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Reward Frustration Can Selectively Amplify Negative Own-Race Biases

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Abstract

White Americans, when incidentally angered, become more likely to exhibit 'implicit biases' towards racial groups perceived as hostile (Dasgupta, 2013). We explored Dasgupta's claims across cohorts of White, Black and non-Black/non-White (non-BW) participants from the United States, classified along political ideology (liberal and conservative). All participants evaluated White and Black neutral male faces using implicit (time-restricted) and explicit scales. Before evaluations, negative affect was instrumentally induced for approximately half of our sample. Following Dasgupta (2013), we expected any latent racial biases would be 'magnified' across implicit measures for frustrated cohorts. This prediction was corroborated across White liberals and Black conservatives who, when frustrated, displayed less favorable implicit evaluations towards *own*-race faces. Along explicit measures, White and Black cohorts generated comparable levels of own-race evaluations, independent of ideology. This was not the case during other-race evaluations, where a general pro-Black bias was noted for liberals, and a pro-White bias for conservatives, independent of the evaluator's race. These findings support the idea that liberals, being ideologically driven to promote equality, automatically favor disadvantaged groups, while conservatives, motivated to preserve the status quo, favor advantaged groups (Winegard et al., 2018).

Keywords: Racial evaluations, Reward frustration, Political ideology

1 Introduction

Own-race favoritism refers to the tendency of individuals to evaluate members of their own ethnic or racial group more favorably than racial outgroups (Hehman et al., 2019). This inclination has been linked with various socially adaptive functions, including fostering solidarity and altruism among own-race members, maintaining status hierarchies, and enhancing overall group fitness (Clark et al., 2019; Dutton, Madison & Lynn, 2016; Sidanius et al., 2017). Such features contribute to higher levels of reported well-being in racially homogeneous relative to racially heterogeneous societies, even if the latter are materially more prosperous (Okulicz-Kozaryn, 2019). The phenomenon of own-race favoritism has been theorized to reflect evolutionary mechanisms related to identifying non-familial tribal members sharing genetic relatedness (Lewis & Bates, 2010) as well as socialization histories, seeing how individuals typically encounter own-race members more frequently from an early age (Anzures et al., 2013).

Explicit favoritism towards one's racial ingroup, while adaptively beneficial, is not equally observed among all racial groups. In the United States for example, White respondents who identify as politically liberal are notable for being a socially advantaged racial group who exhibit relatively negative own-race (and positive other-race) biases compared to White conservatives and non-White racial groups (Goldberg, 2019). The relatively negative appraisal of one's socially advantaged racial ingroup, and the positive evaluation of a socially disadvantaged racial outgroup, may derive from a liberal egalitarian epistemology (Kteily et al., 2019; Winegard et al., 2018). In the United States, being liberal is associated with a commitment towards achieving material (racial/economic/social) equality, even when doing so overrides considerations of other social values (e.g., of order, security, conservation, prosperity; see Kekes 1997, pp. 201-203). An egalitarian ideology may compel liberals to favor socially disadvantaged groups publicly, potentially at their own ethnic group's expense, yet individuals and their families may reap personal benefits by being perceived as virtuous within liberal circles (Burnham, 2014).

Claims of White liberals evaluating disadvantaged outgroups more favorably relative to White conservatives are not new (Jost, 2018). Rather, these evaluation patterns can be qualified by noting they

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are typically collected under unconstrained processing conditions, as with time-unrestricted surveys and self-report scales. By 'unconstrained', we describe any task that provides ample time for participants to freely deliberate in accord with consciously held beliefs before responding (Amd & Baillet, 2019). This means that participants who wish to not appear racially biased can voluntarily moderate their race-based evaluations accordingly (Gawronski, 2019). Thus, White liberals may deliberately evaluate disadvantaged groups more favorably to accommodate their egalitarian epistemology (Winegard et al., 2018).

However, if evaluations are collected under 'constrained' processing conditions, as with time-restricted measures such as Implicit Association Test (IAT; Srirarm & Greenwald, 2009), both White liberals and conservatives reportedly exhibit similar levels of own-race favoritism (Jost, Banaji & Nosek, 2004). Performance-based IATs, unlike surveys, constrain top-down deliberation by restricting response time and available options. Doing so enables the capture of 'automatic' racial evaluations that, presumably, are less susceptible to top-down moderation than unconstrained survey responses (Coutts, 2020). If implicit biases correspond with real-life biases, then the fact that White liberals and White conservatives display comparable levels of own-race favoritism (under constrained conditions) implies own-race favoritism to be the normative case across socially advantaged Whites, independent of ideological differences (Coutts, 2020; Mooney, 2014). On balance, time-restricted IATs, while more restrictive relative to time-unrestricted surveys, ultimately capture *evaluative* responses, which are necessarily deliberated and susceptible to consciously held beliefs (Amd, 2023). Participants undergoing implicit measures can therefore voluntarily conceal their biases when sufficiently motivated to do so (Fiedler & Bluemke, 2005). These qualifications complicate claims of implicit own-race favoritism as being consistent across White liberals and conservatives (Coutts, 2020; Jost, 2018).

While responses from implicit measures can be susceptible to top-down moderation, this susceptibility can be somewhat mitigated through the induction of a negative emotional state. According to Dasgupta (2013), incidentally inducing anger (across cohorts of White participants) can function to "magnify implicit bias" towards racial outgroups associated with "aggressive and/or hostile tendencies" (pp. 268-270). Those claims derive from an earlier study by Dasgupta and colleagues (2009), who showed that White participants who had been initially neutral towards a racial outgroup (Arabs) came to exhibit negative implicit biases towards that same outgroup once incidentally angered. In other words, angering White participants led to the detection of implicit biases that may have otherwise been (voluntarily) suppressed.

Following Dasgupta's (2013) reasoning, we generated the following hypothesis: If White liberals categorically prefer socially disadvantaged over socially advantaged groups publicly to accord with their egalitarian ideology, then angering the former would similarly uncover or "magnify" any suppressed implicit biases. We focus on White liberals given their unique position as members of a socially advantaged racial group ideologically motivated to devalue their own race given its socially advantaged status (Goldberg, 2019). White conservatives, on the other hand, would not be conflicted towards exhibiting own-race favoritism, seeing how their epistemology centers around preserving the "status quo" (Jost 2018, p. 39). Angering White conservatives would, at best, augment racial biases they already exhibit under normative conditions (Banks, 2016).

These hypotheses were explored for in the present study, which involved measuring implicit and explicit racial evaluations generated by White, Black, and other minority (non-BW) samples categorized along liberal and conservative political ideology. All participants evaluated White and Black emotionally neutral male faces matched along levels of attractiveness and other attributes (see Materials). We induced negative affect (frustrated) approximately half of our sample to note whether racial evaluations varied relative to non-frustrated cohorts. Alongside providing racial evaluations, participants indicated their levels of agreement with nine policy statements. Five of these reflected support for egalitarian policies, and four statements reflected status-preserving policies (see Materials). We correlated agreement ratings for individual policies with self-reported participant ideology to explore whether identifying as liberal (or conservative) predicted support for egalitarian (or status-preserving) perspectives.

