



# Americans misperceive racial economic equality

Michael W. Kraus<sup>a,1</sup>, Julian M. Rucker<sup>b</sup>, and Jennifer A. Richeson<sup>b,c,d,e,1</sup>

<sup>a</sup>School of Management, Yale University, New Haven, CT 06520; <sup>b</sup>Department of Psychology, Yale University, New Haven, CT 06520; <sup>c</sup>Institution for Social and Policy Studies, Yale University, New Haven, CT 06520; <sup>d</sup>Department of Psychology, Northwestern University, Evanston, IL 60208; and <sup>e</sup>Institute for Policy Research, Northwestern University, Evanston, IL 60208

This contribution is part of the special series of Inaugural Articles by members of the National Academy of Sciences elected in 2015.

Contributed by Jennifer A. Richeson, August 10, 2017 (sent for review May 9, 2017; reviewed by Shai Davidai and James Jones)

**The present research documents the widespread misperception of race-based economic equality in the United States. Across four studies ( $n = 1,377$ ) sampling White and Black Americans from the top and bottom of the national income distribution, participants overestimated progress toward Black–White economic equality, largely driven by estimates of greater current equality than actually exists according to national statistics. Overestimates of current levels of racial economic equality, on average, outstripped reality by roughly 25% and were predicted by greater belief in a just world and social network racial diversity (among Black participants). Whereas high-income White respondents tended to overestimate racial economic equality in the past, Black respondents, on average, underestimated the degree of past racial economic equality. Two follow-up experiments further revealed that making societal racial discrimination salient increased the accuracy of Whites' estimates of Black–White economic equality, whereas encouraging Whites to anchor their estimates on their own circumstances increased their tendency to overestimate current racial economic equality. Overall, these findings suggest a profound misperception of and unfounded optimism regarding societal race-based economic equality—a misperception that is likely to have any number of important policy implications.**

economic inequality | racial disparities | socioeconomic status | racial stratification | motivated perception

Despite some indications of racial progress in American society (e.g., the Supreme Court decision in *Brown vs. Board of Education of Topeka Kansas*, the 2008 election of Barack Obama as President of the United States), racial economic inequality continues to be strikingly high (1–3). For instance, a recent Pew Research analysis of the Current Population Survey (CPS) found that racial gaps in income and earnings, with White households earning more than their Black counterparts, remained largely constant or even widened between 1967 and 2015 (3, 4). Before citizens and policymakers can fully understand and appreciate the potential societal consequences of such a stark racial divide in economic outcomes, individuals must first be aware of its existence. Consequently, the primary aim of the present work was to discern how aware Americans actually are of current levels of racial economic inequality.

Given the magnitude and persistence of Black–White economic inequality in the United States, it is hard to believe that Americans are largely unaware of it. There are, however, a number of psychological and sociostructural factors that may make tracking Americans' economic circumstances, and their racial correlates, quite unlikely. For instance, norms regarding the expression of racial prejudice shifted between the 1950 and 2000s, decreasing the occurrence of overt expressions of racism (5–7). Perhaps in part because of these shifting norms, attitudes regarding Black Americans and several self-reported markers of racial progress (e.g., support for interracial marriage and residential integration) generally improved on national surveys from 1992 until 2015 (8). These seemingly positive trends in general and the salience of high-status (e.g., Barack Obama) and/or high net worth (e.g., Oprah Winfrey, LeBron James) Black exemplars might lead to the expectation that economic racial disparities have also improved

along a similar trajectory or have even closed completely (7). Based on this analysis, we predicted that Americans would overestimate the progress the country has made toward racial economic equality and that these judgments of racial economic progress would be driven, in particular, by overestimates of current rather than past levels of racial economic equality.

## Status Characteristics, Motivation, and Network Diversity

Although we expected to observe a general tendency for participants to overestimate racial economic equality and progress toward it, emerging theory and research indicate that overestimates of racial economic equality are likely to differ as a function of individuals' status in society. Specifically, despite their greater potential access to the resources and training necessary to understand broad economic trends, individuals higher in what Berger and colleagues termed “status characteristics” (9)—in this case, high-income White Americans—were expected to overestimate current racial economic equality to a greater extent than other groups. We based this prediction on two factors that are known to correlate with relevant status characteristics and, we contend, should also predict overestimates of racial economic equality more broadly: (i) motivation to perceive societal outcomes as fair and (ii) social network racial diversity.

First, beliefs in societal fairness should predict the tendency to perceive greater progress toward racial economic equality because

## Significance

**Race-based economic inequality is both a defining and persistent feature of the United States that is at odds with national narratives regarding progress toward racial equality. This work examines perceptions of Black–White differences in economic outcomes, both in the past and present. We find that Americans, on average, systematically overestimate the extent to which society has progressed toward racial economic equality, driven largely by overestimates of current racial equality. Notably, White Americans generated more accurate estimates of Black–White equality when asked to consider the persistence of race-based discrimination in American society. The findings suggest a profound misperception of and misplaced optimism regarding contemporary societal racial economic equality—a misperception that is likely to have important consequences for public policy.**

Author contributions: M.W.K., J.M.R., and J.A.R. designed research; M.W.K. performed research; M.W.K. and J.M.R. analyzed data; M.W.K. and J.A.R. wrote the paper; and M.W.K. and J.A.R. interpreted results.

Reviewers: S.D., The New School; and J.J., University of Delaware.

The authors declare no conflict of interest.

Freely available online through the PNAS open access option.

Data deposition: The materials and data for all studies are available at the Open Science Framework website, <https://osf.io/vvrst/#>.

<sup>1</sup>To whom correspondence may be addressed. Email: michael.kraus@yale.edu or jennifer.richeson@yale.edu.

This article contains supporting information online at [www.pnas.org/lookup/suppl/doi:10.1073/pnas.1707719114/-DCSupplemental](http://www.pnas.org/lookup/suppl/doi:10.1073/pnas.1707719114/-DCSupplemental).

such beliefs typically stem from motivations to protect the self from the uncomfortable realization that societal outcomes (in this case with respect to race) are unfair (10). Americans in general are motivated to perceive society as fair, just, and meritocratic, despite evidence to the contrary (11), and such beliefs motivate hard work and striving in the service of future potential economic opportunities (12). Higher-status individuals are especially motivated to perceive society as fair and, thus, their elevated societal status as justified and merit-based (13–15) rather than due, at least in part, to luck and/or macrolevel structures or discriminatory systems (16). Research has found that inducing a self-protective motivation to perceive societal outcomes as fair increases overestimates of general socioeconomic mobility in society (17, 18) and may also encourage greater misperceptions of the extent to which societal wealth is distributed equitably across income quintiles (19) or salaries are distributed equitably between major company chief executives and unskilled workers (20). Similarly, motives to perceive the world as fair have been shown to lead White Americans to deny race-based societal privilege (21, 22) and may contribute to the tendency for White respondents to be three times as likely as Black respondents to conclude that race relations have improved in America (3). Taken together, this research suggests that motivated beliefs about societal fairness—which tend to be highest among high-status members of society—will predict overestimates of racial economic equality.

