

RACE X SOCIAL CLASS ATTITUDES

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Race and Social Class as Intersecting Social Categories: An Analysis of Implicit and Explicit Attitudes

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All data, syntax, and materials can be found at: <https://osf.io/kwtqc/>

Abstract

Race and social class are inherently confounded; however, much of the literature focuses on only one of these categories at a time during attitude assessment. Across three studies, we examined the influence of race and social class on implicit and explicit attitudes. Results indicated that participants had more positive attitudes toward high social class White and high social class Black people than low social class White and low social class Black people. Attitudes for high social class White versus high social class Black people and for low social class White versus low social class Black people were more nuanced and attitude/measure dependent. Thus, this research highlights the intricacy of attitudes when considering intersectional categories.

Keywords: race; social class; intersectionality; implicit attitudes; explicit attitudes

Social categorization is a fundamental human process. It allows us to simplify complex environments, make inferences about others, and enact greater efficiency during interactions. Yet a person's social category might not always be salient. For instance, whereas race is usually a recognizable social category (Stangor, Lynch, Duann, & Glass, 1992), social class may be less obvious. In instances of social category ambiguity, people rely on stereotypes to make assumptions about others, which often conform to status hierarchies about group membership. Specifically, people often stereotype dominant groups (e.g., White people) as higher in social status than minority groups (e.g., Black people) (Mattan, Kubota, & Cloutier, 2017). It follows that when only race is salient, people might stereotypically associate White people with high social class (referred to as HSC hereafter) and Black people with low social class (referred to as LSC hereafter).

Considerable social psychological research has uncovered this stereotypical race-social class association. For instance, during free recall tasks in which participants are asked to explicitly report characteristics associated with Black people, people commonly use descriptors such as "welfare Black," "poor," and "live in poor areas" and less commonly use terms such as "businessman Black" (Bonam, Bergsieker, & Eberhardt, 2016; Bonam, Yantis, & Taylor, 2018; Devine & Baker, 1991; McCabe & Brannon, 2004). On mental representation tasks, people's representations of poor people or welfare recipients tend to look Blacker than people's mental representation of wealthy or non-welfare people, which tend to look Whiter (Brown-Iannuzzi, Dotsch, Cooley, & Payne, 2017; Lei & Bodenhausen, 2017). On social categorization tasks, people are more likely to categorize racially ambiguous LSC stimuli as Black and racially ambiguous HSC stimuli as White (Freeman, Penner, Saperstein, Scheutz, & Ambady, 2011). And on implicit tasks, people implicitly associate LSC with Black and HSC with White (Brown-

Iannuzzi, Cooley, Mckee, & Hyden, 2019; Klonis, 2005). Taken together, this research suggests that when social class is not specified or salient, people tend to associate LSC with Black and HSC with White.

Yet when race and social class are both apparent, unique patterns of stereotypes emerge. For example, Black people are typically rated as low in warmth and competence. However, when social class is specified, LSC Black people retain the low in warmth and competence stereotype, but HSC Black people are perceived to be high in warmth and competence (Fiske, Cuddy, Glick, & Xu, 2002). In fact, when both social class and race are explicit, HSC Black people and HSC White people tend to be stereotyped similarly and LSC Black people and LSC White people tend to be stereotyped similarly (Bayton, McAllister, & Hammer, 1956; Smedley & Bayton, 1978).

Similarly, cognitive processes—such as categorization (e.g., Cole & Omari, 2003; Penner & Saperstein, 2008; Weeks & Lupfer, 2004) and impression formation (e.g., Telles, 2002)—and behavioral processes—such as social distancing (e.g., Jussim, Coleman, & Lerch, 1987; Kunstman, Plant, & Deska, 2016)—are also affected by intersectional race and social class information. For instance, during behavioral tasks, as Black peoples' social class prestige increases, White peoples' desired social distance from Black people decreases (e.g., Feldman & Hilterman, 1974), and when White peoples' social status decreases, White peoples' desired social distance from White people increases (e.g., Kunstman et al., 2016). Thus, as social class increases, prejudice toward Black people decreases, and as social class decreases, prejudice toward White people increases.

However, this decrease in negative biases toward Black people as social class increases is not always withstanding. For instance, on automatic shooter bias tasks, participants demonstrated similar harmful shooting decisions toward LSC White people, LSC Black people, and HSC

Black people but not HSC White people (Moore-Berg et al., 2017). Further, on evaluative priming tasks, participants associated the most positive valence with HSC White people as compared to any other comparison group (Studies 3 & 4, Mattan et al., 2019). Thus, these two notable exceptions suggest that attitudes toward HSC White people are particularly positive as compared to other racial groups.

Across this past work, it is evident that different attitudes arise when race and social class are considered together rather than independently (see Moore-Berg & Karpinski, 2018). However, given the inconsistencies across this literature, it is unclear how race and social class interact to influence implicit and explicit attitudes. Therefore, in the current work, we aim to clarify the relationship between race and social class and their intersectional effect on implicit and explicit attitudes.

Overview of the Current Work

Across three studies, we manipulated stimulus race (White, Black) and social class (LSC, HSC) to evaluate how intersectional race and social class information influences implicit and explicit attitudes. Past research indicates that pro-HSC preferences occur when comparing within race. For example, HSC Black people and HSC White people are viewed more positively than LSC Black people and LSC White people, respectively (e.g., Cole & Omari, 2003). We, therefore, predicted that for within race comparisons for all measures, people would have more positive attitudes toward HSC Black people and HSC White people than LSC Black people and LSC White people, respectively.

However, we predicted that attitudes would be more nuanced for within social class comparisons, as past research has yielded mixed results. For instance, explicit attitude research

suggests that HSC Black people and LSC Black people are stereotyped similarly to HSC White people and LSC White people, respectively (e.g., Bayton et al., 1956); yet implicit attitude research reveals more positive attitudes toward HSC White people and LSC White people than HSC Black people and LSC Black people, respectively (e.g., Mattan et al., 2019; Moore-Berg et al., 2017). Thus, we hypothesized that participants might express similar explicit attitudes for HSC Black and HSC White people and LSC Black and LSC White people, but more positive implicit attitudes toward HSC White people than HSC Black people and LSC White people than LSC Black people.

To test these hypotheses, we conducted three studies that included both implicit and explicit measures. In Study 1, we utilized a popular, reliable, and valid measure of implicit attitudes, the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998) and included several questionnaires assessing cultural stereotypes and personal beliefs. In Study 2, we replicated and extended Study 1 findings but with a different implicit measure (i.e., the Affective Misattribution Procedure; Payne, Cheng, Govorun, & Stewart, 2005) to ensure the generalizability of the results found in Study 1. In Study 3, we replicated Studies 1 and 2 by combining all measures used in these studies. We report how we determined our sample sizes, all data exclusions, all manipulations, and all measures in each study.