Contra Dasupta et al. (2009), who used an autobiographical recall procedure for influencing mood, we deployed an instrumental color discrimination task for inducing negative affect across our sample (Amsel, 1992). Our intent was to mimic real-life frustrating circumstances which provide no clear attribution targets (e.g., losing change to a vending machine and not having 'someone' to blame; Killeen, 1994). We decided

against using autobiographical recall because this involves extensive deliberations which could incidentally elicit memories of racial attribution targets. If the latter included memories of prior negative interactions with the target outgroup, racial evaluations could be influenced downstream. While this confound can be partly mitigated through qualitative assessments of individual participant autobiographies (Dasgupta et al., 2009), our mood induction strategy avoided this concern altogether. The elicitation of a negative affective state ('frustration') following the unannounced omission of an expected reward is a reliable, cross-species phenomenon that minimally involves, if at all, top-down deliberative influences (Amsel, 1992). Any effects on racial evaluations following reward frustration could thus be attributable more confidently to current mood than to downstream effects of idiosyncratic memories.

Another feature of the current study worth highlighting is the decision to recruit from Black and other minority, non-Black and non-White (non-BW) cohorts from the United States. We had already hypothesized that political ideology, moderated by affective state, might differentially influence racial evaluations generated by White Americans, who represent a socially advantaged majority group in the United States. We explored whether similar hypotheses would apply to Black Americans who represent a socially disadvantaged minority group. If political ideology functions as a salient predictor of Black Americans' racial attitudes then, for Black liberals, the display of own-race favoritism (pro-Black attitudes) would be predicted, as this is consistent with their liberal ideological commitments (categorically preferring a socially disadvantaged over an advantaged group). For Black conservatives, on the other hand, we suspect that tendencies towards own-race favoritism might be dampened by an ideologically motivated inclination to favor socially advantaged groups who, in the United States, are White Americans (Jost, 2018).

Remaining participants, sampled from non-Black/White (non-BW) minority groups, were recruited to identify the scope of ideological categories towards predicting evaluations of racial outgroups. Non-BWs were used as the reference group during regression analysis, with their inclusion allowing for a more nuanced understanding of racial evaluation dynamics across a broader spectrum of racial identities. This approach helped isolate the specific influences of being White or Black within the U.S. context, relative to other groups. If political ideology is central to racial attitudes, we reasoned that comparable evaluation patterns would be detected across liberal respondents (i.e., disadvantaged $>$ advantaged, or 'pro-Black', preferences) independent of participant race. Relatedly, we can expect comparable evaluations by conservatives from all races (i.e., advantaged $>$ disadvantaged, or 'pro-White', preferences). Another possibility is that the presence of one's own racial group as an evaluation target is a precondition for politically motivated racial attitudes, in which case we would view racial evaluations to be salient across White and Black cohorts only (as evaluation targets consisted of White and Black faces exclusively).

Summarizing across these points, we predict that, for, Black conservatives and White liberals, displays of own-race favoritism would be attenuated relative to Black liberals and White conservatives. This is because, for the former, own-race favoritism is arguably inconsistent with their respective ideological positions. Performances by Black conservatives and White liberals are of particular interest as they will inform whether the adaptively beneficial tendency to exhibit own-race favoritism can be superseded by socially conditioned ideological commitments. For Black liberals and White conservatives, on the other hand, displays of own-race favoritism are congruent with their respective ideologies, so no conflicts are expected.

Finally, inspection of racial evaluations generated by non-BW liberals and conservatives will reveal the predictive utility of a liberal or conservative ideological classification across different racial outgroups in the United States. If politically motivated racial evaluations generated by White and Black Americans do not replicate across non-BW cohorts, this would imply ideological influences on racial preferences become salient only when one's own group is under consideration. Conversely, observing parallel effects across White and all non-White cohorts would spotlight the significance of ideology in predicting racial evaluations. As no previously published research has explored these questions, our study stands to provide novel insights on racial evaluation dynamics. We systematically describe, for the first time, whether and how situational frustration moderates implicit and/or explicit racial evaluations along ideological lines (liberal vs conservative) for socially advantaged Whites and socially disadvantaged Blacks, relative to a non-Black/non-White (non-BW) minority cohort, from the United States.

2 Method

2.1 Participants

All participants were recruited from the academic site Prolific. We aimed to sample as many self-identified liberal and conservative participants from White and non-White groups prior to the 2020 election. A total of 334 participants were recruited for the present work, from which 24 participants were dropped due to failing attention checks (see Procedure). This left a sample consisting of 74 Conservative Whites, 69 Liberal Whites, 5 Moderate Whites, 47 Conservative Blacks, 45 Liberal Blacks, 30 Conservative Non-BW, 37 Liberal Non-BW, 3 Moderate Non-BW, where 'Non-BW' indicates participants who had identified with ethnic groups other than Black or White (specifically, 23 East Asians, 22 Hispanics, 13 South Asian/Pacific Islanders and 12 participants from unspecified backgrounds). Ideological classifications (liberal/moderate/conservative) were derived from participant responses on an 11-point continuous scale, anchored by the labels *Strongly Liberal and Strongly Conservative* respectively. Similar scales have been used by the American National Election Studies (ANES, 2018) and independent researchers (e.g., Jost, Nosek & Gosling, 2008) for classifying respondents from the United States along political ideology. Participants who responded with values higher, lower, or equal to the scale median were classified respectively as conservative, liberal or moderate. Because only 8 out of 310 participants identified as moderate, these were removed from current analyses, leaving a final sample of 302 participants (mean age = 31.7 years, SD = 11.5; 145 females).

2.2 Materials

All tasks were programmed and administered on the Gorilla platform (Anwyl-Irvine et al., 2020) and have been made openly available on `https://gorilla.sc/openmaterials/100671`. Face stimuli were taken from the Chicago Faces Database (CFD; Ma, Correll & Wittenbrink, 2015) and consisted of four Black and four White emotionally neutral male faces (CFD-IDs: BM-230, BM-224, BM-233, BM-213, WM-220, WM243, WM-010, WM-019; Ma et al., 2015). Black and White face categories did not vary along anger, attractiveness, or perceived threat (all p's $> .5$). Only male face targets were used to minimize gender influences on outcome measures. Political ideology was measured using an 11-point slider scale anchored by Strongly Liberal and Strongly Conservative on the left and right sides respectively. Political ideology was correlated with nine policy positions supporting hierarchical (4) or egalitarian (5) worldviews, which are typical of conservative and liberal ideological epistemologies in North America respectively (Clark & Winegard, 2020; Everett, 2013). Participants additionally completed a personality inventory measuring the Big Five traits of extroversion, neuroticism, openness, conscientiousness and agreeableness (Rammstedt & John, 2007). Participants also completed survey items related to religiosity, income level and sexuality, which were unrelated to the current hypotheses and are not reported in the main manuscript, with the exception of responses to the survey item *How strongly do you identify with your ethnicity?*, and personality trait differences between ideological groups. Data organization and analyses were run on RStudio (RStudio Team, 2020) using the **tidyverse** (Wickham et al., 2019), **rstatix** (Kassambara, 2021), **apa** (Gromer, 2020), **ggthemes** (Arnold, 2021), and **ggplot2** (Wickham, 2016) packages. The submitted manuscript was typeset on RMarkdown (Baumer & Udwin, 2015) on a *papaja* (Aust & Barth, 2020) generated template. Data, analysis scripts and the raw markdown file for the registered preprint are available in the online OSF file.

3 Results

Tasks are described by their order of appearance.