In addition to these motivational factors, it is likely that societal structural factors also play a role in shaping perceptions of racial economic equality. As a considerable body of research attests, developing an accurate sense of economic differences between racial groups is facilitated by a meaningful amount of intergroup contact or exposure to enable the gathering of relevant information across group divides (23). Not only are such encounters often uncomfortable, difficult for people to navigate (24, 25), and devoid of discussion of intergroup inequality (26), they are also a relatively rare occurrence. Not only do people prefer to affiliate and interact with members of meaningful ingroups (27–29), but, due to a number of factors, both volitional and involuntary, America's schools, communities, neighborhoods, and social networks remain largely racially and economically segregated (23, 30, 31).

That said, research suggests that the social networks of higher- and middle-income racial minorities are more racially and economically diverse than those of their similarly positioned White counterparts (32). In particular, high-income Black Americans have more racial and class diversity in their social networks than their White counterparts, in part due to the many factors that lead them to live in less affluent neighborhoods than White Americans of similar financial means (32). Hence, they are also more likely to have access to information regarding the relative advantages and disadvantages conferred to individuals based on the intersections of race and social class. By contrast, high-income White individuals are especially unlikely to have ties in their social networks that could offer evidence of the actual economic outcomes or lived experiences of most Black Americans. Consequently, we expected high-income White Americans, in particular, to systematically overestimate current levels of racial economic equality relative to similarly high-income Black Americans. That said, we also expected overestimates of equality to vary as a function of the racial homogeneity of participants' social networks.

### The Present Work

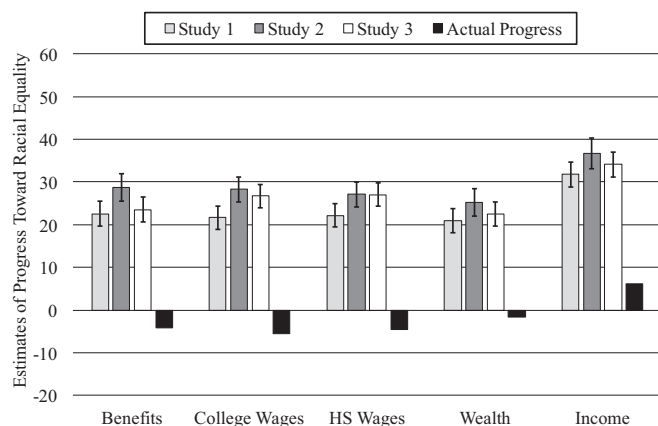
The present research assessed Black and White Americans' estimates of current and past Black–White economic equality in society. We predicted that Americans would overestimate the extent to which progress toward racial economic equality has been achieved, due, in large part, to overestimates of current levels of equality. We further predicted that this tendency would

be moderated by relevant social demographic status characteristics of the perceivers, namely their race (White or Black) and socioeconomic status (high or low income). Specifically, high-income White Americans were expected to overestimate current and past levels of racial economic equality more than either low-income White Americans or Black Americans across the income spectrum. In addition, we expected beliefs in societal fairness and social network racial diversity to predict overestimates of racial economic equality, and we tested the extent to which these factors account for how much high-income White Americans overestimate racial equality relative to members of the other groups. Last, we conducted two experiments to expand our understanding of the proposed psychological processes that lead White Americans to overestimate current levels of Black–White economic equality.

### Results

We examined perceptions of progress toward racial economic equality in four studies. The first three studies were similar in goals, methods, and measures. Participants first answered questions about general estimates of economic inequality in the United States before answering our focal questions about societal racial economic equality. Specifically, participants were asked to estimate differences between average Black and White Americans in the following five domains at one time point in the past and one recent (i.e., current) time point: (i) employer-provided benefits in 1979/2010; (ii) hourly wages of college graduates in 1973/2015; (iii) hourly wages of high school graduates in 1973/2015; (iv) annual income in 1947/2013; and (v), accumulated wealth in 1983/2010. Participants considered an average White individual or family earning \$100 US and were asked to estimate how much an average Black individual or family would earn using a scale that ranged from \$0–\$200 US. For the health care item, the question was framed in terms of families with health coverage, and participants indicated how many Black families would be covered if 100 similarly employed White families had coverage. Participants were reminded that an answer of 100 meant equality between Whites and Blacks.

Following these judgments, participants responded to items assessing our two proposed individual difference predictors: (i) perceived societal fairness using a six-item scale (11) assessing general beliefs in a just world; e.g., “I feel that people earn the rewards and punishments they get” (1 = strongly disagree; 6 = strongly agree) and (ii) social network racial diversity using a four-item scale (33) assessing the racial diversity of participants' social networks at work, in their current neighborhood, in their neighborhood while growing up, and in their current social relationships (1 = all of the same race; 4 = all of a different race). Participants also estimated societal economic inequality with respect to the total wealth held by people in the top quintile of wealth earners, relative to national statistics (19) and reported their gender, age, and educational attainment, which we used as covariates in subsequent analyses. Studies 1 ( $n = 444$ ) and 2 ( $n = 419$ ) assessed estimates of racial economic equality in a sample of White and Black participants from the top (greater than \$100,000 US) and bottom (less than \$40,001 US) of the US income distribution. Study 3 ( $n = 312$ ) recruited White participants from the top and bottom of the income distribution, and study 4 ( $n = 202$ ) enrolled a sample of mostly White participants without consideration of income. Detailed demographic information about the samples in each study is provided in [Tables S1](#) and [S2](#). Studies 2 and 3 were fully preregistered before data collection. [The time-stamped preregistration documents for studies 2 and 3 are available at the OSF (study 2: <https://osf.io/fnjr3/>; study 3: <https://osf.io/avc7j/>).] Because the primary outcome measures were identical across the first three studies, we report combined meta-analytic effect-size estimates (34) in the main text, but



**Fig. 1.** Comparison between participants' estimates of progress toward Black-White racial economic equality and actual progress based on economic data calculated using the CPS. Error bars indicate 95% CIs around the mean. Across all studies participants overestimated societal progress in employer-provided health benefits, college and high school (HS) wages, wealth, and income. All *P* values are <0.001.

see *Supporting Information* and *Tables S3-S10* for individual study results.

**Perceived Progress Toward Racial Economic Equality.** To test our central hypothesis, we calculated an index of actual progress toward racial equality based on statistics from the CPS (1) for each of the two time points; the difference between the CPS data estimates for past and current Black-White economic outcomes was our measure of actual progress. We calculated the same difference for participants' own estimates and then compared it with our index of actual progress. As depicted in Fig. 1, results confirmed our hypothesis that Americans, on average, misperceive the extent to which society has made progress toward racial economic equality,  $Z_{Combined} = 31.81$ ,  $P_{Combined} < 0.001$ . Indeed, participants overestimated racial economic progress by

more than 20 points across all studies and all domains of progress (Table S3).

