

**WHITE SUPREMACIST BELIEFS  
PREDICT DISCRIMINATION BUT  
NOT IMPLICIT BIAS TOWARD  
PERCEIVED ARAB/MIDDLE  
EASTERN, MUSLIM, MEN**

by

Giuditta Scalco

A thesis submitted to the Faculty of the University of Delaware in partial fulfillment of the requirements for the degree of Master of Science in Psychological and Brain Sciences

Summer 2024

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## **ACKNOWLEDGMENTS**

I would like to thank Dr. Jennifer T. Kubota and Dr. Jasmin Cloutier for their guidance, advice, and thoughts on this sensitive research topic. I am deeply grateful to my parents, siblings, and partner for their constant support, which has allowed me to explore different perspectives and thought processes on this topic. Lastly, I would also like to express my appreciation to the entire IFSN lab for their invaluable feedback and assistance throughout this project.

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## **ABSTRACT**

In recent decades, prejudices against Arab/Middle Eastern (AME) Muslim individuals have risen alongside surging white supremacist hate speech and violence. Perpetrators often subscribe to white supremacist ideology, which overtly supports hate against AME Muslim individuals and attracts followers worldwide. However, research exploring biases against AME Muslim individuals remains limited, leaving gaps in understanding these prejudices and the potential role of white supremacist beliefs. In a pre-registered study involving White non-Hispanic Americans varying in white supremacist beliefs, we examined if these beliefs influenced spontaneous evaluations and hiring bias towards perceived AME Muslim and non-Muslim White men. Results showed negative spontaneous evaluations of perceived AME compared to White men, regardless of white supremacist beliefs. However, those endorsing such beliefs exhibited more explicit hiring biases against AME men, even after accounting for spontaneous evaluations. Thus, while white supremacist beliefs may not heighten implicit biases, they predict explicit biases against perceived AME Muslim individuals.

## **Chapter 1**

### **INTRODUCTION**

Concern has steadily grown over the global rise of white supremacy (Beirich, 2014; Geary et al., 2020; Hafez, 2014; Institute for Economics and Peace, 2019; Jones, 2018). White supremacy (WS) is a multifaceted ideology based on the belief that white people, particularly straight, cis men who are Christian, are superior (Miller-Idriss, 2022). It is characterized by a shared commitment to upholding social, political, and economic dominance of white people, protecting the "white race" from "white genocide", and creating a future of racial exclusivity with non-white people either exterminated, segregated, or subjugated (Ferber, 1998; Miller-Idriss, 2022; Simi, 2010; Simi & Futrell, 2015). Often synonymous with far-right extremism, the WS movement encompasses factions promoting anti-government, racist, anti-Semitic, anti-Muslim, and anti-immigrant ideologies. It represents one of the oldest and deadliest movements in the United States (U.S.) and comprises several subgroups, including white supremacists, white nationalists, and neo-Nazis (Simi & Bubolz, 2016). Historically, WS discrimination targeted several groups, including Black and Jewish communities; however, the growth in immigration and asylum seekers from predominantly Islamic countries has led to an increase in white supremacist violence and rhetoric targeted toward Muslim individuals (American Civil Liberties Union, 2023; Obaidi et al., 2022).

## **1.1 Rise of Anti-Muslim Sentiment**

In recent decades, explicit anti-Muslim sentiment and discrimination have risen globally (Razack, 2022). Explicit prejudice and discrimination towards Muslim individuals have increased in both Europe and the U.S. (Pew Research Center, 2017). The observed rise in prejudice against Muslim individuals has been in part attributed ostensibly to recent immigration from primarily Islamic and Arab/Middle Eastern countries. With the rise in immigration, dystopian conspiracy theories have spread and are amplified by WS rhetoric (e.g., “eurabia” in Europe; the “great replacement theory” and “white genocide” in North America). For instance, “eurabia” alleges that Muslim individuals are intentionally working to Islamize and Arabize Europe through immigration and high birth rates (Miller-Idriss, 2022), resembling the “great replacement theory” that states that co-conspirators are attempting to replace white citizens with non-white citizens and immigrants. Crucially, anti-Muslim sentiment is prevalent in the U.S. in general and is amplified within white supremacy movements (Miller-Idriss, 2022; Razack, 2022; Southern Poverty Law Center, 2017).