STUDY 1

Methods

Participants. We conducted an a priori power analysis using G*Power 3.1 (Faul, Buchner, Erdfelder & Lang, 2017) using the effect sizes generated from previous pilot IAT work. To detect medium effects ($|d| = .5$) with at least 95% statistical power on the IAT, at least

53 participants were needed per condition. However, we slightly oversampled to account for potential missing data. We also conducted a posthoc sensitivity analysis ($\beta = .95$, $p = .05$, two-tailed) using G*Power 3.1 (Faul et al., 2017), which revealed that a sample of 67 participants per condition was sufficiently powered to detect a minimum effect size of $d = .45$

One hundred and thirty-eight U.S. university students ($M_{age} = 19.91$ years, $SD_{age} = 2.44$; 74% female; 54% White, 20% Asian, 17% Black/African American, 9% Other; 26% low/lower-middle social class, 24% middle social class, 25% upper-middle social class, 18% high social class, and 7% not reported) completed this study for partial course credit. Sixty-seven participants completed the compare race condition ($M_{age} = 20.01$ years, $SD_{age} = 2.11$; 73% female; 57% White, 19% Asian, 13% Black/African American, 11% Other). Seventy-one participants completed the compare class condition ($M_{age} = 19.82$ years, $SD_{age} = 2.72$; 75% female; 51% White, 20% Asian, 20% Black/African American, 9% Other).

Stimuli Selection. We used race x social class stimuli that were previously validated in Moore-Berg et al. (2017). The photos varied by race (Black vs. White) and social class (LSC vs. HSC; operationalized by stimulus attire), with five photos for each race x social class category (20 in total).

Materials and Procedure. Following consent, participants were randomly assigned to the compare race condition or the compare social class condition. Participants then completed two IATs in counterbalanced order. The evaluative categories were *good* and *bad*. The target categories were *HSC White* and *LSC White* (HSC-LSC White IAT), *HSC Black* and *LSC Black* (HSC-LSC Black IAT), *HSC White* and *HSC Black* (HSC White-Black IAT), and *LSC White* and *LSC Black* (LSC White-Black IAT). Participants in the compare race condition completed the HSC-LSC Black IAT (split-half $\alpha = .81$) and HSC-LSC White IAT (split-half $\alpha = .57$) in

counterbalanced order. Participants in the compare class condition completed the HSC White-Black IAT (split-half $\alpha = .89$) and LSC White-Black IAT (split-half $\alpha = .60$) in counterbalanced order.

Participants were provided with instructions on how to categorize the photos prior to the IATs, following the recommendation provided by Nosek et al. (2005), to ensure that participants categorized the photos correctly. The IATs were programmed with E-Prime software.

All IATs were modeled after Greenwald et al. (1998) and followed the same procedure. For example, in the HSC White-Black IAT, participants were asked to quickly categorize pictures of *rich White* and *rich Black* men and *good* (i.e., happy, joy, pleasure, smile, sunshine, and warmth) and *bad* (i.e., agony, disaster, pain, poison, rotten and war) words. This dual categorization task consisted of five blocks of trials with three practice blocks consisting of 20 trials each and two critical blocks consisting of 60 trials each. The practice blocks were single categorizations (i.e., only pictures or only words) and the critical blocks were dual categorizations (i.e., both pictures and words). Participants first completed two practice blocks for the word and picture categorizations. Then participants completed one critical block in which participants pressed the “A” key for photos of *rich White* men and *good* words and the “L” key for both photos of *rich Black* men and *bad* words. Afterward, participants completed another practice block as the keys for the target labels switched; participants now pressed the “A” key for photos of *rich Black* men and the “L” key for photos of *rich White* men. Finally, participants again completed a critical block in which participants pressed the “A” key for *good* words and photos of *rich Black* men and the “L” key for *bad* words and photos of *rich White* men. Both critical blocks were counterbalanced such that half of the participants categorized *good* words/*rich White* men pictures and *bad* words/*rich Black* men pictures on the same key during

the first critical block and the other half of participants categorized *good* words/*rich Black* men pictures and *bad* words/*rich White* men pictures on the same key during the first critical block. Participants had unlimited time to make responses and received feedback following each response.

Following the IATs, participants completed cultural stereotypes and personal beliefs questionnaires about LSC White people (Cultural Stereotypes: Cronbach's $\alpha = .94$; Personal Beliefs: Cronbach's $\alpha = .95$), LSC Black people (Cultural Stereotypes: Cronbach's $\alpha = .95$; Personal Beliefs: Cronbach's $\alpha = .96$), HSC White people (Cultural Stereotypes: Cronbach's $\alpha = .95$; Personal Beliefs: Cronbach's $\alpha = .95$), and HSC Black people (Cultural Stereotypes: Cronbach's $\alpha = .94$; Personal Beliefs: Cronbach's $\alpha = .96$). The cultural stereotypes questionnaire asked participants to rate the group on a series of 38 adjectives (i.e., hardworking, friendly, dirty, uneducated; see <https://osf.io/kwtqc/> for complete list of items) on a 1 (strongly disagree) to 7 (strongly agree) scale in accordance to how they feel society views the group at hand. The personal beliefs questionnaire took on a similar format, but this time participants referenced their own beliefs rather than perceived societal views. Participants also completed a feeling thermometer questionnaire; however, these results were generally inconsistent across studies and therefore, reported only in the supplemental materials.

Participants then filled out a demographic questionnaire assessing participant age, sex, race, ethnicity, and objective social class. Parent zip code was used to determine objective social class. Specifically, U.S. Census 2016 data (United States Census, 2016) was used to determine the median income for each zip code, and the following range was used to determine participant objective social class—low social class: \geq \$24,999, lower-middle social class: \$25,000-\$49,999,

middle social class: \$50,000-\$74,999, upper-middle social class: \$75,000-\$99,999, high social class: \$100,000+. All questionnaires were programmed with Qualtrics.

Results

IAT. IAT standardized D scores were calculated according to the methods described in Table 4 in Greenwald, Nosek, & Banaji (2003). One-sample t -tests of the IAT scores revealed a significant pro-HSC Black/anti-LSC Black bias ($M = .75$, $SD = .41$; $t(66) = 14.96$, $p < .001$, $|d| = 1.83$, 95% CI [.65, .85]), a significant pro-HSC White/anti-LSC White bias ($M = .78$, $SD = .38$; $t(66) = 17.03$, $p < .001$, $|d| = 2.05$, 95% CI [.69, .87]), no significant differences in biases between HSC White people and HSC Black people ($M = .04$, $SD = .45$; $t(70) = .77$, $p = .444$, $|d| = .09$, 95% CI [-.07, .15]), and a significant pro-LSC White/anti-LSC Black bias ($M = .40$, $SD = .40$; $t(70) = 8.41$, $p < .001$, $|d| = 1.00$, 95% CI [.30, .49]).