3.1 Political ideology and policy positions

After providing informed consent and completing demographic and personality surveys, participants rated their agreement with nine policy statements (five egalitarian and four hierarchical) on 5-point slider scales, ranging from strongly agree (1) to strongly disagree (5). The five egalitarian statements were:

1. The world would be better without any organized religion.

2. The government should redistribute wealth from people with more money to people with less money.
3. Increasing taxes on industry will help fight climate change.
4. The death penalty should be abolished for all cases.
5. Achieving economic equality is more important than preserving individual freedoms.

The four hierarchical statements were:

1. Society works best when men and women conform to traditional gender roles.
2. The maintenance of national order is more important than ensuring individual freedom.
3. Some cultures are inherently incompatible.
4. A government must ensure complete loyalty of its citizens to the state.

Next, participants reported their political ideology on an 11-point scale, with the labels "Strongly liberal" (1) and "Strongly conservative" (11) on the left and right ends, respectively. Participants who moved the slider left (between 1 and 5) were nominally classified as liberal, and participants who moved the slider right (between 7 and 11) were nominally classified as conservatives, during planned contrasts. The classification of respondents into liberals and conservatives was meant to represent the two-tier political system in the United States where, on views of policy and voting decisions, distinctions *within* liberals and conservatives are less salient than distinctions between the two groups, independent of how strongly respondents identify with their respective ideologies (Fiorina & Abrams, 2008; LaLoggia, 2019).

3.2 Frustration induction task (FIT)

Participants viewed onscreen instructions describing that *they could win (or lose) $$$ for some correct (or incorrect) responses* and that there *may be deception involved* in the upcoming task. During ensuing trials, participants viewed four colored squares along each screen quadrant, one of which was always light blue. Participants had 3 seconds to select the 'correct' comparison using a mouse pointer, which was always the blue square. Remaining squares varied between shades of grey, orange and green. Selecting the blue square produced a green checkmark; if any other square was selected, or no responses were detected within 3 seconds of target onset, a red x appeared. If participants produced accurate responses during the 4th/7th/9th trials, they viewed the statements "*You have won $2/$3/$4!*" after the green checkmark. Incorrect/slow responses during the 4th/7th/9th trials produced a red x and the message "*Wrong. Be careful...*" For participants assigned to the frustrated condition, any response during the 11th trial produced a red x and the message "*Wrong. You have lost all your earnings*". For participants in the non-frustrated ('calm') condition, the 11th conditional discrimination trial progressed as normal and did not produce any message after a response. Participants were asked to indicate their current moods (anger/frustration/happiness/optimism) using 11-point scales during the 8th and 12th trials. Completion of 12 trials was followed by a brief implicit association test (Sriram & Greenwald, 2009).

3.3 Brief implicit association test (BIAT)

A *BIAT* with four 20-trial blocks was administered to all participants. Across any given BIAT trial, participants could view a White or Black face, or a positive (GOOD, NICE, PLEASANT, APPEALING) or negative (BAD, DISGUSTING, UNPLEASANT, UGLY) word, in the center of the screen. At the beginning of each trial block, participants were instructed to press the letter 'k' if a race-specific exemplar or a positive word appeared; otherwise to press the letter 'd' for negative words or the alternate racial category. Across two blocks, participants were instructed to press 'k' if Black faces or positive words appeared; across the two remaining blocks, participants were instructed to press 'k' if White faces or positive words appeared. A correct (incorrect) keypress within 3000 ms of stimulus onsets produced a green checkmark (red x) for 300 ms before the following trial. If no response was detected within 4000 ms, a message stating 'too slow' appeared for 300 ms before the next trial.

BIAT trials were parsed into two Focal Categories (FCs). Trials where White faces/positive attributes and Black faces/negative attributes respectively shared the focal responses 'k' and 'd' were classified under FC1. Trials where Black faces/positive attributes and White faces/negative attributes respectively shared the focal responses 'k' and 'd' were classified under FC2. Test block sequences were counter-balanced across participants. Completion of 80 BIAT trials produced the final phase of the task.

3.4 Explicit face evaluations

In the final phase, participants evaluated each of the faces they had previously viewed four times, providing separate evaluations for White and Black face targets. Specifically, participants viewed a face accompanied by one of four questions, asking how TRUSTWORTHY [POS1] or SUSPICIOUS [NEG1] they found the displayed face, or whether they desired to MEET [POS2] or AVOID [NEG2] the person associated with the displayed face. Face and question sequences were randomized between participants. The entire phase contained 32 evaluation trials and two attention check trials. The latter required participants to provide a specific rating in the presence of a novel face. Producing an incorrect response here led to the participant's removal from analyses. All responses were made along 11-point scales (scored from 1 – Not at all to 11 – Very much). Ratings across POS1 and POS2 captured positive target bias; ratings across NEG1 and NEG2 captured negative target bias.

4 Discussion

4.1 Data preparation

Four outcome parameters were generated for individual participants. First, a normalized 'affect score' was derived from responses during the mood induction task by normalizing mood ratings before and after the 11th trial for happiness, optimism, anger, and frustration scores. See Equation 1

$$\frac{After - Before}{After + Before} \tag{1}$$

Anger and frustration scores were multiplied by -1 to represent negative mood states. Summing across the four normalized moods generated an affect score, with positive (or negative) scores indicating a positive (or negative) shift in mood (Amd, 2023). Second, a Greenwald's difference score, indicating automatic ('implicit') racial biases, was calculated following Sriram and Greenwald (2009)'s recommendations. First, we confirmed that reaction times for focally accurate responses were significantly shorter than focally inaccurate responses across conditions (all p's $< .01$), indicating task instructions had been attended to. Second, we dropped the first four trials from each 20-trial BIAT block to control for practice effects. Next, we excluded all responses generated within 200 ms of stimulus onset as well as all non-focal/incorrect responses. Greenwald's difference score ($d_{Implicit}$) was computed as the ratio of the mean difference in reaction times between focally accurate responses across FC1 and FC2 categories and their inclusive (non-pooled) standard deviation. Positive (or negative) $d_{Implicit}$ values imply pro-White/anti-Black (or pro-Black/anti-White) attitudes.

We then estimated difference scores for explicit evaluations collected for White and Black faces separately. Likert scale ratings for White and Black targets were transformed into two explicit evaluation scores (d_{White}, d_{Black}) using the following steps. First, for each face (F), a difference score was calculated by subtracting the sum of negative evaluations from the sum of positive evaluations, so $d_F = POS1_F + POS2_F$ – ($NEG1_F + NEG2_F$). Next, the average of the difference scores across the four White and four Black faces were extracted as d_{White} and d_{Black} respectively. A positive (or negative) d_{White} score indicated pro-White (or anti-White) evaluations. Similarly, a positive (or negative) d_{Black} score indicated pro-Black (or anti-Black) evaluations.