## **1.2 Gaps in Psychological Research**

Despite the prevalence of anti-Muslim sentiment, there has been limited psychological investigations of implicit bias and discrimination towards Muslim individuals or those perceived as such. Moreover, the influence of white supremacy ideologies on these biases remains unexplored. This represents a significant gap in the literature given the global surge in endorsement of white supremacist beliefs that is often associated with hate and violence towards Muslim individuals along with other non-White and non-Christian groups. It is, therefore, imperative to investigate whether, or to what extent, implicit biases contribute to subsequent discrimination

against Muslim individuals (Axt, 2018) and to what extent white supremacist ideologies shape these processes. In light of the widespread acceptance of anti-Muslim sentiment in Western societies (Hafez, 2014), it is also crucial to consider explicit discrimination toward Muslim individuals, particularly in the U.S., where they are often perceived as the “racial other” based on ethno-racial connotations (Perry et al., 2024; Razack, 2022).

### **1.3 Aim of the Present Study**

The present pre-registered study sought to address these novel questions with a focus on implicit bias and discrimination towards individuals perceived to be Arab/Middle Eastern and Muslim by White non-Hispanic perceivers who vary in their endorsement of white supremacy. Implicit associations are evaluations or stereotypes about groups often assessed with speeded reaction time measures that do not require self-reflection or deliberation (Hahn et al., 2014; Nosek et al., 2011). Like other types of memory/evaluative associations, implicit evaluations are, in part, acquired through repeated paired associations with a group (e.g., via social networks or culture (Charlesworth & Banaji, 2019; Payne et al., 2017; Vuletic & Payne, 2019)). Although implicit bias has been suggested to predict discrimination (Frieze et al., 2008; Greenwald et al., 2009; Strack et al., 2006) this assertion has received criticism based on indications that the strength of the association between implicit bias and discrimination is perhaps weaker than previously thought (Oswald et al., 2013). Discrimination is defined as an explicit action (Welte et al., in press), and assessed across domains, for example legal, medical, educational, or organizational. Discrimination includes complex decisions, such as hiring, as well as explicit preferences (e.g., personal liking).

#### **1.4 Relationship Between Implicit Bias and Explicit Discrimination**

Existing evidence suggests that among the general population, individuals commonly hold negative implicit biases towards perceived Arab/Middle Eastern Muslim individuals but express minimal explicit biases against them (Agerström & Rooth, 2009; Park et al., 2007). This low correspondence between implicit and explicit bias may result from social desirability when individuals perform self-reflective judgements (Axt, 2018; Kubota, 2024). Similar discrepancies between implicit and explicit measures have been observed in response to socially sensitive topics, such as race-based prejudice (Fazio & Olson, 2003) and anti-immigrant attitudes (Arendt et al., 2015; Matthes & Schmuck, 2017). However, in contrast to the general population, individuals who endorse white supremacy may be less motivated to suppress spontaneous negative biases and more comfortable expressing negative explicit thoughts and feelings about others who are perceived to be Arab/Middle Eastern Muslim.

#### **1.5 Impact of White Supremacist Beliefs**

White supremacist beliefs are intertwined with various notions of ingroup favoritism, outgroup derogation, and perceived threat. Individuals generally derive self-worth from their ingroup, fostering positive attitudes and treatment. However, ingroup favoritism can also lead to outgroup derogation or discrimination (Brewer, 1979; Tajfel et al., 1971; Tajfel & Turner, 1979) when conflict arises, specifically when there is a threat to the ingroup's status (Stephan & Stephan, 2000), which can be factual (Jetten et al., 2002) or perceived (Branscombe et al., 1999). For white supremacists, white people are an ingroup and the perceived threat stoked by great replacement theory (or similar theories) is sufficient to potentially amplify outgroup

derogation or discrimination (Webber & Kruglanski, 2018). Thus, individuals who endorse white supremacist beliefs, may display strong implicit anti-Arab/Middle Eastern Muslim sentiment, but also, unlike those who do not endorse white supremacy, explicitly discriminate against perceived Arab/Middle Eastern Muslim individuals.