Cultural Stereotypes. A 2 (race: Black, White) x 2 (social class: HSC, LSC) repeated measures ANOVA revealed a significant main effect of social class, $F(1, 137) = 457.16$, $p < .001$, $\eta^2_p = .77$, 95% CI [.70, .81], a significant main effect of race, $F(1, 137) = 8.59$, $p = .004$, $\eta^2_p = .06$, 95% CI [.01, .15], and a significant race x social class interaction, $F(1, 137) = 24.88$, $p < .001$, $\eta^2_p = .15$, 95% CI [.06, .26].

Follow-up paired samples t -tests revealed that participants rated cultural stereotypes as more positive for HSC White people ($M = 5.57$, $SD = .87$) than LSC White people ($M = 3.57$, $SD = .83$; $t(137) = 18.79$, $p < .001$, $|d| = 2.35$, 95% CI [2.11, 2.59]), more positive for HSC Black people ($M = 5.54$, $SD = .84$) than LSC Black people ($M = 3.21$, $SD = .87$; $t(137) = 21.75$, $p < .001$, $|d| = 2.72$, 95% CI [2.49, 2.96]), no difference between HSC Black people and HSC White people ($t(137) = -.33$, $p = .741$, $|d| = .04$, 95% CI [-.20, .27]), and more positive for LSC

White people than LSC Black people ($t(137) = -4.94, p < .001, |d| = .42, 95\% \text{ CI } [.19, .66]$). See Figure 1.

Personal Beliefs. A 2 (race: Black, White) x 2 (social class: HSC, LSC) repeated measures ANOVA revealed a significant main effect of social class, $F(1, 137) = 223.19, p < .001, \eta^2_p = .62, 95\% \text{ CI } [.52, .69]$, a significant main effect of race, $F(1, 137) = 68.82, p < .001, \eta^2_p = .33, 95\% \text{ CI } [.21, .44]$, and a significant race x social class interaction, $F(1, 137) = 23.22, p < .001, \eta^2_p = .15, 95\% \text{ CI } [.05, .25]$.

Follow-up paired samples t -tests revealed that participants rated personal beliefs as more positive for HSC White people ($M = 5.10, SD = .82$) than LSC White people ($M = 3.78, SD = .84; t(137) = 12.21, p < .001, |d| = 1.59, 95\% \text{ CI } [1.35, 1.83]$), more positive for HSC Black people ($M = 5.61, SD = .80$) than LSC Black people ($M = 3.98, SD = .91; t(137) = 16.35, p < .001, |d| = 1.90, 95\% \text{ CI } [1.66, 2.14]$), more positive for HSC Black people than HSC White people ($t(137) = 9.61, p < .001, |d| = .63, 95\% \text{ CI } [.39, .87]$), and more positive for LSC Black people than LSC White people ($t(137) = 3.63, p < .001, |d| = .23, 95\% \text{ CI } [.01, .47]$). See Figure 1.

Additional Analyses. We conducted correlational analyses between all implicit and explicit measures and demographic subgroup analyses for all measures. See supplemental materials S1 and Tables S1-S5.

Discussion

As hypothesized, across all measures participants demonstrated more positive attitudes toward HSC people than LSC people. We observed this effect for ratings of White people and for ratings of Black people. Also consistent with our hypotheses, within social class comparisons

were more nuanced and varied by measure. For the implicit measure, participants had no significant implicit preference for HSC White people relative to HSC Black people but had strong bias in favor of LSC White people relative to LSC Black people. For cultural stereotypes, participants rated HSC White people and HSC Black similarly, but displayed a pro-White bias for LSC White people relative to LSC Black people. For the ratings of personal beliefs, participants revealed a pro-Black (relative to White) bias for HSC and LSC people, but this bias was stronger for ratings of HSC people than it was for LSC people.

STUDY 2

The goal of Study 2 was to replicate the effects from Study 1 but with a different implicit measure to ensure that the effects found are not specific to the IAT. To test this possibility, we assessed implicit attitudes toward race and social class with the Affective Misattribution Procedure (AMP; Payne et al., 2005). We utilized this popular, reliable, and valid measure, as past research highlights how the underlying mechanism of the AMP is distinct from the IAT (Bar-Anan & Nosek, 2012; Nosek, Hawkins, & Frazier, 2011). For instance, the IAT utilizes a categorization response mechanism; similar category pairs result in faster responding and dissimilar category pairs result in slower responding. There are correct answers on the IAT, and participants receive immediate feedback about the correctness of their responses. The AMP utilizes a misattribution response mechanism—participants misattribute affective reactions onto an ambiguous symbol, which suggests evaluative decisions drive responding on the AMP (Payne et al., 2005). There are no correct responses or response feedback on the AMP, which suggests participants might have a harder time monitoring their evaluative responses on this task (Payne, Govorun, & Arbuckle, 2008). Therefore, even though the AMP and IAT are both implicit

measures, their different underlying constructs could yield a different pattern of results. Thus, we included the AMP to develop a robust understanding of race x social class implicit attitudes.

Methods

Participants. We conducted an a priori power analysis with G*Power 3.1 (Faul et al., 2017) using the effect size generated from the initial AMP study (Payne et al., 2005). To detect medium effects ($|d| = .5$) with at least 95% statistical power, 53 participants were needed for this study. To detect small effects ($|d| = .3$) with at least 95% statistical power, 147 participants were needed for this study. Therefore, to detect small-medium effects, we set a recruitment goal of 145 participants to account for potential missing data. We also conducted a posthoc sensitivity analysis ($\beta = .95$, $p = .05$, two-tailed) using G*Power 3.1 (Faul et al., 2017), which revealed that a sample of 135 would be sufficiently powered to detect a minimum effect of $d = .31$.

One hundred and forty-seven U.S. university students ($M_{age} = 19.73$ years, $SD_{age} = 2.89$; 77% female; 54% White, 14% Asian, 27% Black/African American, 5% Other; 26% low/lower-middle social class, 24% middle social class, 25% upper-middle social class, and 19% high social class, 6% not reported) completed this study for partial course credit. A total of 17 participants were excluded from the AMP analyses for either pressing the same key for all answers, being able to read Chinese, or due to a computer malfunction. Thus, a total of 135 participants were included in the AMP analyses. However, to maximize power for the explicit measures, we retained all participants for those analyses.