4.2 Main analyses

Our primary analysis strategy consisted of the following: First, an independent analysis of variance (ANOVA) explored whether reward omission augmented negative affect independent of sample characteristics

(participants' race and/or political ideology). A main effect for reward omission exclusively would validate our mood induction protocol. Next, for the remaining outcome parameters corresponding to implicit ($dImplicit$) and explicit ($dWhite$, d_{Black}) racial evaluations, we ran three linear moderator regression models. Each model explored whether affective state (AFF) moderated the relationship between the two categorical predictors, participant race (RACE) and political ideology (POL), with the specific outcome parameter. The equation constructed to explain variance across each outcome parameter is shown in Equation 2 where d_k represents the scaled outcome variable ($d_{Implicit}/d_{White}/d_{Black}$). The intercept coefficient is denoted by $\beta 0$. The main effects of participant race and political ideology are represented by $\beta 1$ and $\beta 2$ respectively. $\beta 3$ illustrates the primary influence of induced affect (AFF). Two-way interaction effects between RACE and AFF, and between POL and AFF, as well as the three-way interaction between RACE, POL and AFF, are represented by $\beta 4$, $\beta 5$ and $\beta 6$ respectively, with ϵ accounting for model error. Our model investigated the primary influences of race and ideology on evaluation outcomes. It delved into the influence of affect, while exploring its moderating role between race and outcomes, ideology and outcomes, and race, ideology and outcomes. In addition to our regression models, we planned to run two-sample Welch's contrasts between frustrated participants and their non-frustrated (calm) counterparts across all combinations of race and ideology. Only contrasts which were statistically significant after false discovery rate corrections are reported, alongside bias-corrected Hedge's g effect sizes (Delacre et al., 2017).

$$d_k = \beta 0 + \beta 1_{\text{RACE}} + \beta 2_{\text{POL}} + \beta 3_{\text{AFF}} + \beta 4_{\text{RACE}\times\text{AFF}} + \beta 5_{\text{POL}\times\text{AFF}} + \beta 6_{\text{RACE}\times\text{POL}\times\text{AFF}} + \varepsilon \qquad (2)$$

4.3 Secondary analyses

In addition to regression modelling and planned contrasts, we explored whether participants' political leanings (liberal or conservative) correlated with support of particular policies. Specifically, we wanted to identify whether participants who self-classify as liberal (or conservative) were more likely to support egalitarian (or hierarchical) positions respectively, as earlier works suggest (Winegard et al., 2018). We supplemented our correlation tests with an exploratory factor analysis to identify any common factors underlying individuals' support for specific policies based on their professed ideologies. Finally, we report correlations between ideological position and responses along the Big Five personality dimensions of extroversion, neuroticism, openness, conscientiousness, and agreeableness (Rammstedt & John, 2007). Although none of our hypotheses were centered around personality differences, it was nevertheless decided to include these relationships for a more comprehensive insight into the interconnectedness of personality traits and political attitudes, as these are likely to be expressions of a common underlying factor (Verhulst, Eaves & Hatemi, 2011).

5 Results

5.1 Reward omission induces negative affect (manipulation check)

An independent subjects 3 x 2 x 2 ANOVA examined whether participant race (Whites, Blacks, Non-BWs), political ideology (liberal, conservative), and affective condition (frustrated, calm) interacted to account for variance in affect scores. No statistical evidence was found for two- or three-way interactions (all p's $>$ .15). A significant main effect for affective condition was detected, $F(1, 290) = 253.5$, $p < .001$, $\eta 2p = .47$, showing that reward omission had significantly induced negative affect across all racial and ideological groups. A post-hoc Welch's contrast confirmed that mean affect of the 169 participants who underwent reward omission, M [95 % CI] = -1.48 [-1.53 to -1.44], was significantly more negative than the mean affect of the 133 participants who did not undergo omission, M [95 % CI] = .05 [.03 to .06], $t(219.8) = 17.41$; $p < .001$: $g = 1.92$. Planned contrasts across conditions revealed a consistent pattern of greater negative affect for participants who underwent reward omission (all p's $< .001$, all g's > 1.41; see column 1, Figure 1). Descriptive summaries of affective scores, along with remaining outcome parameters, are detailed in Table 1.

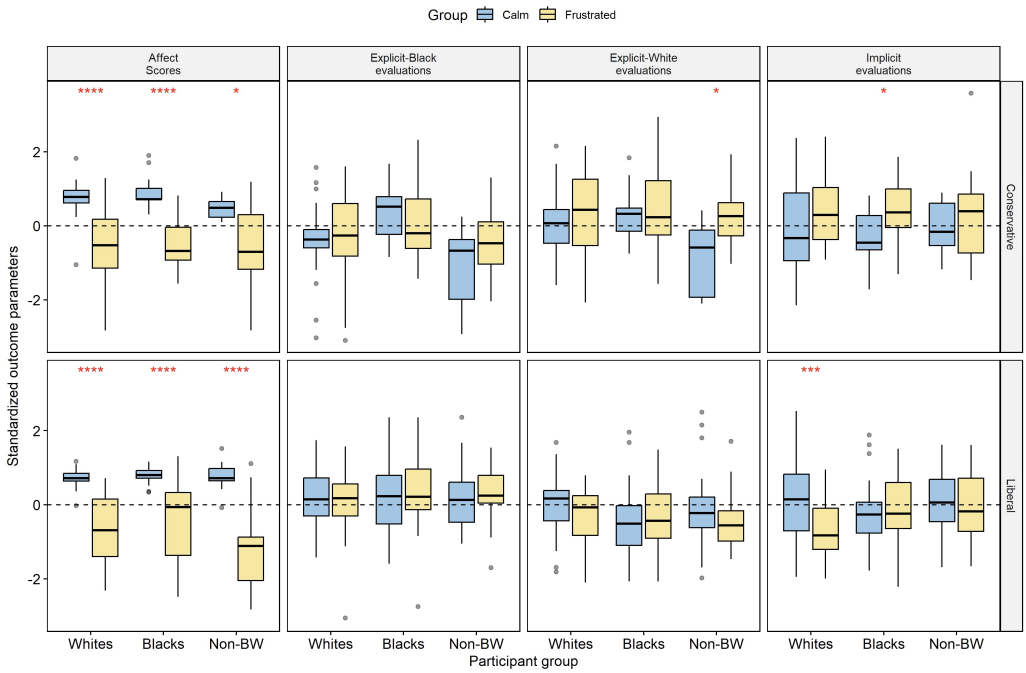

Figure 1: Boxplot summaries of four outcome parameters (columns) faceted by political ideology (rows) and participant race (x-axis). Standardized outcome parameters are represented along y-axes, with larger (smaller) values across columns 1, 2, 3 and 4 respectively indicating positive (negative) affect, explicit pro-Black (anti-Black) evaluations, explicit pro-White (anti-White) evaluations, and implicit pro-White/anti-Black (pro-Black/anti-White) evaluations respectively. Asterisks signify p-values following two-sided false discovery rate (fdr) corrected contrasts between frustrated and non-frustrated participants (* $=<$ .05; ** $=<$ .01; *** $=<$ .001).

Table 1: Mean (M) and standard deviation (SD) summaries of affective and evaluation outcome parameters.