## **1.6 Research Questions**

The present pre-registered study sought to investigate how the endorsement of white supremacist beliefs shapes both spontaneous evaluations and explicit discrimination towards individuals perceived to be Arab/Middle Eastern, Muslim, compared to individuals perceived to be White and non-Muslim. Based on the limited existing literature, we pre-registered several confirmatory predictions. We expected that U.S. White perceivers would display more positive spontaneous evaluations of perceived White non-Muslim individuals compared to Arab/Middle Eastern Muslim individuals and that increased endorsement of white supremacist beliefs would exacerbate positive, spontaneous evaluations toward perceived White, non-Muslim individuals compared to perceived Arab/Middle Eastern, Muslim individuals. Furthermore, we anticipated that the endorsement of white supremacist beliefs would decrease hiring referrals of perceived Arab/Middle Eastern Muslim individuals compared to perceived White, non-Muslim individuals. Additionally, we examined the relationship between implicit bias and explicit discrimination as a function of target group membership (confirmatory) and the participant's white supremacist beliefs (exploratory).

## Chapter 2

### STIMULI CURATION

#### 2.1 Stimuli Curation Round 1: Perception of Stimuli Ethnorace

In the first round of stimuli curation, we examined whether most people would perceive the target depicted as being either Arab/Middle Eastern or White. Secondly, we assessed whether most people would perceive the target image as being Muslim or non-Muslim. The term perceived ethnorace will denote the racial and ethnic background of our two groups of interest: Arab/Middle Eastern individuals and White individuals.

##### 2.1.1 Participants

Seventy-five United States (U.S.)-based Amazon TurkPrime (Hauser et al., 2022; Litman et al., 2017) participants provided ratings on the quality of the image, whether most people would perceive the target to (1) be Arab/Middle Eastern, (2) White, and (3) Muslim (asked as unipolar scales, see Table 1). Participants' data were excluded if they did not complete the study ( $n = 2$ ). Participants were also excluded if they did not pass 3/4 of the attention checks ( $n = 1$ ), where they had to indicate what number was printed on a novel face that was not included in analyses of these data. After exclusions ( $n$  total exclusions = 3), pilot round 1 had a final sample size of 72 participants (32 women, 39 men, one non-binary) between the ages of 18 and 60 years ( $M_{Age} = 37.52$  years,  $SD_{Age} = 9.26$  years). Participants provided informed consent in

accordance with the University of Delaware's Independent Review Board (IRB) guidelines.

### 2.1.2 Procedure

Participants were instructed to rate 124 images on four dimensions using a 7-point Likert scale (see Table 2.1 for all dimensions). Participants rated all four dimensions for each face before proceeding to the next face, with unlimited time to respond. Faces were presented in random order to participants and all dimensions were presented in random order for each face.

Table 2.1 Dimensions Rated for Stimuli Curation Round 1

Dimension	Likert Scale Responses
How would most people rate the quality of this photo?	1 = "Extremely Bad" to 7 = "Extremely Good"
Would most people perceive this person to be Muslim?	1 = "Extremely Unlikely" to 7 = "Extremely Likely"
Would most people perceive this person to be Arab/Middle Eastern?	1 = "Extremely Unlikely" to 7 = "Extremely Likely"
Would most people perceive this person to be White?	1 = "Extremely Unlikely" to 7 = "Extremely Likely"

### 2.1.3 Results

Analyses for stimuli curation round 1 examined averaged responses across participants for each photo on the four rated dimensions, with responses ranging from 1 to 7. Cut-off scores were used to determine whether the image met the criteria for the next stimuli curation round. Images were excluded if rated below 3 ( $n = 0$ ) for image quality and not rated above 4.5 within the self-identified ethnracial category (i.e., Arab/Middle Eastern, White,  $n = 9$ ). Additionally, photos of Arab/Middle Eastern

stimuli not rated above 4.5 on being perceived as Muslim were excluded ( $n = 23$ ). All photos of White stimuli were rated below 3 (specifically 2.9) on being perceived as Muslim. To be included in the next stimuli curation round, at least 80% of raters had to have agreed on the face's ethnorace and religious affiliation (i.e., Arab/Middle Eastern Muslim, White non-Muslim). Following round 1, 32 out of 124 images were excluded from stimuli curation round 2 piloting.