These findings offer clear support for our central hypothesis, but because estimated progress is necessarily calculated based on estimates of current and past levels of equality, it is important to examine whether overestimates of progress are primarily due to inaccurate estimates of current levels of racial equality, past levels of racial inequality, or perhaps both. Consistent with predictions, however, separate examinations of the accuracy of participants' past and current estimates revealed that overestimates of current levels of racial economic equality contributed more to the tendency to overestimate the degree of racial progress than did inaccurate estimates of past levels of economic equality. Indeed, as shown in Table 1, in all studies participants tended to overestimate racial economic equality less (if at all) in the past (composite of past estimates  $R_{Combined} = -0.03$ ,  $Z_{Combined} = -0.83$ ,  $P_{Combined} = 0.407$ ) than in the present (composite of current estimates  $R_{Combined} = 0.71$ ,  $Z_{Combined} = 25.62$ ,  $P_{Combined} < 0.001$ ).

In addition to the accuracy of these composite estimates, Table 1 also presents the accuracy of participants' estimates of past and current Black-White equality on each of the five economic markers that make up the composite measure, again separately for each study. Consistent with the overall pattern, these data reveal that the tendency to overestimate equality less in the past compared with the present was also observed on each individual marker of Black-White economic equality (all *P*s < 0.001). That said, a few interesting patterns that are important to acknowledge can also be gleaned from examination of the disaggregated estimates reported in Table 1. First, contrary to the overall pattern observed for the composite (i.e., aggregate) measure, progress estimates for health benefits seem to be primarily due to underestimates of racial equality in this domain in the past rather than to overestimates of current equality. Indeed, current estimates of racial equality in health benefits were largely accurate. It is possible that this result reflects awareness of the intentions, if not gains, associated with the Affordable Care Act (35, 36), leading to the assumption that racial inequality in access to health insurance has indeed declined.

**Table 1. Results from one-sample *t* tests comparing estimates of past and current Black-White economic equality with national statistics for the five individual markers of economic inequality comprising our composite index**

Economic outcome	Study 1, <i>n</i> = 444		Study 2, <i>n</i> = 419		Study 3, <i>n</i> = 312		Actual racial gap
	Mean (SD)	t-value	Mean (SD)	t-value	Mean (SD)	t-value	
<b>Past estimates</b>							
Health benefits	-28.12 (39.33)	-15.07*	-26.79 (40.76)	-13.45*	-22.41 (40.45)	-9.79*	10.24
College wages	-16.47 (36.27)	-9.46*	-20.35 (37.99)	-10.96*	-12.24 (36.99)	-5.85*	13.49
High school wages	-17.13 (38.81)	-9.30*	-19.19 (39.02)	-10.07*	-13.20 (38.30)	-6.09*	16.33
Wealth	52.00 (40.27)	27.21*	53.67 (40.88)	26.87*	61.15 (39.37)	27.44*	93.35
Income	-2.65 (40.21)	-1.39	-1.78 (43.19)	-0.85	7.35 (43.45)	2.99*	48.90
Composite	-2.47 (34.37)	-1.52	-2.89 (35.94)	-1.65	4.13 (36.26)	2.01*	
<b>Current estimates</b>							
Health benefits	-1.46 (40.46)	-0.76	6.02 (41.51)	2.97*	5.24 (38.17)	2.43*	14.36
College wages	10.79 (37.30)	6.10*	13.46 (37.36)	7.37*	20.05 (34.12)	10.38*	19.04
High school wages	9.58 (40.18)	5.02*	12.45 (40.69)	6.26*	18.41 (34.29)	9.48*	20.89
Wealth	74.61 (44.38)	35.42*	80.53 (44.77)	36.82*	85.21 (40.15)	37.49*	94.96
Income	22.96 (41.26)	11.72*	28.74 (43.19)	13.62*	35.27 (36.65)	17.00*	42.70
Composite	23.30 (36.29)	13.53*	28.24 (37.19)	15.54*	32.84 (33.99)	17.06*	

A mean of zero indicates perfect accuracy in estimates of Black-White equality in health benefits, college wages, high school wages, wealth, and income, respectively. Negative numbers reflect underestimates of equality; positive numbers reflect overestimates. An asterisk after a *t*-value indicates that *P* < 0.05. The rightmost column reports the actual gap between the economic outcome for White Americans and Black Americans (all scored in the pro-White direction) based on CPS statistics; White American economic outcomes are equal to 100. For example, the 94.96 statistic for the current wealth gap indicates that for every \$100 US of wealth a White American accumulates, a Black American has \$5.04 US.

The disaggregated information provided in Table 1 also suggests that perceived progress in wages seems to be equally due to underestimates of past equality and overestimates of current equality. Last, although overestimates of current levels of wealth equality were substantially greater than overestimates of wealth equality in the past, participants tended to overestimate wealth equality at both time points. Indeed, this is the only economic marker for which this pattern was observed and is perhaps due to the shockingly large and persistent racial wealth gaps that exist in the nation (3, 4, 37, 38). Although these idiosyncratic patterns found for the different metrics of economic outcomes are intriguing and worthy of future inquiry, they are beyond the scope of the present work. Because the aggregate estimates are likely to be more reliable and less misleading than those for any individual metric of economic circumstances (see *Methods and Measures* for reliability estimates), we conducted our remaining analyses on participants' aggregate estimates of racial economic equality (i.e., the composite measure).

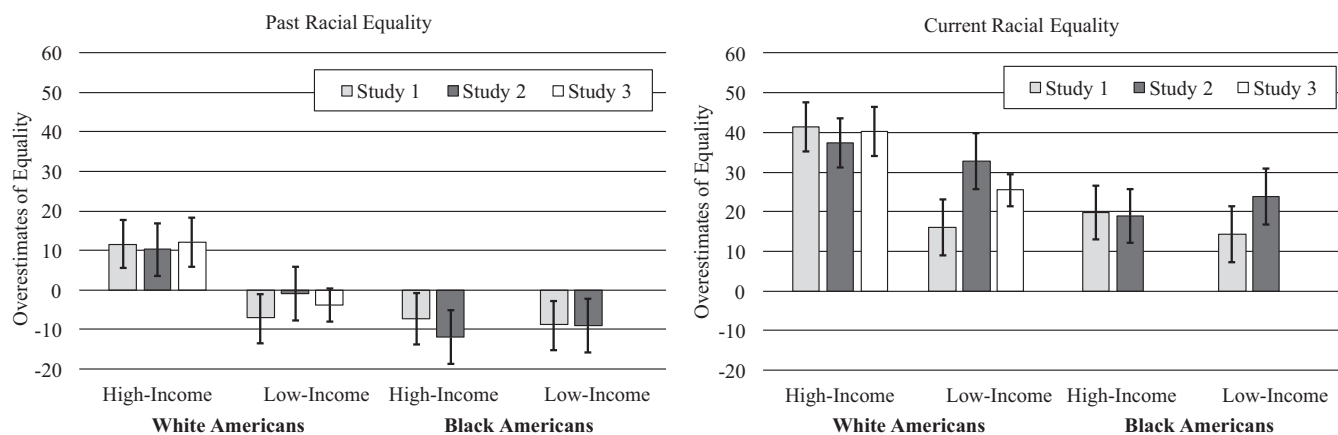
**Social Status Characteristics.** Recall that we also expected participants' social status characteristics to moderate the extent to which they overestimate racial economic equality. Specifically, we predicted that high-income White participants would be more likely to overestimate racial equality compared with their lower-status counterparts, i.e., low-income White participants and Black participants of either income category. This prediction was also supported. As depicted in Fig. 2, *Right*, planned contrasts revealed that high-income White participants overestimated current racial equality more than did low-income White participants ( $R_{Combined} = 0.23$ ,  $Z_{Combined} = 7.27$ ,  $P_{Combined} < 0.001$ ), high-income Black participants ( $R_{Combined} = 0.25$ ,  $Z_{Combined} = 5.19$ ,  $P_{Combined} < 0.001$ ), and low-income Black participants ( $R_{Combined} = 0.27$ ,  $Z_{Combined} = 5.32$ ,  $P_{Combined} < 0.001$ ).