Participant race	Political ideology	Mood induction	n	Affect scores M ± SD	Explicit: d_{Black} M ± SD	Explicit: d_{White} M ± SD	$d_{Implicit}$ M ± SD
Non-BW	Conservative	Non-frustrated	7	0.47 ± 0.30	-1.15 ± 1.25	-0.91 ± 1.07	-0.04 ± 0.79
Non-BW	Conservative	Frustrated	23	-0.63 ± 1.02	-0.44 ± 0.98	0.27 ± 0.75	0.18 ± 1.20
Non-BW	Liberal	Non-frustrated	22	0.77 ± 0.31	0.20 ± 0.89	-0.07 ± 1.10	0.14 ± 0.89
Non-BW	Liberal	Frustrated	15	-1.22 ± 1.14	0.28 ± 0.81	-0.46 ± 0.86	-0.04 ± 1.03
White	Conservative	Non-frustrated	34	0.76 ± 0.43	-0.35 ± 0.89	0.08 ± 0.92	-0.07 ± 1.13
White	Conservative	Frustrated	40	-0.46 ± 0.97	-0.25 ± 1.22	0.31 ± 1.16	0.34 ± 0.90
White	Liberal	Non-frustrated	33	0.73 ± 0.23	0.23 ± 0.73	0.02 ± 0.84	0.18 ± 1.13
White	Liberal	Frustrated	36	-0.59 ± 0.85	0.11 ± 0.82	-0.24 ± 0.72	-0.70 ± 0.75
Black	Conservative	Non-frustrated	13	0.90 ± 0.46	0.43 ± 0.70	0.32 ± 0.69	-0.29 ± 0.82
Black	Conservative	Frustrated	34	-0.51 ± 0.66	0.13 ± 1.08	0.44 ± 1.12	0.40 ± 0.81
Black	Liberal	Non-frustrated	24	0.81 ± 0.22	0.16 ± 0.96	-0.46 ± 0.98	-0.26 ± 0.96
Black	Liberal	Frustrated	21	-0.55 ± 1.10	0.27 ± 1.10	-0.35 ± 1.07	-0.11 ± 0.90

Note: Means (M) and standard deviations (SD) for the four outcome parameters estimated currently across different participant groups. Participants were categorized based on their race (Column 1), political ideology (Column 2), and mood induction condition (Column 3). Column 4 represents the sample size for each subgroup. Affect scores capture participants' emotional shifts, with negative scores indicating negative affective states (Column 5). Positive (or negative) scores for explicit evaluations of Black (Column 6) and White (Column 7) faces respectively indicate higher (or lower) pro-Black and pro-White evaluations. Across Column 8, positive (or negative) scores represent pro-White/anti-Black (or pro-Black/anti-White) evaluations.

5.2 Explicit evaluations of Black targets (main)

A regression model discerned the combined influence of participant race, political ideology, and affective condition on explicit evaluations of Black targets (d_{Black} scores). The model explained a statistically significant, though modest, proportion of the variance, with $R^2 = .099$, $F(11, 290) = 2.907$, $p < .002$, adj.

R^2 = .065. Main effects indicated that, relative to Non-BWs (the reference category), White (β = .81, p = .045) and Black (β = 1.58, p < .001) participants were more pro-Black. A significant main effect of political ideology revealed that liberals were more pro-Black than conservatives (β = 1.35, p < .002). A significant three-way interaction suggested non-frustrated Black liberals were significantly less pro-Black than the reference group, non-frustrated White conservatives (β = -1.62, p < .003). Other interactions and main effects did not achieve statistical significance at the conventional .05 level. Regression coefficients across models are summarized in Table 2. Planned contrasts between frustrated and non-frustrated participants did not yield significant differences (all p's > .2; see column 2, Figure 1).

5.3 Explicit evaluations of White targets (main)

A second regression model investigated the influence of participant race, political ideology, and affect on explicit evaluations of White targets (d_{White} scores). The model accounted for a statistically significant and modest portion of the variance, with R^2 = .11, F (11, 290) = 3.21, p < .001, adj. R^2 = .07. Main effects revealed that, compared to non-BWs (the reference group), both White (β = .99, p = .014) and Black (β = 1.23, p = .007) participants produced more pronounced pro-White evaluations. Frustrated participants, overall, displayed stronger pro-White evaluations compared to their non-frustrated counterparts (β = 1.18, p = .005). A main effect for ideology showcased liberals expressing reduced pro-White evaluations relative to conservatives (β = -1.57, p = .003). A significant three-way interaction indicated non-frustrated Black liberals were less pro-White than the reference group, non-frustrated White conservatives (β = -1.62, p = .003). Planned contrasts additionally revealed frustrated non-BW conservatives as significantly more pro-White relative to calm non-BW conservatives, t (7.9) = -2.72; p = 0.026: g = -1.24 (column 3, Figure 1). This effect was obscured in the regression model due to the selection of non-BW participants as the reference group.

5.4 Implicit evaluations of all targets (main)

The regression model designed to explain dImplicit scores accounted for a significant and modest proportion of the observed variance, with R^2 = .11, F (11, 290) = 3.25, p < .001, adj. R^2 = .08. Most main effects and interactions were not statistically significant, except for a significant three-way interaction between White participants, those identifying as liberal, and the induced affective state of frustration (β = -.82, p = .036). This interaction suggests frustrated White liberals exhibited more pronounced 'pro-Black/anti-White' performances compared to all other combinations of race, ideology, and affective condition. Planned contrasts between frustrated and non-frustrated participants revealed that frustrated White liberals were significantly more pro-Black/anti-White compared to non-frustrated White liberals, t (55) = 3.78; p < .001: g = .91. We also noted frustrated Black conservatives were significantly more pro-White/anti-Black than their non-frustrated counterparts, t (21.4) = -2.57; p = .018: g = -.83.

5.5 Political ideology and policy support (secondary)

We had previously asserted how, in the U.S., identifying as liberal correlates with an ideological commitment to achieving equality, while identifying as conservative corresponds with a preference for preserving status-based hierarchies (Kekes, 1997). To validate these claims across our current samples, we ran a series of correlations between participants' declared ideology, measured on an 11-point scale from *Strongly liberal* (1) to *Strongly conservative* (11), and their agreement with egalitarian and status-preserving policies (Figure 2). Agreement was gauged using 5-point scales, ranging from *Strongly Disagree* (1) to *Strongly Agree* (5). Positive (negative) correlation coefficients, indicated in Figure 2, reflect policy positions favored by conservatives (liberals). Among White participants (column 1, Figure 2), liberal identification was robustly and significantly associated with support for all egalitarian policies (-.65 < r's < -.37; all p's < .001). In contrast, conservative identification correlated with supporting all hierarchical policies exclusively (.25 < all r's < .62; all p's < .05).

For non-White respondents, policy preferences were less consistently tied with declared ideologies. Among Black participants (Figure 2, column 2), conservative identification predicted support for 2 out of 5 egalitarian positions: *The world would be better without any organized religion* (r = .35, p < .001) and *The government should redistribute wealth from people with more money to people with less* (r = .17, p > .05),

Table 2: Summaries of regression models, coefficients with 95 % confidence intervals (CI) and one-sample *t*-test statistics.