## **2.2 Piloting Round 2: Rating of Stimuli on Subjective Traits, Expression, and Demographics**

In the second round of stimuli curation, we assessed photos on subjective traits, expressions, and demographics, including trustworthiness, dominance, attractiveness, emotional valence, and age.

### **2.2.1 Participants**

Seventy-five U.S.-based Amazon TurkPrime (Hauser et al., 2022; Litman et al., 2017) provided ratings on perceived age, perceived emotional expression, and subjective dimensions, including trustworthiness, dominance, and attractiveness. Participants' data were excluded if they did not fully complete the study ( $n = 6$ ) and did not pass 3/4 of the attention checks ( $n = 1$ ). After exclusions ( $n$  total exclusions = 7), stimuli curation round 2 had a final sample size of 68 participants (28 women, 40 men) between the ages of 18 and 60 years ( $M_{Age} = 36.72$  years,  $SD_{Age} = 8.36$  years). Participants provided informed consent in accordance with the University of Delaware's Independent Review Board (IRB) guidelines

### 2.2.2 Procedure

Participants were instructed to rate 92 images on five dimensions using a 7-point Likert scale (see Table 2.2 for all dimensions). Participants rated all five dimensions for the target image before proceeding to the next image, with unlimited time to respond. Faces were presented in random order to participants and all dimensions were presented in random order for each face.

Table 2.2 Dimensions Rated for Stimuli Curation Round 2

Dimension	Likert Scale Response
How trustworthy does this person appear to be?	1 = “Extremely untrustworthy” to 7 = “Extremely trustworthy”
How attractive does this person appear to be?	1 = “Extremely unattractive” to 7 = “Extremely attractive”
How dominant does this person appear to be?	1 = “Not at all dominant” to 7 = “Extremely dominant”
How would most people perceive this person's emotional valence?	1 = “Extremely negative”, 4 = “neutral”, to 7 = “Extremely positive”
How old does this person appear to be?	1 = “18-25 years old”, 2 = “26-35 years old”, 3 = “36-45 years old”, 4 = “46-55 years old”, 5 = “56-65 years old”, 6 = “66-75 years old”, 7 = “76+ years old”

### 2.2.3 Results

Analyses for stimuli curation round 2 examined the mean and standard deviation comparisons between perceived Arab/Middle Eastern and White men on the five rated dimensions (raw data available on OSF at <https://osf.io/ktv5r/>) to equate the images. Using the ratings from stimuli curation round 2, 60 faces (30 per condition) were selected as primes for the Evaluative Priming Task (Fazio et al., 1995). As we

did not want these stimuli to differ on any ratings other than perceived ethnorace (i.e., Arab/Middle Eastern, White) these stimuli were equated on perceived trustworthiness, dominance, attractiveness, emotional expression, and age (see Table 2.3 for results) via two-sample t-tests for each rated dimension as a function of ethnorace. Data were analyzed in R, using the stats package (R Core Team, 2023)

Table 2.3 Stimuli Curation Equating for Final Face Database of 60 Images

Dimension	Mean (SD)		<i>t</i> -value	<i>df</i>	<i>p</i> -value	95% CI
	<i>White</i> ( <i>n</i> =30)	<i>AME</i> ( <i>n</i> =30)				
Attractiveness	3.62 (.127)	3.51 (.096)	-0.981	57.758	.331	[-0.346, 0.118]
Dominance	3.92 (.161)	4.11 (.087)	1.137	57.982	.260	[-0.149, 0.541]
Trustworthiness	3.86 (.121)	3.84 (.092)	-0.136	56.333	.892	[-0.308, 0.238]
Emotional Valence	4.15 (.140)	3.96 (.100)	-1.372	57.898	.175	[-0.466, 0.087]
Age	2.90 (.105)	2.70 (.088)	-0.937	46.774	.354	[-0.616, 0.225]

*AME = Arab/Middle Eastern*

## Chapter 3

### EXPERIMENTAL PROCEDURES

#### 3.1 Participants

Three hundred and forty five U.S.-based participants were recruited and pre-screened from Amazon Mechanical Turk using TurkPrime (Hauser et al., 2022; Litman et al., 2017) ( $n = 154$ ), Prolific Academic (Prolific Academic, 2023) ( $n = 59$ ), and from the University of Delaware's PSYC100 SONA participant pool ( $n = 132$ ). In compliance with our pre-registration, participants were excluded for incomplete datasets ( $n = 6$ ), average accuracy rates below chance (i.e., 57% accuracy;  $n = 30$ ), not passing 3/4 of the attention checks (i.e., 75% accuracy;  $n = 26$ ), and for not self-identifying as White in the post-task questionnaire ( $n = 3$ ). Therefore, our final sample consisted of 280 participants (156 women, 119 men, five non-binary) between the ages of 18 and 60 years ( $M_{Age} = 32.20$  years,  $SD_{Age} = 12.97$  years).