Materials and Procedure. Participants first completed the AMP, which followed standard AMP procedures outlined in Payne et al. (2005). First, participants were presented with a face of either a LSC White man or LSC Black man or HSC White man or HSC Black man or neutral

object for 75ms. The race x social class stimuli were the same as in Study 1 and the neutral objects (e.g., furniture, office supplies) were selected from Internet searches. A blank screen followed the image for 125ms and then a picture of a Chinese symbol appeared for 100ms. Participants were asked to indicate if the Chinese symbol was a pleasant symbol or an unpleasant symbol. A mask was shown until participants submitted their responses. Participants completed 40 practice trials (20 practice trials of face stimuli and 20 practice trials of neutral stimuli) and 200 critical trials (100 trials of face stimuli and 100 trials of neutral stimuli). The AMP was programmed with E-Prime software.

After the AMP, participants completed the same questionnaires as in Study 1 in randomized order. These questionnaires measured attitudes about LSC White people (Cultural Stereotypes: Cronbach's $\alpha = .95$; Personal Beliefs: Cronbach's $\alpha = .96$), LSC Black people (Cultural Stereotypes: Cronbach's $\alpha = .94$; Personal Beliefs: Cronbach's $\alpha = .96$), HSC White people (Cultural Stereotypes: Cronbach's $\alpha = .94$; Personal Beliefs: Cronbach's $\alpha = .93$), and HSC Black people (Cultural Stereotypes: Cronbach's $\alpha = .96$; Personal Beliefs: Cronbach's $\alpha = .96$). Participants then filled out the same demographic questionnaire as in Study 1, with an additional question assessing whether they can read Chinese. All questionnaires were programmed with Qualtrics.

Results

AMP. AMP scores were computed by subtracting the average neutral stimuli score from each average face stimuli score to control for performance on the neutral trials (Payne et al., 2005). A 2 (race: Black, White) x 2 (social class: HSC, LSC) ANOVA revealed a significant main effect for race, $F(1, 134) = 8.23, p = .005, \eta^2_p = .06, 95\% \text{ CI} [.01, .15]$, a significant main

effect of social class, $F(1, 134) = 40.69, p < .001, \eta^2_p = .23, 95\% \text{ CI} [.12, .35]$, and no significant race x social class interaction, $F(1, 134) = .23, p = .630, \eta^2_p < .01, 95\% \text{ CI} [<.01, .04]$.

Participants had more positive attitudes toward HSC than LSC people and toward Black than White people. See Figure 2.

Cultural Stereotypes. A 2 (race: Black, White) x 2 (social class: HSC, LSC) repeated measures ANOVA revealed a significant main effect for social class, $F(1, 145) = 567.57, p < .001, \eta^2_p = .80, 95\% \text{ CI} [.74, .83]$, a marginally significant main effect for race, $F(1, 145) = 3.16, p = .078, \eta^2_p = .02, 95\% \text{ CI} [<.01, .09]$, and a significant race x social class interaction, $F(1, 145) = 62.11, p < .001, \eta^2_p = .30, 95\% \text{ CI} [.18, .41]$.

Follow-up paired samples *t*-tests revealed that participants rated cultural stereotypes as more positive for HSC White people ($M = 5.23, SD = .78$) than LSC White people ($M = 3.59, SD = .89; t(145) = 19.37, p < .001, |d| = 1.96, 95\% \text{ CI} [1.73, 2.19]$), more positive for HSC Black people ($M = 5.36, SD = .82$) than LSC Black people ($M = 3.19, SD = .81; t(146) = 24.62, p < .001, |d| = 2.66, 95\% \text{ CI} [2.43, 2.89]$), no difference between HSC Black people than HSC White people ($t(146) = -1.45, p = .151, |d| = .16, 95\% \text{ CI} [-.07, .39]$), and more positive for LSC White people than LSC Black people ($t(145) = 4.95, p < .001, |d| = .47, 95\% \text{ CI} [.24, .70]$). See Figure 3.

Personal Beliefs. A 2 (race: Black, White) x 2 (social class: HSC, LSC) repeated measures ANOVA revealed a significant main effect for social class, $F(1, 146) = 186.88, p < .001, \eta^2_p = .56, 95\% \text{ CI} [.46, .64]$, a significant main effect for race, $F(1, 146) = 42.92, p < .001, \eta^2_p = .23, 95\% \text{ CI} [.12, .34]$, and a significant race x social class interaction, $F(1, 146) = 22.88, p < .001, \eta^2_p = .14, 95\% \text{ CI} [.05, .24]$.

Follow-up paired samples *t*-tests revealed that participants rated personal beliefs as more positive for HSC White people ($M = 4.82$, $SD = .71$) than LSC White people ($M = 3.93$, $SD = .87$; $t(146) = 11.56$, $p < .001$, $|d| = 1.12$, 95% CI [.89, 1.35]), more positive for HSC Black people ($M = 5.39$, $SD = .86$) than LSC Black people ($M = 4.14$, $SD = .91$; $t(146) = 13.10$, $p < .001$, $|d| = 1.41$, 95% CI [1.18, 1.64]), more positive for HSC Black people than HSC White people ($t(146) = -8.35$, $p < .001$, $|d| = .72$, 95% CI [.49, .95]), and more positive for LSC Black people than LSC White people ($t(146) = -2.96$, $p = .004$, $|d| = .24$, 95% CI [.01, .47]). See Figure 3.

Additional Analyses. We conducted correlational analyses between all implicit and explicit measures and demographic subgroup analyses for all measures. See supplemental materials S2 and Tables S6-S8.

Discussion

Consistent with Study 1, across all (implicit and explicit) measures, participants had more positive attitudes toward HSC people than LSC people. This effect was found for ratings of White people and for ratings of Black people. Just like in Study 1, attitudes for within class comparisons were more nuanced. For the implicit measure, we found a different pattern of results than we found in Study 1. On the AMP, participants indicated a general pro-HSC bias, and this effect was observed for evaluations of White people and of Black people. Analysis of the explicit measures replicated the results of Study 1. For cultural stereotypes, participants rated HSC White people and HSC Black similarly, but displayed a pro-White bias for LSC White people relative to LSC Black people. For the ratings of personal beliefs, participants revealed a pro-Black (relative to White) bias for HSC and LSC people, but this bias was stronger for ratings of HSC people than it was for LSC people. Given that there were slight inconsistencies between

Studies IAT results of Study 1 and AMP results of Study 2, we aimed to replicate these findings in an additional, well-powered study.