Predicted: $d_{Implicit}$ (implicit pro-White, anti-Black evaluations)				
Parameter	β	95% CI	t(290)	p
(Intercept)	-0.04	[-0.76, 0.67]	-0.12	0.906
RACE [Whites]	-0.03	[-0.82, 0.75]	-0.08	0.937
RACE [Blacks]	-0.24	[-1.13, 0.64]	-0.54	0.589
POL [Liberal]	0.19	[-0.63, 1.01]	0.45	0.653
AFF [Frustrated]	0.22	[-0.59, 1.04]	0.54	0.590
RACE [Whites] * AFF [Frustrated]	0.19	[-0.73, 1.12]	0.41	0.681
RACE [Blacks] * AFF [Frustrated]	0.46	[-0.56, 1.49]	0.89	0.375
POL [Liberal] * AFF [Frustrated]	-0.41	[-1.44, 0.63]	-0.78	0.437
RACE [Whites] * POL [Liberal] * AFF [Calm]	0.07	[-0.87, 1.01]	0.15	0.881
RACE [Blacks] * POL [Liberal] * AFF [Calm]	-0.16	[-1.21, 0.89]	-0.30	0.764
RACE [Whites] * POL [Liberal] * AFF [Frustrated]	-0.82	[-1.58, -0.05]	-2.11	0.036
RACE [Blacks] * POL [Liberal] * AFF [Frustrated]	-0.29	[-1.11, 0.53]	-0.70	0.486
Predicted: d_{Black} (explicit pro-Black evaluations)				
Parameter	β	95% CI	t(290)	p
(Intercept)	-1.15	[-1.87, -0.43]	-3.15	.002
RACE [Whites]	0.81	[0.02, 1.60]	2.01	.045
RACE [Blacks]	1.58	[0.69, 2.47]	3.49	$<$.001
POL [Liberal]	1.35	[0.53, 2.18]	3.23	.001
AFF [Frustrated]	0.71	[-0.11, 1.53]	1.70	.090
RACE [Whites] * AFF [Frustrated]	-0.61	[-1.55, 0.32]	-1.29	.196
RACE [Blacks] * AFF [Frustrated]	-1.01	[-2.04, 0.02]	-1.92	.055
POL [Liberal] * AFF [Frustrated]	-0.63	[-1.66, 0.41]	-1.18	.238
RACE [Whites] * POL [Liberal] * AFF [Calm]	-0.77	[-1.72, 0.17]	-1.61	.109
RACE [Blacks] * POL [Liberal] * AFF [Calm]	-1.62	[-2.67, -0.57]	-3.02	.003
RACE [Whites] * POL [Liberal] * AFF [Frustrated]	-0.37	[-1.14, 0.40]	-0.95	.345
RACE [Blacks] * POL [Liberal] * AFF [Frustrated]	-0.59	[-1.41, 0.23]	-1.41	.159
Predicted: d_{White} (explicit pro-White evaluations)				
Parameter	β	95% CI	t(290)	p
(Intercept)	-0.91	[-1.63, -0.19]	-2.50	.013
RACE [Whites]	0.99	[0.21, 1.78]	2.48	.014
RACE [Blacks]	1.23	[0.34, 2.12]	2.73	.007
POL [Liberal]	0.84	[0.02, 1.66]	2.02	.044
AFF [Frustrated]	1.18	[0.36, 2.00]	2.84	.005
RACE [Whites] * AFF [Frustrated]	-0.95	[-1.88, -0.02]	-2.01	.046
RACE [Blacks] * AFF [Frustrated]	-1.06	[-2.08, -0.03]	-2.04	.043
POL [Liberal] * AFF [Frustrated]	-1.57	[-2.60, -0.54]	-2.99	.003
RACE [Whites] * POL [Liberal] * AFF [Calm]	-0.90	[-1.84, 0.04]	-1.88	.061
RACE [Blacks] * POL [Liberal] * AFF [Calm]	-1.62	[-2.67, -0.57]	-3.05	.003
RACE [Whites] * POL [Liberal] * AFF [Frustrated]	0.17	[-0.59, 0.93]	0.44	.661
RACE [Blacks] * POL [Liberal] * AFF [Frustrated]	-0.07	[-0.89, 0.75]	-0.16	.874

Note: Results from regression models investigated the relationships between participant race (RACE), political ideology (POL), and affective state (AFF) on evaluation outcomes. Significant ($p < .05$) coefficients are highlighted.

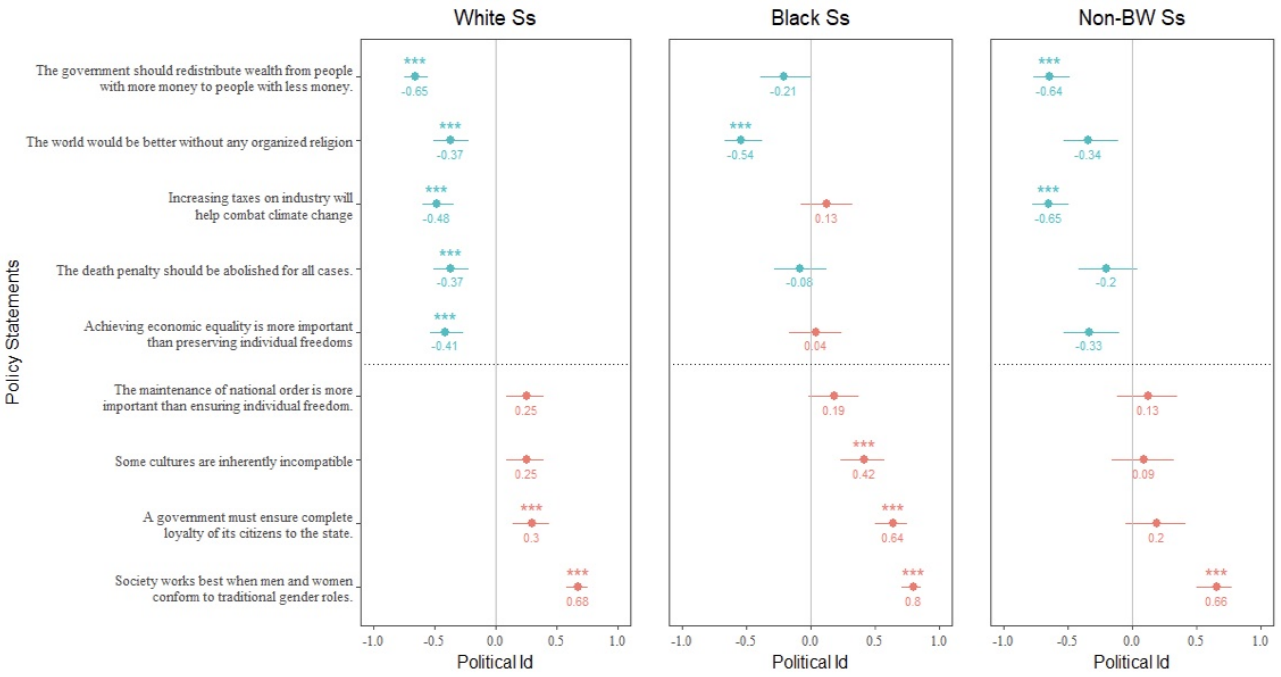

Figure 2: Point ranges depict Pearson coefficients along with their 95 % confidence intervals. Coefficient estimates are presented below points, with asterisks denoting statistically significant coefficients (* $p < .05$; ** $p < .01$; *** $p < .001$). Each coefficient symbolizes the correlation between self-reported political ideology (x-axes) and agreement with policy statements (y-axes) for White (left panel), Black (middle panel), and non-BW (right panel) samples. Negative (<0) or positive (>0) coefficients respectively denote associations between liberal or conservative ideologies and egalitarian (5/top) or hierarchical (4/bottom) policies. Egalitarian and hierarchical policies are separated by a dotted horizontal intercept.

with only the former reaching significance. Black conservatives agreed with all hierarchical positions similarly to White conservatives (all r's $> .2$), with 3 out of 4 associations being significant (p's $< .001$). Non-BW liberals (column 3) significantly agreed with 4 out of 5 egalitarian positions (all r's $> .34$, all p's $< .001$) with White liberals, except for the policy The death penalty should be abolished for all cases ($r = .16$, $p > .05$). Non-BW conservatives concurred with remaining conservative groups along only one hierarchical position, *Society works best when men and women conform to traditional gender roles* ($r = .64$, $p < .001$).