Participants initially completed a pre-screen survey, determining their eligibility for the study and their levels of endorsement of white supremacist ideologies, using the white nationalism subscale from the Toxic White Identity (TWI) questionnaire (Harris et al., 2022; Reyna et al., 2022). To ensure variance in the sample, at least one-third of participants need to have an average score above 3.5 out of 7 on the white nationalism subscale, indicating some level of endorsement of white supremacist beliefs or at least a willingness to not outright disagree with them. Additionally, participants were pre-screened to ensure that they had lived in the U.S. for at least five years, to ensure baseline exposure to U.S. racial stereotypes, were

proficient in English, and self-identified as non-Hispanic and White. To increase representativeness of the sample, we used a stratified random sampling method via TurkPrime and Prolific based on the previously mentioned criteria. Eligible participants were invited to our main experiment and provided informed consent in accordance with the University of Delaware's Independent Review Board (IRB) guidelines. Participants recruited from SONA were compensated at a rate of 1 study credit, and participants recruited from MTurk were compensated at a rate of \$8 per hour for participation.

At the end of the experiment participants completed the full TWI questionnaire (Harris et al., 2022; Reyna et al., 2022) that included more questionnaires than just the white nationalism subscale used for pre-screening (for a full description of all the post-task questionnaires see Supplementary Materials S3.1). For analysis purposes, post-task white supremacy scores from the TWI scale were utilized as they were collected concurrently with the main experimental tasks, unlike the pre-screen questionnaire that was administered during a separate, prior session. The correlation between pre-screen and post-task endorsement of white supremacy scores was  $r = .872, p < .001$ . In our final sample, 34% of the participants (95 of the 280;  $M_{Age} = 33.45$  years,  $SD_{Age} = 12.71$  years) had some endorsement of white supremacist ideologies or at least had the willingness to explicitly report them. The distribution of scores on the endorsement of white supremacy ranged from 0 to 6.5 ( $M = 2.64, SD = 1.45$ ).

### **3.2 White Supremacy Endorsement Questionnaire**

To measure endorsement of white supremacist ideologies, we used the white nationalism sub-scale from the TWI questionnaire (Harris et al., 2022; Reyna et al., 2022) ( $\alpha = .960$ ). This sub-scale comprises 13-items that describes worldviews that

align with supremacist ideologies (e.g., “*Violence is a regrettable but understandable reaction to demographic changes in America*”; “*Whites in the United States are being replaced by the influx of other racial/ethnic groups*”). Participants were asked to indicate their level of agreement or disagreement with each statement on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Additional exploratory individual difference measures were collected for future research (i.e., participant religious affiliation, importance given to religion, political identity, and various forms of prejudice). These measures are listed in appendix C.1 for interested readers.

### **3.3 Sample Size Rationale**

We conducted an *a priori* power analysis as part of the pre-registration (<https://osf.io/ktv5r/>) of this study using the PANGEA package (v0.2), publicly available at <https://jakewestfall.shinyapps.io/pangea/> (Westfall, 2015). As this is the first study, that we know of, to examine the effect of how the endorsement of white supremacist beliefs and perceived ethnorace (Arab/Middle Eastern, White) impacts evaluative priming, we used the default variance parameters in PANGEA to estimate power for a 2 (prime ethnorace: Arab/Middle Eastern, White) x 2 (valence: positive, negative) x white supremacist ideologies (7-point scale) mixed factorial design consisting of 90 analyzable trials per condition. Based on this analysis, we determined that 280 participants would allow us to detect a significant prime ethnorace x valence x white supremacist ideologies interaction at an effect size of  $d=.15$ ,  $1-\beta=.821$ .