STUDY 3

Methods

Participants. We conducted an a priori power analysis using G*Power 3.1 (Faul et al., 2017) with the effects from Studies 1 and 2. To detect small effects ($|d| = .3$) with at least 95% statistical power, 147 participants were needed for each condition of the study. In order to detect medium effects ($|d| = .5$) with at least 95% statistical power, 54 participants were needed for each condition of the study. Therefore, to detect small-medium effects, we aimed to recruit at least 100 participants per condition. We also conducted a posthoc sensitivity analysis ($\beta = .95$, $p = .05$, two-tailed) using G*Power 3.1 (Faul et al., 2017), which revealed that a sample of 199 would be sufficiently powered to detect a minimum effect of $d = .26$.

One hundred and ninety-nine U.S. university students ($M_{age} = 19.86$ years, $SD_{age} = 3.08$; 85% female; 61% White, 14% Asian, 17% Black/African American, 8% Other; 25% low/lower-middle social class, 34% middle social class, 22% upper-middle social class, and 17% high social class, 2% not reported) completed this study for partial course credit. Ninety-seven participants completed the compare race condition ($M_{age} = 20.13$ years, $SD_{age} = 3.72$; 84% female; 58% White, 17% Asian, 16% Black/African American, 9% Other). Eighty-five participants completed the compare class condition ($M_{age} = 19.69$, $SD_{age} = 2.46$; 86% female; 66% White, 11% Asian, 17% Black/African American, 6% Other). Thirteen participants were excluded from the IAT analyses due to an experimenter error in IAT administration and four participants were excluded for having either latencies $>10,000$ ms or latencies <300 ms in more

than 10% of trials. Thus, a total of 182 participants were included in IAT analyses. Separately, eight participants were excluded from the AMP analyses—two for pressing the same key for all answers, and six for being able to read Chinese. Thus, a total of 191 participants were included in the AMP analyses. We retained all participants for the explicit attitude assessments to maximize power.

Materials and Procedure. The materials for this study were the same as in Study 1 and 2. Participants first completed the IAT and AMP in counterbalanced order. Participants in the compare class condition completed the HSC-LSC Black IAT (split-half $\alpha = .68$) and HSC-LSC White IAT (split-half $\alpha = .50$) in counterbalanced order. Participants in the compare race condition completed the HSC White-Black IAT (split-half $\alpha = .75$) and LSC White-Black IAT (split-half $\alpha = .60$) in counterbalanced order. Participants then completed the cultural stereotypes and personal beliefs questionnaires in randomized order about LSC White people (Cultural Stereotypes: Cronbach's $\alpha = .95$; Personal Beliefs: Cronbach's $\alpha = .95$), LSC Black people (Cultural Stereotypes: Cronbach's $\alpha = .96$; Personal Beliefs: Cronbach's $\alpha = .95$), HSC White people (Cultural Stereotypes: Cronbach's $\alpha = .94$; Personal Beliefs: Cronbach's $\alpha = .94$), and HSC Black people (Cultural Stereotypes: Cronbach's $\alpha = .97$; Personal Beliefs: Cronbach's $\alpha = .96$). Finally, participants completed the same demographic questionnaire as in Study 2.

Results

IAT. IAT standardized D scores were calculated the same way as described in Study 1. One-sample t -tests revealed significant pro-HSC Black/anti-LSC Black biases ($M = .55$, $SD = .32$; $t(96) = 16.90$, $p < .001$, $|d| = 1.72$, 95% CI [.48, .61]), significant pro-HSC White/anti-

LSC White biases ($M = .38$, $SD = .14$; $t(96) = 10.46$, $p < .001$, $|d| = 1.06$, 95% CI [.31, .45]), significant pro-HSC White people/anti-HSC Black people ($M = .14$, $SD = .49$; $t(83) = 2.61$, $p = .011$, $|d| = .29$, 95% CI [.03, .25]), and significant pro-LSC White/anti-LSC Black biases ($M = .45$, $SD = .29$; $t(84) = 14.54$, $p < .001$, $|d| = 1.55$, 95% CI [.39, .51]).

AMP. AMP scores were calculated the same way as described in Study 2. A 2 (race: Black, White) x 2 (social class: HSC, LSC) ANOVA revealed a significant main effect for social class, $F(1, 189) = 84.61$, $p < .001$, $\eta^2_p = .31$, 95% CI [.21, .40], a nonsignificant main effect for race, $F(1, 189) = 2.38$, $p = .125$, $\eta^2_p = .01$, 95% CI [<.01, .06], and nonsignificant race x social class interaction, $F(1, 189) = .06$, $p = .807$, $\eta^2_p < .01$, 95% CI [<.01, .02]. Participants had more positive attitudes toward HSC than LSC people, regardless of race. See Figure 2.

Cultural Stereotypes. A 2 (race: Black, White) x 2 (social class: HSC, LSC) repeated measures ANOVA a significant main effect for social class, $F(1, 198) = 579.09$, $p < .001$, $\eta^2_p = .75$, 95% CI [.69, .79], a non-significant main effect for race, $F(1, 198) = 1.37$, $p = .244$, $\eta^2_p = .01$, 95% CI [<.01, .05], and a significant race x social class interaction, $F(1, 198) = 11.69$, $p = .001$, $\eta^2_p = .06$, 95% CI [.01, .13].

Follow-up paired t -test revealed that participants rated cultural stereotypes as more positive for HSC White people ($M = 5.23$, $SD = .87$) than LSC White people ($M = 3.35$, $SD = .89$; $t(198) = 20.41$, $p < .001$, $|d| = 2.14$, 95% CI [1.94, 2.33]), more positive for HSC Black people ($M = 5.31$, $SD = .94$) than LSC Black people ($M = 3.15$, $SD = .93$; $t(198) = 22.79$, $p < .001$, $|d| = 2.31$, 95% CI [2.11, 2.51]), no difference between HSC Black people and HSC White people ($t(198) = -1.10$, $p = .272$, $|d| = .09$, 95% CI [.11, .29]), and more positive for LSC

White people than LSC Black people ($t(198) = 3.09, p = .002, |d| = .22, 95\% \text{ CI} [.02, .42]$). See Figure 4.

Personal Beliefs. A 2 (race: Black, White) x 2 (social class: HSC, LSC) repeated measures ANOVA revealed a significant main effect for social class, $F(1, 198) = 251.36, p < .001, \eta^2_p = .56, 95\% \text{ CI} [.47, .63]$, a significant main effect for race, $F(1, 198) = 116.40, p < .001, \eta^2_p = .37, 95\% \text{ CI} [.27, .46]$, and a significant race x social class interaction, $F(1, 189) = 49.02, p < .001, \eta^2_p = .20, 95\% \text{ CI} [.11, .29]$.