A similar pattern emerged for estimates of past racial equality (Fig. 2, *Left*): High-income White participants overestimated past racial equality relative to low-income White participants ( $R_{Combined} = 0.22$ ,  $Z_{Combined} = 7.33$ ,  $P_{Combined} < 0.001$ ), high-income Black participants ( $R_{Combined} = 0.27$ ,  $Z_{Combined} = 5.39$ ,  $P_{Combined} < 0.001$ ), and low-income Black participants ( $R_{Combined} = 0.27$ ,  $Z_{Combined} = 6.35$ ,  $P_{Combined} < 0.001$ ). [After controlling for gender, high-income White Americans continue to overestimate current and past racial equality relative to low-income White Americans and Black Americans across the income spectrum (*SI Text* and *Table S4*).]

A closer examination of the means reveals, however, that high-income White participants were actually the only subgroup to overestimate the extent of racial equality in the past, as indicated by scores significantly greater than zero. Notably, whereas low-income White participants' estimates of past racial economic equality were, on average, fairly accurate, Black participants of both income levels tended to underestimate past levels of racial economic equality; that is, they were overly pessimistic about past levels of racial economic inequality, an effect that is worthy of future examination. Nevertheless, these data are consistent with our hypothesis that higher-status members of society will overestimate racial economic equality more than their lower-status counterparts.

**Societal Fairness and Network Diversity.** Based on previous research (16, 31), we reasoned that beliefs in societal fairness and more racially homogenous social networks would each predict overestimates of current levels of racial economic equality. We tested each of these hypotheses by examining associations between perceptions of current levels of racial economic equality with participants' scores on the belief in a just world scale and their self-reported network racial diversity (*Tables S5* and *S6*). Consistent with predictions, larger estimates of current racial economic equality were positively associated with greater belief in a just world across the entire sample ( $R_{Combined} = 0.40$ ,  $Z_{Combined} = 16.04$ ,  $P_{Combined} < 0.001$ ), among the subgroup of White participants ( $R_{Combined} = 0.44$ ,  $Z_{Combined} = 13.49$ ,  $P_{Combined} < 0.001$ ), and in the subgroup of Black participants ( $R_{Combined} = 0.35$ ,  $Z_{Combined} = 6.81$ ,  $P_{Combined} < 0.001$ ). For the analysis of network racial diversity, correlations again largely supported our predictions: White participants had significantly less racial diversity in their networks than did Black participants across studies ( $R_{Combined} = -0.46$ ,  $Z_{Combined} = 12.63$ ,  $P_{Combined} < 0.001$ ), and larger estimates of current racial economic equality were negatively associated with network racial diversity across the entire sample ( $R_{Combined} = -0.06$ ,  $Z_{Combined} = -2.14$ ,  $P_{Combined} = 0.032$ ) and among the subgroup of Black participants ( $R_{Combined} = -0.10$ ,  $Z_{Combined} = -2.04$ ,  $P_{Combined} = 0.041$ ) but not among the subgroup of White participants ( $R_{Combined} = 0.04$ ,  $Z_{Combined} = 0.81$ ,  $P_{Combined} = 0.418$ ). Overall, then, consistent with previous research, belief in societal fairness and lower network racial diversity (for Black Americans) predicted the tendency to overestimate the extent to which the country has achieved racial economic equality.

**Mediation Analyses.** The analyses reported thus far revealed that societal status characteristics, assessed in terms of race and



**Fig. 2.** Overestimates of past (*Left*) and current (*Right*) levels of racial economic equality for studies 1–3 by participant race and income group. Overestimates were calculated by subtracting actual past or current equality levels based on the CPS from participants' estimates for each time point. Positive values indicate overestimates of equality, negative values indicate underestimates of equality, and zero indicates perfect agreement with national data (i.e., accuracy). Error bars indicate 95% CIs around the mean.

income, moderated the extent to which participants were overly optimistic about racial economic equality and, further, that individual differences in the belief in a just world and network racial diversity also predicted the extent to which participants overestimated racial equality. Perhaps, not surprisingly, mediation analyses indicated that both belief in a just world and, to a lesser extent, network racial diversity statistically accounted for the observed tendency for high-income White participants to overestimate current levels of racial equality, relative to the other groups. We first conducted a bootstrapping analysis, controlling for general accuracy of societal economic inequality estimates, age, and educational attainment among the high-income participants (39). The analyses for studies 1 and 2 (the studies with both Black and White participants) reveal a significant indirect effect of participant race on overestimates of current racial equality through belief in a just world [ $B_{S1} = 2.59$ , 95%  $CI_{S1}$  (0.73–5.38);  $B_{S2} = 4.68$ , 95%  $CI_{S2}$  (2.31–7.94)] and network racial diversity [ $B_{S1} = 3.69$ , 95%  $CI_{S1}$  (0.11–7.36);  $B_{S2} = 3.48$ , 95%  $CI_{S2}$  (0.83–6.36)]. In this analysis, high-income White participants' greater relative tendency to overestimate present racial equality [ $C_{S1} = 7.55$ ,  $t_{S1}(214) = 2.82$ ,  $P_{S1} = 0.005$ ;  $C_{S2} = 9.45$ ,  $t_{S2}(202) = 3.74$ ,  $P_{S2} < 0.001$ ] was reduced [ $C'_{S1} = 1.27$ ,  $t_{S1}(214) = 0.42$ ,  $P_{S1} = 0.676$ ;  $C'_{S2} = 1.28$ ,  $t_{S2}(202) = 0.48$ ,  $P_{S2} = 0.629$ ] after accounting for their heightened belief in a just world and their (lack of) network racial diversity.