### **3.4 Open Science**

This investigation was pre-registered at <https://osf.io/ktv5r/>. All data and materials are publicly available at <https://osf.io/ktv5r/files/osfstorage>. All analyses were conducted in R, version 4.0.461, using the lme4 package for mixed-effects linear regressions with lmerTest (Kuznetsova et al., 2017). All research procedures were approved by the IRB at the University of Delaware and complied with APA ethical standards.

### **3.5 Stimuli**

#### **3.5.1 Face Stimuli**

Thirty perceived Arab/Middle Eastern and 30 perceived White faces were used in the evaluative priming and hiring referral tasks described below. The photo primes consisted of images of perceived neutral male targets collected from social media websites. These images were piloted on Amazon Mturk using TurkPrime across two rounds of piloting using unique samples. Initially, the images were rated on general perception of the targets as Arab/Middle Eastern, White, and Muslim. For inclusion, at least 80% of raters had to agree on the face's perceived ethnicity (i.e., Arab/Middle Eastern Muslim, White non-Muslim). The images were then equated to be average on perceived age, perceived trustworthiness, dominance, and attractiveness, and emotional expression.

#### **3.5.2 Lexical Stimuli**

Five words of each valence (positive, negative) were used in the experimental trials for the evaluative priming task. The words used in the Evaluative Priming Task (Fazio et al., 1995; Gawronski et al., 2010; Mattan et al., 2019) were the same as those

used in previous experiments (Mattan et al., 2019) (i.e., “cheer”, “happy”, “gentle”, “sunrise”, “laughter”, “grief”, “death”, “poison”, “tragedy”, and “sickness”).

However, for the initial practice trials where participants categorized words without primes, a different set of words were used consistent with previous research (Gawronski et al., 2010) (i.e., “pleasure”, “honesty”, “summer”, “paradise”, “freedom”, “poison”, “bomb”, “vomit”, “cockroach”, and “disaster”).

### **3.6 Evaluative Priming Task**

The evaluative priming task (EPT) is a commonly used task to examine the implicit association between concepts and valence (Fazio et al., 1995; Gawronski et al., 2010; Mattan et al., 2019). Participants were instructed to categorize target words as positive or negative as quickly and accurately as possible, ignoring the face prime (e.g., perceived Arab/Middle Eastern faces or perceived White faces, see Figure 1a). Images were meant to prime participants to activate associated evaluative biases (positive or negative). Faster response times for primes preceding positive (vs. negative) words is thought to reflect a positive evaluative bias, and faster response times for primes preceding negative (vs. positive) is thought to reflect a negative evaluative bias.

To ensure familiarity with the EPT, participants completed ten initial practice trials, where they categorized only words into their respective categories (positive, negative). The instruction page informed participants that they would either press the “M” key for positive and “N” key for negative, or vice-versa (e.g., “M” for negative, and “N” for positive), using the index and middle finger of their dominant hand. Practice trials began with a central black fixation cross on a white background. At the vertical midpoint on the far left and far right side of the screen the words “negative”

and “positive” were respectively presented. After 500-ms, one of the practice words replaced the central fixation cross, and the trial terminated after the participant’s response or after 1,500-ms, whichever came first. A 150-ms pause preceded all subsequent trials.

During practice trials, participants received feedback for late or incorrect responses with a 200-ms “INCORRECT” error message, presented centrally on the screen. The set of words used within the practice trials were not used within the full experiment. After the initial practice trials for the valanced words, participants were informed that a photo of a male prime would be briefly presented before categorizing the target word in the main experimental trials. Participants were instructed to ignore the prime and only categorize the words. Before the start of the experimental trials, participants completed eight additional practice trials with silhouette images presented before the words for 300-ms. The timing of these practice trials mirrored the word presentation practice trials with the addition of the silhouette images presented before the words for 300-ms.

After the practice trials, the main block of experimental trials began without a pause, consisting of 180 trials. Experimental trials began with a central black fixation cross on a white background, with the words “negative” and “positive” on each side. After 500-ms, the fixation was replaced by a face prime (i.e., perceived Arab/Middle Eastern or White) for a 300-ms duration. After the prime disappeared a target word appeared in the center of the screen. Each trial terminated after either the participant's response or 1,500-ms, whichever came first. Failure to respond after the allocated time was recorded as an incorrect response. There was a 150-ms pause between trials.