An exploratory factor analysis (EFA) investigated the underlying structure of the nine policy positions in relation to political ideology using principal components analysis with varimax rotation. The eigenvalues for the first three factors stood at 2.46, 1.88, and 1.03, while those for subsequent factors fell below 1. Adhering to the eigenvalues-greater-than-1 criterion (Kaiser, 1960), these three factors were retained. This accounted for 60 % of the dataset's total variance (Factor 1: 24 %, Factor 2: 23 %, and Factor 3: 13 %). The standardized factor loadings for each policy position uncovered thematically converging associations. The standardized loadings revealed Factor 1 was primarily associated with economic positions: *Increasing taxes on industry will help combat climate change* (loading = .74), *Achieving economic equality is more important than preserving individual freedoms* (.77), and *The government should redistribute wealth from people with more money to people with less money* (.78). Factor 2 was most strongly associated with social policy positions: *The maintenance of national order is more important than ensuring individual freedom* (.64), *Society works best when men and women conform to traditional gender roles* (.73), and *Some cultures are inherently incompatible* (.61). Finally, Factor 3 had the strongest association with *The world would be better without any organized religion* (0.83), implying a separate dimension related to religious attitudes.

5.6 Personality differences (secondary)

Personality trait scores were correlated with responses to the 11-point scale measuring political ideology, which have been summarized in Figure 3. Traits were uniquely and significantly associated with professed

ideologies. The traits of Openness (r = -.20, p < .001) and Neuroticism (r = -.43, p < .001) were significantly associated with being liberal. The traits of Agreeableness (r = .19, p < .001) and Conscientiousness (r = .29, p < .001) were significantly associated with being conservative. Among traits, Extroversion was positively associated with Agreeableness (r = .28, p < .001), Conscientiousness (r = .33, p < .001), and with Openness (r = .12, p = .033). Agreeableness correlated positively with Conscientiousness (r = .33, p < .001). Finally, Neuroticism was negatively associated with Extroversion (r = -.34, p < .001), Agreeableness (r = -.42, p < .001), and with Conscientiousness (r = -.45, p < .001).

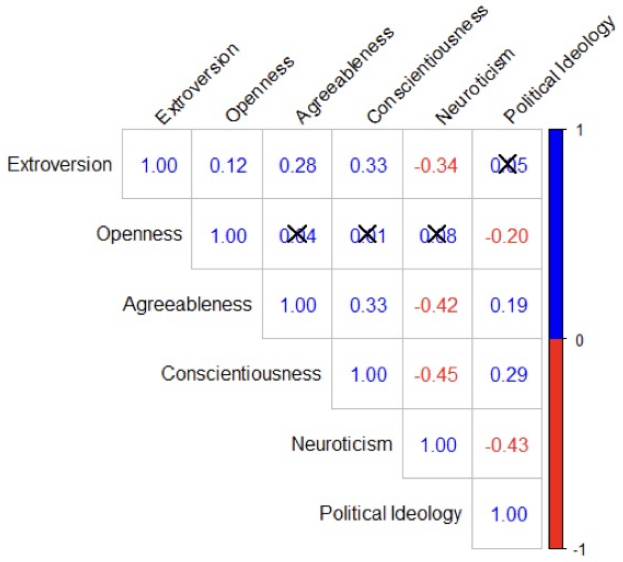

Figure 3: Coefficients following correlations between personality traits and political ideology. Crossed-out coefficients were not statistically significant (p's > .05). With respect to political ideology (last column), the personality traits of *Openness* (r = -.20) and *Neuroticism* (r = -.43) were significantly associated with being liberal. The traits of *Agreeableness* (r = .19) and *Conscientiousness* (r = .29) were significantly associated with identifying as conservative.

6 Discussion

The present work explored evaluations of White and Black targets, respectively representing socially advantaged (White) or disadvantaged (Black) groups in the United States, as a function of participant race, political ideology, and affective state. Negative affect was induced in approximately half our sample to explore whether implicit evaluations would be augmented, basing this decision on Dasgupta's (2013) claim that incidentally angering (White) participants 'magnifies' their otherwise latent biases. Planned contrasts found positive support for this latter claim across White liberals and Black conservatives, who were implicitly and respectively less pro-White and pro-Black when frustrated. Generalizing from Dasgupta's (2013) claims, one might argue that the two groups had already held negative biases towards their respective racial ingroups.

Outside of implicit measures, both White and Black cohorts produced relatively favorable evaluations of own-race faces, largely independent of political ideology or affective state. Explicit evaluations of other-race faces, on the other hand, were influenced by ideological position. Specifically, White and Black liberals were more pro-Black relative to all conservatives, whereas Black and Non-BW conservatives were more pro-White relative to all liberals. Explicit pro-Black trends across liberals and explicit pro-White trends across conservatives correspond with the notion that liberals and conservatives may be respectively motivated by egalitarian and status-preserving ideological epistemologies.

Correlations between ideology and policy positions suggest that, at least for White participants, self-identifying as liberal predicted support for egalitarian positions whereas self-identifying as conservative predicted support for status-preserving positions. On balance, the relationship between political ideology

and ideological epistemology was less consistent across non-White cohorts, who tended to converge on particular issues independent of their ideological epistemology unlike their White counterparts. For example, both Black liberals and Black conservatives, alongside White liberals, agreed that the death penalty should be abolished in all cases. Convergence on this issue among Blacks may have been motivated by awareness of racial disparities in capital sentencing practices (Union, 2022). Views on the death penalty were unrelated[1] to religious attitudes. On the other end, non-BW liberals agreed with all conservatives that some cultures are inherently incompatible, perhaps due to greater awareness of security threats posed by competing minority groups (Craig & Richeson, 2018).

While conjectural, these interpretations serve to underscore the variable predictive utility of ideological classifications, such as conservatism and liberalism, in predicting racial evaluations by different racial groups in the United States. The disparate life experiences that non-majority/non-advantaged groups face relative to majority/advantaged groups likely shape policy stances across the former over purely ideological differences (Jefferson, 2020). For example, Black liberals and conservatives in the present work converged on the necessity for greater income and wealth equality, a consensus likely driven by the advancement in social status it would facilitate for Blacks overall (Dawson, 1995). Concurrently, there can be areas of convergence between select groups. For example, both Black and White conservatives similarly prioritize "family values," encompassing traditional gender roles, loyalty and religion, rather than issues such as climate change (Philpot, Shaw & McGowen, 2009). A parallel outcome was observed currently, as all conservatives, regardless of race, showed a strong preference for the preservation of traditional gender roles. Another point of note is that White Americans, relative to various non-White Americans, tend towards individualistic values that understandably prioritize individual rights (Triandis & Gelfand, 2012). On the other hand, those who prioritize their own racial group, such as many Black Americans, tend towards championing positions that promotes their own race's welfare, even if doing so overrides personal interests (Shaw, Foster & Combs, 2019). Although religiosity was not a contributing factor to the outcomes reported currently (Footnote 1), differences in individualism were not considered when designing the study. Future replications can include relevant measures of individualism to probe for potential interactions with political ideology, group identity, and racial biases. Considering that differences in individualism have consistently aligned with racial distinctions for some time (Markus, Hazel & Kitayama, 1991), we do not anticipate that the conclusions drawn from the present investigation would be substantively altered. We conclude our discussion after addressing four limitations pertaining to our design.