For the comparison between high- and low-income White participants, we conducted a parallel mediation analysis of the results of studies 1 and 3 (in which income differences emerged among the high- and low-income White participants). The analysis revealed a significant indirect effect of belief in a just world [ $B_{S1} = 1.43$ , 95%  $CI_{S1}$  (0.19–3.60);  $B_{S3} = 3.09$ , 95%  $CI_{S3}$  (1.33–5.46)] but no effect of network racial diversity [ $B_{S1} = 0.28$ , 95%  $CI_{S1}$  (–0.32 to 1.94);  $B_{S3} = 0.24$ , 95%  $CI_{S3}$  (–0.09 to 1.17)]. In the analysis, high-income White participants' tendency to overestimate current racial equality relative to low-income White participants [ $C_{S1} = 10.46$ ,  $t_{S1}(232) = 3.88$ ,  $P_{S1} < 0.001$ ;  $C_{S3} = 5.21$ ,  $t_{S3}(305) = 2.39$ ,  $P_{S3} = 0.017$ ] was reduced [ $C'_{S1} = 8.75$ ,  $t_{S1}(232) = 3.24$ ,  $P_{S1} = 0.001$ ;  $C'_{S3} = 1.87$ ,  $t_{S3}(305) = 0.93$ ,  $P_{S3} = 0.352$ ] after accounting for their level of belief in a just world (SI Text and Tables S7–S10).

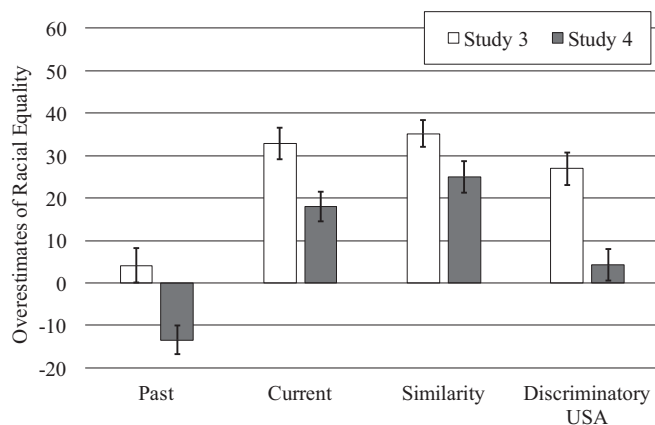
**Changing Perceptions of Racial Economic Equality.** In addition to measuring estimates of racial economic equality, studies 3 and 4 sought to build upon the initial findings, with the goal of expanding our understanding of the psychological processes that contribute to White Americans' tendency to overestimate current Black–White economic equality so profoundly. Drawing from our theoretical analysis and empirical evidence suggesting that motivation to perceive society as fair and just predicts the tendency to overestimate racial economic equality (10–13), we reasoned that an experimental manipulation that heightens this motivational state might lead to even larger overestimates of current racial economic equality (18). Conversely, drawing upon research suggesting that awareness of structural racial discrimination contributes to awareness of racial disparities in general (3, 8), we reasoned that an experimental manipulation that makes societal structural racism salient should increase the accuracy of White Americans' estimates of current racial economic equality.

To test these predictions, after participants reported their estimates of past and current levels of racial equality (the results of which we reported previously), they were asked to estimate current levels of Black–White equality in two additional counter-balanced conditions (the order of which did not impact the results). The first condition used a well-established paradigm to heighten motivational states during social judgment tasks (18). Specifically, instead of asking participants to judge the economic outcomes of an abstract average of Black individuals or families, participants were asked to bring to mind a Black individual or

family who was similar to them in terms of goals, talents, attributes, and skills. We expected that encouraging White participants to draw similarities with themselves would increase overestimates of current levels of Black–White economic equality because acknowledging racial gaps under these conditions—that is, between Black and White families with equal talent, skills, and so forth—would be especially threatening to the perception that society is fair and just.

The second manipulation was expected to do just the opposite, that is, increase the salience and thus consideration of the role of societal racial discrimination in the perpetuation of racial economic inequality. Specifically, participants were asked to consider an “alternative United States,” i.e., an America where discrimination based on race still exists in law enforcement, voting rights, and educational and employment decisions, rather than what they had thought of when generating their original estimates (40). This manipulation was expected to temper participants' tendency to anchor their estimates on the perception that racial equality has generally improved markedly in the United States and, thus, reduce the tendency to overestimate current levels of racial economic equality.

Study 3 participants estimated present racial equality on each of the five economic markers described previously, and, again, these estimates were averaged within each condition to create a “similarity” estimate and a “discriminatory USA” estimate in addition to the previously reported average estimates for the past and current time points. A 2 (income)  $\times$  4 (inequality estimate condition) mixed ANOVA with estimate condition as the within-subjects factor was used to test our predictions. The analysis revealed a main effect of income [ $F(1,310) = 20.10$ ,  $P < 0.001$ ], with high-income Americans (mean = 32.16) generating larger overestimates than low-income Americans (mean = 17.39). We also observed an estimate condition main effect [ $F(3, 930) = 208.37$ ,  $P < 0.001$ ] that, interestingly, did not interact with participant income,  $F(3, 930) = 0.64$ ,  $P = 0.587$ . As depicted in Fig. 3 and consistent with predictions, thinking of Black families who are similar to the self increased White Americans' overestimates of racial economic equality,  $t(311) = 2.09$ ,  $P = 0.038$ ,  $d_{RM} = 0.12$ . That is, in this condition participants generated estimates of Black–White equality that were even more divorced from national data than they were when estimating current levels of



**Fig. 3.** Overestimates of racial economic equality in the past, in the present, when thinking of similar Black families (similarity), and when considering racial discrimination in an “alternate United States” (discriminatory USA) for studies 3 and 4. Overestimates were calculated by subtracting actual past or current equality levels based on the CPS from participants' estimates in each condition. Positive values indicate overestimates of equality, negative values indicate underestimates of equality, and zero indicates perfect agreement with national data (i.e., accuracy).

racial equality without this frame. Countering narratives of racial progress by increasing the salience of societal racial discrimination was also effective: When asked to consider an America in which discrimination persists, participants (all White Americans) provided more accurate estimates of racial economic equality than they reported when racial discrimination was not made salient,  $t(311) = 4.12$ ,  $P < 0.001$ ,  $d_{RM} = 0.23$ .

To address the possibility that confusion and/or fatigue due to making two additional rounds of similar ratings of five economic outcomes might have influenced the results of these manipulations, study 4 recruited a majority White American convenience sample (Table S2) to provide estimates of a single economic marker across the same four experimental conditions—estimates of racial equality in income in the past, current, similarity, and discriminatory US conditions. Given that participant income did not moderate the results of the focal conditions of study 3, we did not specifically recruit high- and low-income participants in study 4, nor did we conduct analyses based on this or any other status characteristics.