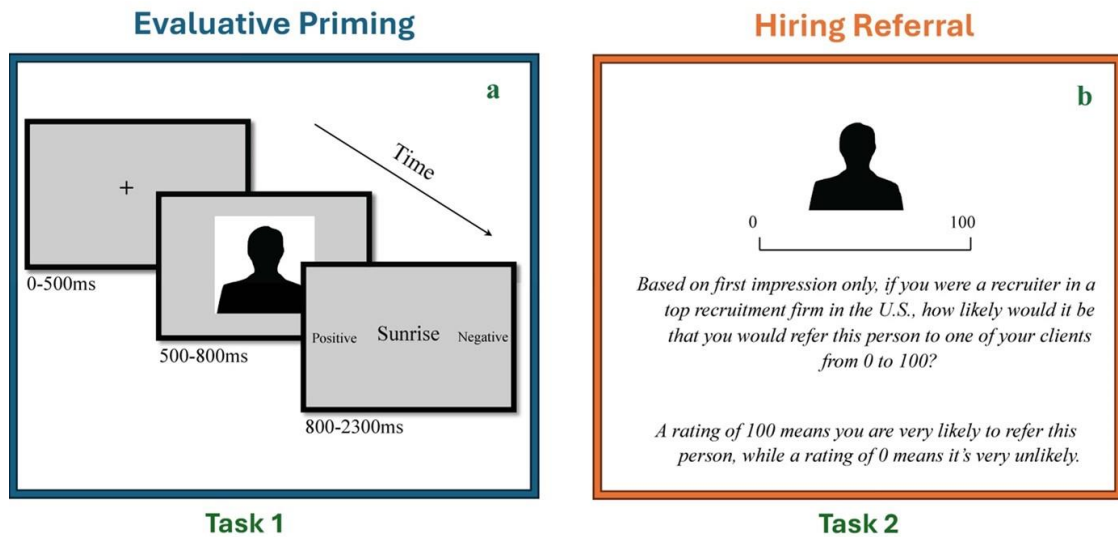


Figure 1 **Figure a** depicts an example of the EPT trial timing schematic (task 1). Each trial began with a fixation cross, followed by a photo prime (either perceived Arab/Middle Eastern or perceived White), and then the target word appeared. Note the silhouettes represent the faces and were not shown during the task. **Figure b** depicts an example of the hiring paradigm trial schematic (task 2). The hiring referral task immediately followed the EPT task. Participants were asked to report the likelihood of referring each candidate (all 60 unique faces that appeared in the EPT task), from 0 (very unlikely) to 100 (very likely), with unlimited time to make their referral decision. Note the silhouettes represent the faces and were not shown during the task.

### 3.7 Hiring Referral Task

To explore explicit discrimination, participants were asked to imagine themselves as recruiters at a top employment recruiting firm in the U.S. and to indicate how likely or unlikely, they would be to refer each candidate, based on first impression only, to one of their hypothetical clients (see Figure 1b). Candidates were all 60 faces (30 perceived Arab/Middle Eastern and 30 perceived White) encountered in the EPT task. The hiring referral instructions were as follows:

“Based on first impression only, if you were working in a top employment recruitment firm in the U.S., how likely would it be that you would refer this person to one of your clients, from 0 to 100? A rating of 100 means you are very likely to refer this person, while a rating of 0 means it’s very unlikely.”

Responses ranged from 0 (very unlikely) to 100 (very likely), reflecting the degree of referral bias towards candidates perceived as Arab/Middle Eastern Muslim or White non-Muslim. Participants had unlimited response time, and each candidate’s face was randomly presented once.

## **Chapter 4**

### **DATA ANALYSIS**

All regressions were run using the lme4 package (Bates et al., 2015) and the degrees of freedom were calculated using Satterthwaite's approximation, provided by the package lmerTest, version 2.0-33 (Kuznetsova et al., 2017).