Follow-up paired samples t -tests revealed that participants rated personal beliefs as more positive for HSC White people ($M = 4.78, SD = .76$) than LSC White people ($M = 3.86, SD = .82; t(198) = 12.28, p < .001, |d| = 1.16, 95\% \text{ CI} [.97, 1.36]$), more positive for HSC Black people ($M = 5.45, SD = .78$) than LSC Black people ($M = 4.15, SD = .86; t(198) = 17.19, p < .001, |d| = 1.58, 95\% \text{ CI} [1.39, 1.78]$), more positive for HSC Black people than HSC White people ($t(198) = -12.50, p < .001, |d| = .87, 95\% \text{ CI} [.67, 1.07]$), and more positive for LSC Black people than LSC White people ($t(198) = -5.65, p < .001, |d| = .35, 95\% \text{ CI} [.15, .54]$). See Figure 4.

Additional Analyses. We conducted correlational analyses between all implicit and explicit measures and demographic subgroup analyses for all measures. See supplemental materials S3 and Tables S9-S14.

Discussion

Consistent with Studies 1 and 2, participants demonstrated a bias in favor of HSC people relative to LSC people across all measures for White people and for Black people. For within social class comparisons, results were again nuanced and varied by measure. Both implicit

measures showed a different pattern of within social class comparison results in Study 3 relative to the previous studies. On the IAT, we observed a bias in favor of HSC White people relative to HSC Black people (the effect observed in Study 1 was in the same direction, but non-significant and near zero) and, similar to Study 1, a much stronger bias in favor of LSC White people relative to LSC Black people. On the AMP, the main effect of social class observed was the same as in Study 2—participants demonstrated a pro-HSC (relative to LSC) bias. Unlike in Study 2, there was no difference in AMP biases toward White and Black people. (The effects observed were in the same direction as the pro-Black people relative to White people bias that we observed in Study 2, but the Study 3 effects were smaller and nonsignificant.) For both explicit measures the HSC White people versus HSC Black people comparisons and the LSC White people versus LSC Black people comparisons nearly identically replicated the results found in Studies 1 and 2.

GENERAL DISCUSSION

The current work aimed to examine how the intersection of race and social class affects implicit and explicit attitudes. Specifically, for within race comparisons explicit attitudes (on the cultural stereotypes and personal beliefs questionnaires) and implicit attitudes (on the IAT) toward HSC White people and HSC Black people were more positive than attitudes toward LSC White people and LSC Black people, respectively. Yet for within social class comparisons, attitudes were more nuanced. For HSC White people versus HSC Black people, on the explicit measures (cultural stereotypes and personal beliefs), participants consistently indicated no difference in cultural stereotypes between HSC White people and HSC Black people, but more positive personal beliefs toward HSC Black people than HSC White people. For implicit attitudes (on the IAT), in some instances, participants indicated more positive attitudes toward

HSC Black people than HSC White people (Study 3), but in other cases, they indicated no difference between these two groups (Study 1). For LSC Black people versus LSC White people, participants consistently indicated more positive cultural stereotypes for LSC White people than LSC Black people, but more positive personal beliefs for LSC Black people than LSC White people. For implicit attitudes measured with the IAT, participants indicated more positive attitudes for LSC White people than LSC Black people. Overall, there was not an interaction between race and social class on the AMP, however, participants demonstrated pro-HSC (Studies 2 and 3) and pro-Black (Study 2) preferences.

Although there are some inconsistencies throughout the data, what is interesting about the current results is that pro-Black personal beliefs and, in some instances, implicit attitudes occurred when social class was held constant. That is, participants held more positive personal beliefs in all studies and more positive implicit attitudes (IAT—Study 2) toward HSC Black people than HSC White people. Personal beliefs were also consistently more positive for LSC Black than LSC White people. On the AMP, there was a significant main effect of race in Study 2—participants demonstrated more positive attitudes toward Black than White people. These findings are inconsistent with past research that generally finds a pro-White bias on implicit and explicit measures (e.g., Greenwald et al., 1998; Moore-Berg et al., 2017; Payne et al., 2005). One potential reason for the pro-Black bias could be due to the environment that these participants are exposed to. Notably, the university that these students attend has both a diverse student body and is in a diverse, urban neighborhood. As the contact literature suggests, exposure to people of different races improves both implicit and explicit attitudes toward minority groups (e.g., Prestwich, Kenworthy, Wilson, & Kwan-Tat, 2008). Thus, exposure to people of different racial and socioeconomic backgrounds could result in more positive attitudes toward Black people in

general. Another potential explanation for the pro-Black bias could be social desirability. Research suggests that participants might be motivated to modify their responses to what they think is socially desirable (Huddy & Feldman, 2009), especially on socially sensitive topics; therefore, participants might have modified their responses in accordance with what they thought was socially appropriate. These question warrants further exploration in future work.

As another future direction, researcher should examine the intersecting role of other social categories with race and social class (such as gender). Here we kept gender constant to isolate the intersecting effects of race and social class; however, as research suggests, all three social categories can intersect to influence intergroup processes (see Cole, 2009). For example, racist imagery of Black women often features them as “welfare queens” (Levin, 2013). Likewise, mental representations of LSC people tend to look Blacker and more female, whereas mental representations of HSC people tend to look Whiter and male (Brown-Iannuzzi et al., 2017). We encourage researchers to consider the role of gender when examining race and social class attitudes.

In conclusion, the investigation of attitudes about race and social class has long captivated researchers’ interest. Yet much of the past research has focused on single category race or social class attitudes, with little attention to the intersection of race and social class categories. The current research clarifies how the intersection of race and social class affects attitudes and provides important evidence for variations in implicit and explicit attitudes for within race versus within social class comparisons. Ultimately understanding the extent to which

attitudes vary by race and social class will uncover important information about stereotype expression.