As depicted in Fig. 3, results revealed a pattern of condition differences similar to those observed in study 3,  $F(3,603) = 154.59$ ,  $P < 0.001$ . Replicating the prior three studies, current estimates of income racial equality were more optimistic (and inaccurate) than were past estimates,  $t(201) = 15.59$ ,  $P < 0.001$ . As in study 3, experimentally inducing reflection on a similar Black family increased overestimates of Black–White income equality in this mostly White American sample [ $t(201) = 10.93$ ,  $P < 0.001$ ,  $d_{RM} = 0.31$ ], whereas inducing consideration of the persistence of racial discrimination in the United States resulted in estimates of racial income equality that were much closer to reality,  $t(201) = 17.51$ ,  $P < 0.001$ ,  $d_{RM} = 0.50$ . Together, the findings of studies 3 and 4 offer support for our central argument that overestimates of Black–White economic equality are rooted, at least in part, in both motivational tendencies to perceive society as fair and the lack of consideration of the social structures, practices, and policies that created and continue to maintain racial disparities in economic outcomes.

## Discussion

An important, often overlooked, facet of economic inequality in the United States is that it is a product of historical and present-day forms of racism—labor, housing, and other policies and practices—that have systematically disadvantaged racial/ethnic minorities in their pursuit of economic opportunities. One result of these historical and ongoing forces is a vast and persistent economic disparity between Black and White families in the United States (1), of which Americans seem largely unaware. The present research documented both the pervasiveness and magnitude of this general lack of awareness and relevant socio-structural correlates and began to explore the psychological processes and motives that promote or undermine awareness and/or acknowledgment of societal racial economic inequality.

The results of the present studies suggest that Americans largely misperceive race-based economic equality. Indeed, our results suggest a systematic tendency to perceive greater progress toward racial economic equality than has actually been achieved, largely driven by overestimates of current levels of equality. Although this tendency to overestimate current racial economic equality was observed among both White and Black Americans, there was also a significant status divide in the magnitude of these misperceptions: high-income White Americans' overestimates of current racial economic equality were larger than those generated by low-income White Americans and by Black Americans across the income distribution. Further, the present results suggest that the tendency to overestimate racial economic equality is likely shaped by both motivational and structural factors that lead people to deny and/or remain unaware of the ways in which race continues to shape economic outcomes in contemporary society. Specifically, overestimates of racial economic equality were associated with beliefs in societal fairness (a motivational factor) and, among

Black Americans, with lower network racial diversity (a largely structural factor). Experiments further revealed that inducing participants (mostly White) to think about Black individuals and families that are similar to themselves and their own families increases the tendency to overestimate racial equality, whereas increasing the salience of societal racial discrimination reduces it.

Taken together, the findings of the present work offer compelling evidence of the misperception of racial economic equality in contemporary society. Although past studies find similar patterns of overestimation when examining markers of general economic inequality (19) and social mobility (17), these data reveal that perceptions of current societal racial disparities in economic outcomes are wildly discrepant from reality. One implication of the present findings is that policy discussions about the detrimental effects of economic inequality, as well as potential ways to reduce it, are unlikely to contend with the racial economic gaps that are contributing to these overarching economic trends (37, 38, 41). That is, solutions for persistent racial economic inequality might never enter discussion if policymakers and the public believe these racial divides are already closing.

The pattern of misperception as a function of societal status characteristics is also noteworthy. The present results reveal a chasm between the awareness (or acknowledgment) of racial economic inequality by high-income White Americans and by members of other groups with comparatively lower societal rank (based on either race or income or both). Indeed, high-income Whites vastly underestimate the racial economic inequality that characterized the past and continues to shape the present. How these misperceptions of racial economic outcomes may relate to other patterns of intergroup perception and policy support is worthy of future research. For instance, it is likely that high-income White individuals' tendency to believe that the country has already achieved equal rights, if not outcomes, between racial groups (3) contributes to these (mis)perceptions of racial economic equality—or, perhaps, the causal arrow is in the opposite direction.

In either case, these misperceptions are unlikely to engender support for economic policies that are specifically designed to address racial disparities in economic outcomes and circumstances (42). Specifically, our results highlight the limitations of economic policies, such as higher tax rates for millionaires and loan forgiveness for college students, that reduce some of the economic inequality between the wealthiest 1% and the rest of Americans while leaving income and the extraordinary wealth gaps between racial groups largely intact (37, 38, 41, 42). In this regard, especially given the shocking level of ignorance regarding racial wealth inequality observed in the present work, policies designed to reduce racial gaps in wealth accumulation, including stricter enforcement of housing antidiscrimination laws and/or practices that promote access to home ownership among Black Americans and other racial minority groups, universal living wage, if not job, guarantees, and the implementation of “baby bond” trust programs stand as far superior economic policy solutions than those born of concern about general societal economic inequality (38, 41, 42).

Although the present findings are both important and compelling, they are simply an initial inquiry into these perceptions and thus certainly require additional empirical scrutiny. For instance, it is possible that using language that essentially anchored participants' estimates of inequality on the status of White individuals systematically affected them in ways that are currently unknown. Recall that for each item participants were asked to consider an average White individual and then estimate, for instance, how much an average Black individual would earn. Future research should consider whether reframing the questions to anchor on Black Americans yields different results for either the past or current estimates of economic equality among the Black and White high-income and low-income samples. In addition,

the decision to use within-subjects designs may have introduced experimental demand that affected participants' estimates (43). Although solicitations for current and past estimates were always counterbalanced, as were the similarity and discriminatory United States prompts in the experiments, and no order effects were observed, future research should examine the estimates that are observed in between-subjects designs.

Beyond these methodological considerations that warrant additional research, the role of network racial diversity in predicting awareness or acknowledgment of racial economic inequality remains unclear. We found that such diversity was predictive only among the Black American sample, which could be due to any number of processes that result in differential information being shared by White (high-status) and Black (low-status) individuals during interracial encounters (25, 26). Further, for high-income Black Americans, structural factors conspire to enhance both racial and social class network diversity relative to White Americans (32), and it could be the combination of greater class and racial diversity in individuals' social networks that affords more accurate estimates of economic equality (*Supporting Information*). Consequently, the present findings suggest that interracial contact may play only a limited role in shaping perceptions of racial economic equality and perhaps may do so only among some societal groups.

Moreover, research that considers other processes that are likely to be relevant to generating these estimates is essential. For instance, how do these findings relate to recent research demonstrating that most Americans' mental image of a poor person is of a Black person (44, 45)? One possibility is that people generate different exemplars when estimating these economic inequality gaps than when thinking about poor people in general, low-income people who benefit from government-funded food and/or housing programs, or even specific subtypes of poor people (e.g., homeless individuals). This account is consistent with our proposal that some component of these misperceptions is motivated. In general, however, research on the roles of exemplar availability, stereotype accessibility, and other similar processes in shaping perceptions of racial economic equality is likely to be a prolific and generative avenue for future research.

