTTESVILLE—Scientists working on mapping the origins of life through the Human Genome Project have uncovered some genetic codes that they believe can be used as indicators of racial background.

“Up till now, [we] weren't able to determine a person's race based just on DNA,” said Robert Kaminsky, a University of Virginia scientist and lead author of the study, which was just released in the prestigious journal *Gene*. “But now we're able to use some of the genetic cues to skin color and other physical features to guess at what a person may look like, based on a very small genetic sample.”

Dr. Kaminsky and a graduate student, Lisa Faridany, along with colleague Anthony Schmidt of the Georgetown Medical Center, have been working for several years on mapping the genotypic expressions involved in skin color and other phenotypic physical features. They have focused particularly on the melanocortin 1 receptor (MCR1) gene, which is implicated most powerfully in skin color. The present study explores the link between this gene and the phenylalanine hydroxylase pro-

tein, which is involved in melanin production, in varying amounts for different racial groups.

The researchers used skin, blood, and other tissue samples from hospital patients whose race was indicated in their charts, but was kept hidden from lab members until the genetic analyses were complete.

“We found that once we had a good idea of where the genetic components to some of these key physical features were located, we were able to correctly guess the patients' racial backgrounds 69% of the time, which is well above chance rate,” Dr. Kaminsky said. “And with Black and White patients in particular, our success rates were even higher.”

Their results add to the growing body of evidence that so much of who we are as people can be traced to our genetic origins—including race.

“This doesn't mean that there aren't environmental influences on race, just like everything else,” Dr. Kaminsky cautioned. “But in the end, we obtain our genetic material from our parents, so we generally inherit their race along with everything else.”

He pointed to evolutionary theories as to why humans might have evolved to have different physical appearances. For example, the melanin that produces a dark skin color among people of African heritage may have served as a life-saving protection against strong sun exposure, he said. And among people living in what is now Northern Europe, their relatively lesser access to

sunlight was aided by fairer skin, which allows for greater absorption of Vitamin D.

Dr. Kaminsky and his colleagues are continuing their contribution to the Human Genome Project with current work on the genetic underpinnings of depression and other mood disorders.

Appendix C

Text of News Article Used to Prime a Social Conception of Race in Studies 2, 4, and 5

“Scientists Reveal That Race Has No Genetic Basis”

CHARLOTTESVILLE—Scientists working on mapping the origins of life through the Human Genome Project have definitively demonstrated that no genetic codes can be tied to racial background.

“Up till now, there was a big question [in the scientific community] about whether we could determine a person’s race based just on DNA,” says Robert Kaminsky, a University of Virginia scientist and lead author of the study, which was just released in the prestigious journal *Gene*. “But now we know the answer—there are no genetic markers that indicate what racial group a person belongs to.”

Dr. Kaminsky and a graduate student, Lisa Faridany, along with colleague Anthony Schmidt of the Georgetown Medical Center, have been working for several years on mapping the genotypic expressions involved in skin color and other phenotypic physical features. They have focused particularly on the melanocortin 1 receptor (MCR1) gene, which is implicated most powerfully in skin color. The present study explores the link between this gene and the phenylalanine hydroxylase protein, which is involved in melanin production, in varying amounts for different people.

The researchers used skin, blood, and other tissue samples from hospital patients whose race was indicated in their charts, but was kept hidden from lab members until the genetic analyses were complete.

“We found that even when we had a good idea of where the genetic components to some of these key physical features were located, we were able to correctly guess the patients’ racial back-

grounds only 27% of the time, which is really no better than chance rate,” Dr. Kaminsky said. “There’s just no one cue or set of cues that indicates, say, whether someone is Black or White.”

Their results add to the growing body of evidence that although genes do play an important role in who we are, social and environmental factors may in many circumstances be even more powerful.

“This doesn’t mean that there aren’t hereditary components to physical appearance,” Dr. Kaminsky cautioned. “We do inherit our physical appearance from our parents, but the practice of classifying people into racial groups based on certain patterns of physical appearance is entirely cultural in origin. There’s just no genetic basis for it.”

He pointed to evidence that each racial group has more variability within the group in any given physical dimension, such as skin color, than exists between any two groups. He also added that racial classification is a relatively recent development in human history—even though people’s physical appearances have been relatively stable over time, the categories into which people are classified change constantly according to the political climate.

Dr. Kaminsky and his colleagues are continuing their contribution to the Human Genome Project with current work on the genetic underpinnings of depression and other mood disorders.

Received October 21, 2005

Revision received September 21, 2007

Accepted October 5, 2007 ■