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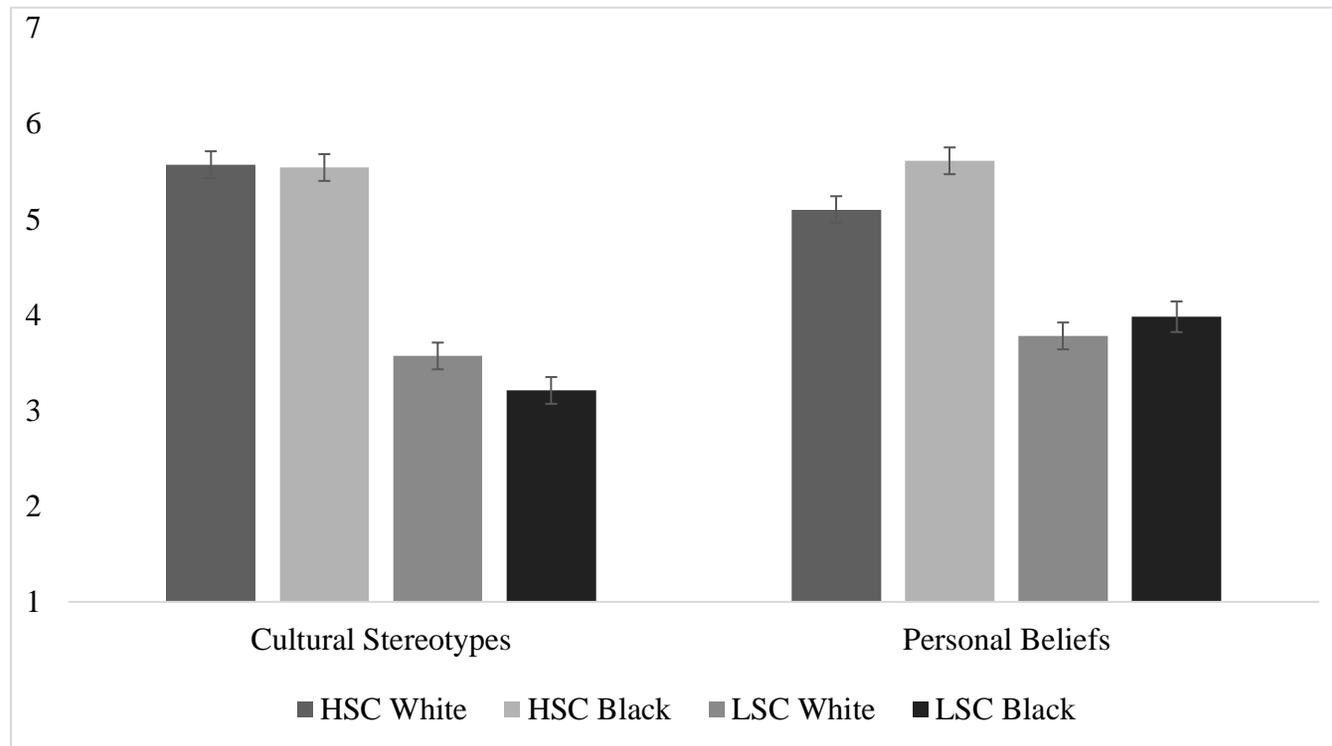


Figure 1. Study 1 cultural stereotypes and personal beliefs mean scores. Higher scores indicate more positive attitudes. HSC = high social class, LSC = low social class. Cultural Stereotypes: HSC White = HSC Black, LSC White > LSC Black, HSC White > LSC White, HSC Black > LSC Black. Personal Beliefs: HSC White < HSC Black, LSC White < LSC Black, HSC White > LSC White, HSC Black > LSC Black. Error bars represent 95% CI.

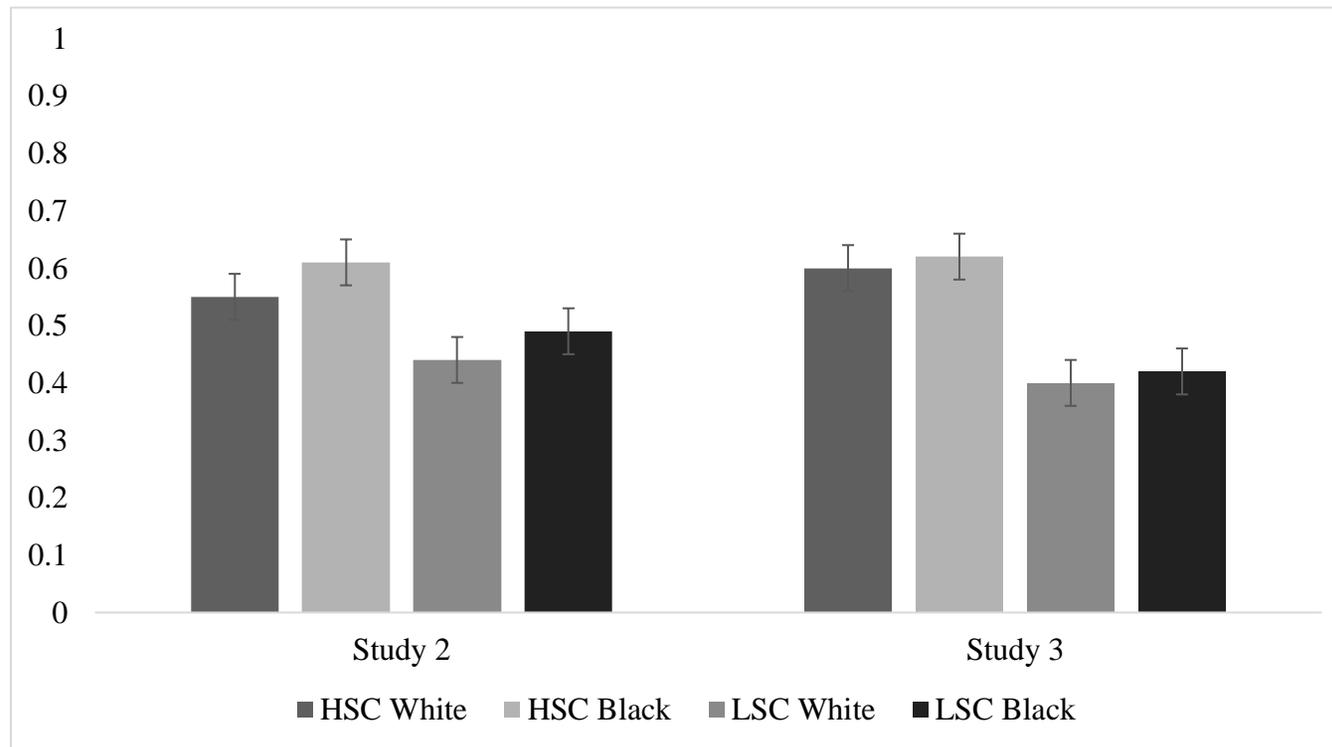


Figure 2. Studies 2 and 3 AMP absolute mean scores. Higher scores indicate more positive attitudes. HSC = high social class, LSC = low social class. Main effect of race (Study 2) and main effect of social class (Studies 2 and 3). Error bars represent 95% CI.