Future research is also necessary to clarify and confirm the findings of the experimental manipulations examined in this work. Prior research indicates that the manipulation of similarity we used enhances the motivational salience of these types of estimates (18, 46, 47); however, the observed results could have been due to different psychological component processes stemming from the similarity prime, including the activation of a Black family of a similar socioeconomic background as participants, which would also lead to the emergence of greater overestimates of economic equality than found without this similarity frame. Future research should not only examine the veracity of this and other alternative explanations for the effects of this similarity manipulation but also consider other methods of manipulating the motivation to perceive racial equality, such as threats to the American racial, socioeconomic, or political system (21, 22, 48).

The results of the present work are nevertheless quite sobering. However, our experimental studies suggest one potential path forward—namely, that we must bravely encourage the active consideration of the continued existence of race-based discrimination in society. Doing so substantially reduced the inaccuracy of Black–White equality estimates in two studies. That said, these results also highlight the problematic nature of prevailing narratives of societal racial progress (8); these narratives are likely to play a causal role in maintaining a collective, systemic blindness to vast racial disparities in many domains of contemporary American life (e.g., wealth, health, education). Countering the motivational and structural forces that sustain this blindness will be essential to creating coalitions of people from different racial, ethnic, and cultural backgrounds (49) in the

pursuit of solutions for reducing racial economic inequality and societal economic inequality, more generally.

The present results also highlight the role of social science in raising awareness about racial and economic divides in society (50). Given widespread misperceptions regarding Black–White disparities in economic outcomes, the present work highlights the role of the social and economic sciences first in debunking these misperceptions, followed by the identification of ways to combat the disparities themselves. That an aggregate sample of Americans can be so misinformed about the reality of racial disparities in economic conditions in society suggests that experts must be more persuasive in their communication of the real economic conditions with which people live and how these conditions are racially patterned. We cannot solve problems that we do not know exist or that we think are already solving themselves.

## Methods and Measures

All methods and materials were reviewed and approved by the Institutional Review Board at Yale University. In studies 1–3, participants were recruited through Qualtrics survey software panels for a 15-min survey about their “impressions of society” and were compensated \$5. Study 4 participants were recruited through Mechanical Turk for a similar, albeit shorter (5–10 min), survey and were compensated \$1. An initial introductory screen informed participants that the study concerned how “personality is related to various social judgments” and that participation involved filling out surveys assessing their beliefs about society. Participants were informed that they could skip any questions that they did not want to complete, with no loss of compensation or penalty. Participants indicated their consent to participate in the study by clicking a box labeled “Yes, I would like to participate in this research” on their computer screen.

After indicating their consent to complete the survey, participants were first provided definitions for income and wealth, based on instructions used in prior research (19). In all studies, participants entered estimates of wealth inequality in society in terms of wealth quintiles and in terms of chief executive pay relative to the average worker. Participants then estimated general statistics for a number of economic demographic questions related to pay scales, unemployment, and health benefits. Next, participants responded to our central questions related to race-based economic equality: “For every \$100 earned by an average White family, how much do you think was earned by an average Black family in 1947/2013?”; “For every \$100 in wealth accumulated by an average White family, how much wealth has the average Black family accumulated in 1983/2010?”; “If a White member of the workforce with a high school degree made \$100, how much would a Black member of the workforce with a high school degree make performing the same work in 1973/2015?”; “If a White member of the workforce with a 4-y college degree made \$100, how much would a Black member of the workforce with a 4-y college degree make performing the same work in 1973/2015?”; “If 100 average White families had employer-provided health insurance, how many average Black families had those same benefits in 1979/2010?”. The questions were assessed in random order, with order having no influence on the results.

As noted previously, study 4 involved a much briefer battery of study premeasures and solicited only estimates of average earnings (i.e., income) gaps. In both studies 3 and 4, the order of the experimental manipulations was counterbalanced, with order having no influence on the results. A qualitative examination of funnel debriefing responses indicated that while virtually all respondents were aware that our experiments were about race in America, when probed to guess our hypotheses, none mentioned anything consistent with our predictions.

Date ranges for the questions were chosen based on the earliest and latest CPS data available for each metric of racial economic inequality at the time when the studies were fielded. Participants entered their estimates on a 0–200 scale in which a score of zero indicates that Black–White economic inequality is such that White individuals and families receive all economic resources whereas Black individuals and families receive none. In contrast, a score of 200 indicates that Black families and individuals earn double the economic resources of White individuals and families. Progress estimates were calculated by subtracting data on actual progress, based on estimates from national statistics (1), from the estimated progress on each of the five racial economic equality items. Because estimates of progress ( $\alpha_1 = 0.83$ ,  $\alpha_2 = 0.83$ ,  $\alpha_3 = 0.89$ ), past ( $\alpha_1 = 0.93$ ,  $\alpha_2 = 0.93$ ,  $\alpha_3 = 0.95$ ), and current ( $\alpha_1 = 0.93$ ,  $\alpha_2 = 0.94$ ,  $\alpha_3 = 0.95$ ) racial equality showed high internal consistency across topics, we calculated aggregate (i.e., composite) equality estimates for each time point, which were submitted for analysis.

After responding to the economic items, participants answered six questions about their beliefs in a just world (11) (e.g., "I think basically the world is a just place") using six-point Likert scales (1 = strongly disagree, 6 = strongly agree) and four items assessing the diversity of their social networks (33) on four-point scales (e.g., "Are the people you typically interacted with in your neighborhood growing up:" 1 = all of the same race as you; 4 = all of a different race). Following these survey responses, participants completed a number of additional questions about other aspects of society, including beliefs about justice and attitudes toward current social policies, which were assessed for a different study. The full list of questions for all studies is available online (<https://osf.io/vvrsr/#>).