First, because our inter-task interval between reward frustration and evaluation phases was quite brief ($<$1 minute), it is plausible that any 'frustration-amplified' effects detected were transitory. This assertion is supported by earlier works that showed negative moods induced within an experimental context tend to extinguish in under 10 minutes on average (Frost & Green, 1982). Future extensions should consider staggering intervals between reward omission and evaluation phases to track whether and when outcome parameters generated by frustrated and non-frustrated cohorts equalize. Similar to the procedures described in Amd and colleagues (2019), participants' racial evaluations could be collected along varying intervals over the course of several weeks through a smartphone application to track the rate at which frustration-induced biases (presumably) extinguish.

A second concern could be raised regarding our use of a composite outcome parameter to reflect affect. Recall that we combined normalized scores from two negative and two positive moods (anger, frustration, happiness, optimism) to indicate a shift in affective state, whereas Dasgupta et al. (2009) presented single mood estimates (e.g., of anger). The decision to deploy the former was motivated by three factors. First, normalizing scores before and after reward frustration captures affective state (mood) shifts, which cannot be captured by a single post-intervention mood score (Amd, 2023). Second, assessing multiple

[1] Sabriseilabi and colleagues (2022) claimed religiosity uniquely interacts with race to predict support for the death penalty. In the present study, all participants responded to the question *How religious are you?* on an 11-point Likert scale anchored by Not at all (1) and Very religious (11) prior to the main study. We replicated Sabriseilabi's findings, in that Black cohorts (Mean [95 % CI] = 5.4 [5.2, 5.6]) were collectively more religious than White (3.6 [3.4, 3.7]) and non-BW (3.5 [3.2, 3.7]) cohorts. We also noted that Black conservatives (7.4 [7.3, 7.6]) and White liberals (2.1 [2.0, 2.3]) were respectively the most and least religious of all groups sampled. Because both groups professed similar levels of support for abolishing the death penalty, differences in religiosity could not explain the converging opinions.

moods enabled a more nuanced differentiation of participants' overall affective state compared to a single mood score. For example, our metric could quantitatively distinguish between a participant experiencing high anger and low optimism from one reporting high anger and high optimism, as well as identify whether these states changed over time. Finally, supplementary analyses revealed that ratings corresponding to frustration were positively associated with anger (r's $>$ .67) and negatively associated with happiness (r's $<$ -.47) and optimism (r's $<$ -.35) for frustrated and non-frustrated participants independently (all p's $<$ .001). In combining four normalized moods into a single 'affect score' metric, we effectively captured an individual's overall affective state while controlling for pre-experimental variance, rendering such metrics more informative than singular mood estimates (Amd, 2023; Amd, 2022a,b).

Next, it is worth addressing whether group-level differences in ethnocentrism, that is, the extent to which individuals identify with their ethnicity, contributed to the current outcomes, seeing how Black Americans are significantly more ethnocentric than White Americans (Cox & Tamir, 2022). In response, recall that all participants in the present study responded to the survey item *How strongly do you identify with your ethnicity?* with values ranging from 1 (*Not strongly at all*) to 10 (*Very strongly*), with larger values implying greater ethnocentrism. One could argue that group differences in ethnocentrism influenced own-race favoritism differently. Indeed, supplementary analyses indicated Black participants (M = 9.11; SE = 0.13) were significantly more ethnocentric than White participants (M = 7.18; SE = 0.22). Contrasts within racial groups along ideology revealed that Black conservatives (M = 9.13; SE = 0.18) and Black liberals (M = 9.09; SE = 0.2) were similarly ethnocentric, with the former appearing marginally higher. Concurrently, White liberals (M = 6.09; SE = 0.36) were the least ethnocentric of all groups sampled, and significantly less so than White conservatives (M = 8.19; SE = 0.21). White liberals and Black conservatives were respectively the least and most ethnocentric of all groups sampled, yet both groups generated comparable implicit evaluation trends (reduced own-race favoritism) when frustrated. Comparable performances were not observed across White conservatives and Black liberals, whose levels of ethnocentrism did not vary with becoming frustrated. These performances highlight participants' ideological epistemologies as central to the present outcomes over differences in declared ethnocentrism. Future work could try to control for participants' ethnocentrism beforehand to more precisely estimate influences of ideology, though doing so would yield a contrived sample. Black Americans are collectively more likely than White Americans to signal valuation of their ethnic identity over political ideology (Abramowitz, 2010), meaning any precision gained from artificially selecting for Black participants with low(er) levels of ethnocentrism could be offset by a reduction in external validity.

Finally, one might argue that frustrated White liberals exhibited a negative bias against White exemplars because they incorrectly assumed the experimenter withholding rewards was White. In response, note that the attenuation of pro-White evaluations was specific to frustrated White *liberals* — no other group produced statistical evidence for reduced pro-White/anti-Black evaluations across implicit measures when frustrated. In fact, frustrated Black conservatives demonstrated the opposite pattern, becoming implicitly *more* pro-White/anti-Black relative to non-frustrated Black conservatives. So, either White liberals were unique in assuming the experimenter was White as a consequence of feeling frustrated, or all groups assumed the experimenter was White but only White liberals expressed an implicit anti-White trend. Either case supports the current claim that White liberals hold latent biases against their racial in-group that had become behaviorally 'amplified' through arbitrary reward omissions.

7 Conclusion

The main contribution of the current study was demonstrating how arbitrary reward omissions, a recurring feature of daily life, interacts with socially conditioned epistemologies to influence racial attitudes. This observation is noteworthy because frustration induced through reward omission, unlike autobiographical recall (Dasgupta et al., 2009), does not presuppose the subjective construction of an attribution source ('someone to blame') to effectively induce negative affect (Amsel, 1992). In spite of *not* specifying clear attribution sources, reward frustration reduced implicit own-race favoritism across White liberals and Black conservatives. Drawing from Dasgupta's (2013) argument that negative affect intensifies underlying biases, our findings

would suggest White liberals and Black conservatives hold negative perceptions of their racial in-groups, as would be predicted by their contrasting ideological epistemologies. Although caution is warranted whenever extrapolating from a single study, the suggestion that liberals and conservatives respectively respond in accordance with egalitarian and status-preserving ideologies coalesce with claims made elsewhere (Burnham, 2014; Kekes, 1997). By employing participant race and political ideology as predictor variables, we leaned on their historically consistent definitions (Burnham, 2014). Even amidst changing sociopolitical dynamics, the relationship between race and ideology remains fairly stable (Rigeur, 2016). Future extensions can aim to (dis)confirm our claims while noting whether arbitrary reward omissions generalize to influence real-life interactions between racially and/or ideologically distinct groups.

Data availability and Ethics Statement

Data, analysis scripts and recorded task demonstrations are available online at `https://osf.io/w6rnz/`. A preprint of the current manuscript had been initially registered on October 9, 2020, at `https://www.preprints.org/manuscript/202010.0218/v2` (Amd, 2020). All reported procedures were approved by the University of the South Pacific IRB. The approval statement is available in the online file.

Author note

The current work was funded by an internal research stipend from USP to the first author and was approved by the local IRB. An earlier version of the current manuscript had been registered as a preprint at `https://europepmc.org/article/ppr/ppr225105`. There are no conflicts of interest to declare. Correspondence concerning this article should be addressed to Micah Amd, University of the South Pacific, Suva, Fiji. E-mail: micah.amd@proton.me

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