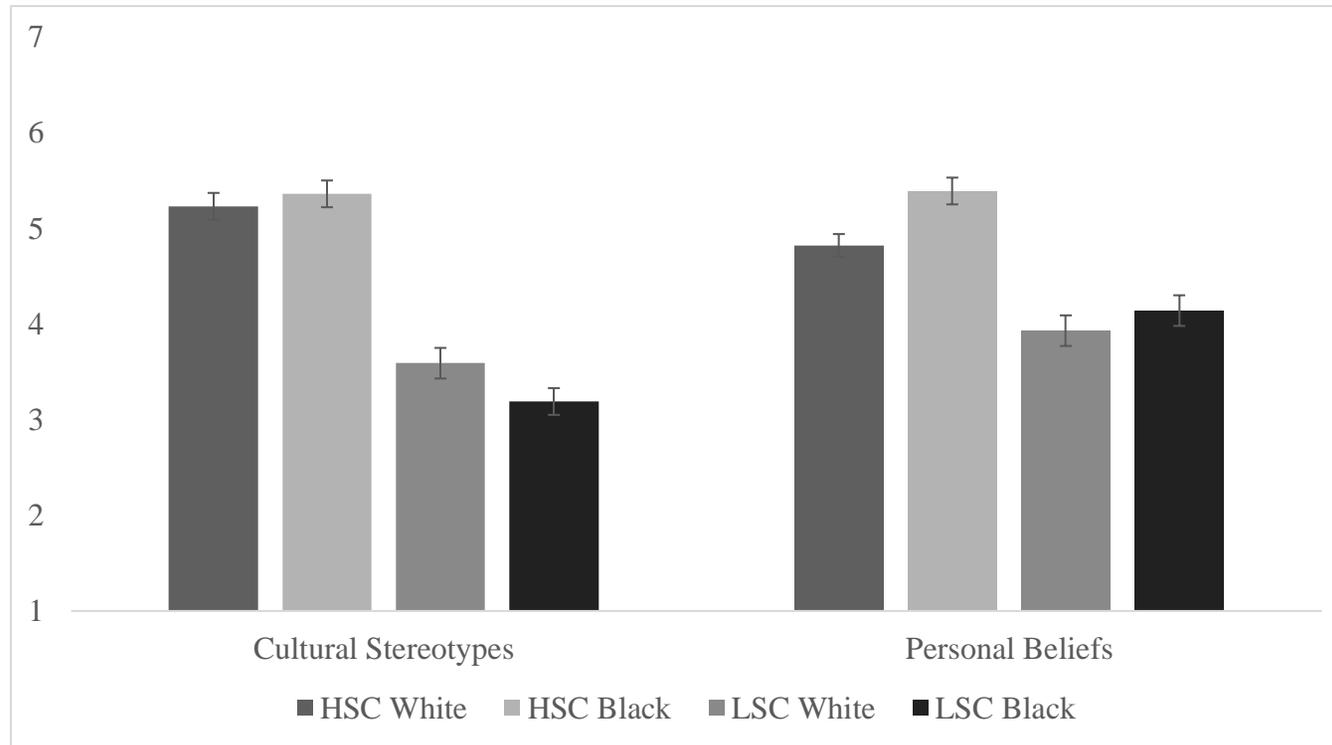


Figure 3. Study 2 cultural stereotypes and personal beliefs mean scores. Higher scores indicate more positive attitudes. HSC = high social class, LSC = low social class. Cultural Stereotypes: HSC White = HSC Black, LSC White > LSC Black, HSC White > LSC White, HSC Black > LSC Black. Personal Beliefs: HSC White < HSC Black, LSC White < LSC Black, HSC White > LSC White, HSC Black > LSC Black. Error bars represent 95% CI.

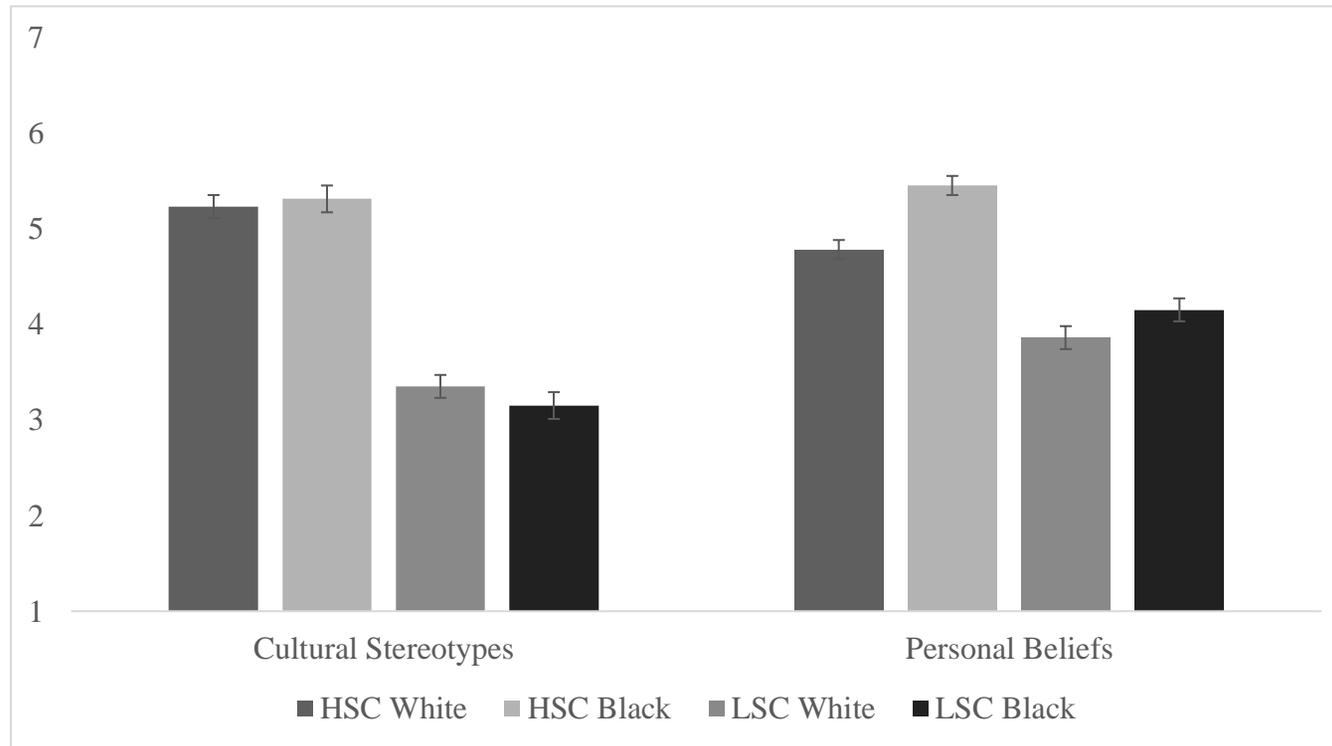


Figure 4. Study 3 cultural stereotypes and personal beliefs mean scores. Higher scores indicate more positive attitudes. HSC = high social class, LSC = low social class. Cultural Stereotypes: HSC White = HSC Black, LSC White > LSC Black, HSC White > LSC White, HSC Black > LSC Black. Personal Beliefs: HSC White < HSC Black, LSC White < LSC Black, HSC White > LSC White, HSC Black > LSC Black. Error bars represent 95% CI.