- Economic Policy Institute (2017) Data from State of Working America Data Library, compensation, wages, and benefits. Available at [www.epi.org/data](http://www.epi.org/data). Accessed May 8, 2017.
- Richeson JA, Sommers SR (2016) Toward a social psychology of race and race relations for the twenty-first century. *Annu Rev Psychol* 67:439–463.
- Bialik K, Cilluffo A (2017) Data from Pew Research Center tabulations of the 1968–2016 Current Population Survey Annual Social and Economic Supplement (IPUMS). Available at [www.pewresearch.org/fact-tank/2017/02/22/6-facts-about-black-americans-for-black-history-month/](http://www.pewresearch.org/fact-tank/2017/02/22/6-facts-about-black-americans-for-black-history-month/). Accessed May 8, 2017.
- Gittleman M, Wolff EN (2004) Racial differences in patterns of wealth accumulation. *J Hum Resour* 39:193–227.
- Crandall CS, Eshleman A, O'Brien L (2002) Social norms and the expression and suppression of prejudice: The struggle for internalization. *J Pers Soc Psychol* 82:359–378.
- Devine PG (1989) Stereotypes and prejudice: Their automatic and controlled components. *J Pers Soc Psychol* 56:5–18.
- Jones JM (1998) Psychological knowledge and the new American dilemma of race. *J Soc Issues* 54:641–662.
- Pew Research Center (2016) Data from Survey of US adults conducted February 29–May 8, 2016, Q5F1. Available at [www.pewsocialtrends.org/2016/06/27/2-views-of-race-relations/](http://www.pewsocialtrends.org/2016/06/27/2-views-of-race-relations/). Accessed May 8, 2017.
- Berger J, Cohen BP, Zelditch M, Jr (1972) Status characteristics and social interaction. *Am Sociol Rev* 37:241–255.
- Jost JT, Glaser J, Kruglanski AW, Sulloway FJ (2003) Political conservatism as motivated social cognition. *Psychol Bull* 129:339–375.
- Lipkus I (1991) The construction and preliminary validation of a global belief in a just world scale and the exploratory analysis of the multidimensional belief in a just world scale. *Pers Individ Differ* 12:1171–1178.
- Johnson DD, Blumstein DT, Fowler JH, Haselton MG (2013) The evolution of error: Error management, cognitive constraints, and adaptive decision-making biases. *Trends Ecol Evol* 28:474–481.
- Brandt MJ (2013) Do the disadvantaged legitimize the social system? A large-scale test of the status-legitimacy hypothesis. *J Pers Soc Psychol* 104:765–785.
- Fanon F (1963) *The Wretched of the Earth* (Grove, New York).
- Sidanius J, Pratto F (2001) *Social Dominance: An Intergroup Theory of Social Hierarchy and Oppression* (Cambridge Univ Press, Cambridge, UK).
- Kraus MW, Piff PK, Keltner D (2009) Social class, sense of control, and social explanation. *J Pers Soc Psychol* 97:992–1004.
- Davidai S, Gilovich T (2015) Building a more mobile America—One income quintile at a time. *Perspect Psychol Sci* 10:60–71.
- Kraus MW, Tan JX (2015) Americans overestimate social class mobility. *J Exp Soc Psychol* 58:101–111.
- Norton MI, Ariely D (2011) Building a better America—One wealth quintile at a time. *Perspect Psychol Sci* 6:9–12.
- Kiatpongsan S, Norton MI (2014) How much (more) should CEOs make? A universal desire for more equal pay. *Perspect Psychol Sci* 9:587–593.
- Lowery BS, Knowles ED, Unzueta MM (2007) Framing inequity safely: Whites' motivated perceptions of racial privilege. *Pers Soc Psychol Bull* 33:1237–1250.
- Phillips LT, Lowery BS (2015) The hard-knock life? Whites claim hardships in response to racial inequity. *J Exp Soc Psychol* 61:12–18.
- Shedd C (2015) *Unequal City: Race, Schools, and Perceptions of Injustice* (Russell Sage Foundation, New York).
- Mendes WB, Blascovich J, Hunter SB, Lickel B, Jost JT (2007) Threatened by the unexpected: Physiological responses during social interactions with expectancy-violating partners. *J Pers Soc Psychol* 92:698–716.
- Richeson JA, Shelton JN (2007) Negotiating interracial interactions: Costs, consequences, and possibilities. *Curr Dir Psychol Sci* 16:316–320.
- Saguy T, Tausch N, Dovidio JF, Pratto F (2009) The irony of harmony: Intergroup contact can produce false expectations for equality. *Psychol Sci* 20:114–121.
- Bergeron AP, Zanna MP (1973) Group membership and belief similarity as determinants of interpersonal attraction in Peru. *J Cross Cult Psychol* 4:397–411.
- Côté S, et al. (2017) Social affiliation in same-class and cross-class interactions. *J Exp Psychol Gen* 146:269–285.
- Tajfel H, Turner JC (2001) An integrative theory of intergroup conflict. *Intergroup Relations: Essential Readings*, eds Hogg M, Abrams D (Psychology, New York), pp 94–109.
- Desmond M (2016) *Evicted: Poverty and Profit in the American City* (Broadway Books, New York).
- Massey DS, Denton NA (1993) *American Apartheid: Segregation and the Making of the Underclass* (Harvard Univ Press, Cambridge, UK).
- Pattillo-McCoy M (1999) *Black Picket Fences: Privilege and Peril in the Black Middle Class Neighborhood* (Univ of Chicago Press, Chicago).
- Kaiser Family Foundation (2015) Codebook from Survey of Americans on Race. Available at [kff.org/other/report/survey-of-americans-on-race/](http://kff.org/other/report/survey-of-americans-on-race/). Accessed May 8, 2017.
- Goh JX, Hall JA, Rosenthal R (2016) Mini meta-analysis of your own studies: Some arguments on why and a primer on how. *Soc Personal Psychol Compass* 10:535–549.
- The Patient Protection and Affordable Care Act* (2010) Public Law No. 111-148, 124 Stat. 855.
- Abdus S, Mistry KB, Selden TM (2015) Racial and ethnic disparities in services and the patient protection and affordable care act. *Am J Public Health* 105(Suppl 5): S668–S675.
- Darity WA, Jr, Myers SL, Jr (1998) *Persistent Disparity. Race and Economic Inequality in the United States Since 1945* (E. Elgar Publishing, Cheltenham, UK).
- Shapiro TM (2017) *Toxic Inequality: How America's Wealth Gap Destroys Mobility, Deepens the Racial Divide, and Threatens Our Future* (Basic Books, New York).
- Preacher KJ, Hayes AF (2004) SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behav Res Methods Instrum Comput* 36:717–731.
- Schmitt MT, Branscombe NR, Postmes T (2003) Women's emotional responses to the pervasiveness of gender discrimination. *Eur J Soc Psychol* 33:297–312.
- Hamilton D, Darity WA, Jr (2017) The political economy of education, financial literacy, and the racial wealth gap. *Fed Reserv Bank St Louis Rev* 99:59–76.
- Darity WA, Jr, Hamilton D (2012) Bold policies for economic justice. *Rev Black Polit Econ* 39:79–85.
- Charness G, Gneezy U, Kuhn M (2012) Experimental methods: Between-subject and within-subject design. *J Econ Behav Organ* 81:1–8.
- Brown-Iannuzzi JL, Dotsch R, Cooley E, Payne BK (2017) The relationship between mental representations of welfare recipients and attitudes toward welfare. *Psychol Sci* 28:92–103.
- Lei RF, Bodenhausen GV (2017) Racial assumptions color the mental representation of social class. *Front Psychol* 8:519.
- Oveis C, Horberg EJ, Keltner D (2010) Compassion, pride, and social intuitions of self-other similarity. *J Pers Soc Psychol* 98:618–630.
- Andersen SM, Chen S (2002) The relational self: An interpersonal social-cognitive theory. *Psychol Rev* 109:619–645.
- Jost JT, Hunyady O (2003) The psychology of system justification and the palliative function of ideology. *Eur Rev Soc Psychol* 13:111–153.
- Craig MA, Richeson JA (2016) Stigma-based solidarity: Understanding the psychological foundations of conflict and coalition among members of different stigmatized groups. *Curr Dir Psychol Sci* 25:21–27.
- Fiske ST, Dupree C (2014) Gaining trust as well as respect in communicating to motivated audiences about science topics. *Proc Natl Acad Sci USA* 111:13593–13597.