#### **4.1 Evaluative Priming Task**

Confirmatory analyses focused on reaction time (RT) data. Data were cleaned according to our pre-registration (see section 22; <https://osf.io/ktv5r/>). After removing incorrect trials, no trials with RTs below 75 ms or exceeding 3.5 standard deviations from the participant's mean RT remained and thus did not need to be excluded from the analysis. To correct for positive skew of RTs, RTs were log-transformed. Perceived prime ethnorace (Arab/Middle Eastern, White), target word valence (positive, negative), and perceivers' endorsement of white supremacist ideologies were entered as parameters into a linear mixed-effects regression predicting log RTs. For the full regression model, conditions were coded as follows: Arab/Middle Eastern = -0.5, White = 0.5, negative = -0.5, and positive = 0.5. Participants' white supremacy ideology scores were z-transformed. We allowed for between-participant variance in intercepts and slopes (i.e., random effects), for as many predictors as the model would support, to account for participant-level variations in log RT. Random effect structures were determined using the BUILDMER package in R (Voeten & Voeten, 2021). For significant interactions, follow-up models were conducted to test simple effects.

## 4.2 Hiring Referral Task

Analyses focused on participant individual referral ratings per candidate, rather than average referral ratings (i.e., composite score) per ethnoracial group. We entered perceived candidate ethnoraice (Arab/Middle Eastern, White) and perceivers' endorsement of white supremacist ideologies as parameters into a linear mixed model, with candidate ethnoraice varying within-subjects and white supremacist ideologies varying between-subjects. For the full regression model, ethnoraice was coded as follows: Arab/Middle Eastern = -0.5, White = 0.5. Participants' white supremacy ideology scores were z-transformed. Participants' referral scores (continuous variable) were fitted as a function of perceived candidate ethnoraice and white supremacy scores (confirmatory). We allowed for between-participant variance in intercepts and slopes (i.e., random effects). Random effect structures were determined using the BUILDMER package in R (Voeten & Voeten, 2021). For significant interactions, follow-up models were conducted to test simple effects.

To investigate whether referral bias was moderated by implicit evaluative biases, we conducted an additional confirmatory analysis where participants' referral scores were fitted as a function of perceived candidate ethnoraice (Arab/Middle Eastern, White) and their ethnoraice evaluative biases with ethnoraice varying within-subjects and evaluative bias varying between-subjects. We also ran an exploratory model where we included the perceivers' endorsement of white supremacist ideologies in this linear mixed model, with ethnoraice varying within-subjects, and evaluative bias and white supremacist ideologies varying between-subjects. For the full regression model, ethnoraice was again coded as follows: Arab/Middle Eastern = -0.5, White = 0.5. Evaluative bias scores were calculated by subtracting RTs toward negative and positive words following White primes from the RTs toward negative and positive

words following Arab/Middle Eastern primes (i.e., (Negative words White – Positive words White) - Negative words Arab/Middle Eastern – Positive words Arab/Middle Eastern)). We allowed for between-participant variance in intercepts and slopes (i.e., random effects). Random effect structures were determined using the BUILDMER package in R (Voeten & Voeten, 2021). For significant interactions, follow-up models were conducted to test simple effects.

## Chapter 5

### RESULTS

#### 5.1 Evaluative Priming Task

We first examined how prime ethnorace, word valence, and white supremacist beliefs impact spontaneous evaluations in the evaluative priming task for two confirmatory hypotheses. The first focused on spontaneous evaluations as a function of prime ethnorace and word valence and the second examined whether white supremacist ideologies modulated spontaneous evaluations as a function of prime ethnorace and word valence. Recall that we predicted that participants should have greater spontaneous positive evaluations for perceived White non-Muslim primes relative to perceived AME Muslim primes and that this should be amplified for individuals who endorse white supremacist ideologies.

Results revealed a main effect of valence,  $b = -0.017$ ,  $SE = 0.004$ , 95% confidence interval ( $CI_{95\%}$ ) = [-0.023, -0.010],  $t(237.400) = -4.653$ ,  $p < .0001$ , suggesting faster responses to positive words compared to negative words. Results also revealed a significant main effect of white supremacist ideologies,  $b = 0.025$ ,  $SE = 0.009$ ,  $CI_{95\%} = [0.007, 0.043]$ ,  $t(277.000) = -2.706$ ,  $p = .007$ , indicating that greater endorsement of these beliefs was associated with overall slower reaction times. While there was no main effect of prime ethnorace, supporting our first confirmatory hypothesis, we found an interaction between prime ethnorace and valence related to evaluative priming, which is discussed below. However, contrary to our second confirmatory hypotheses, white supremacy ideologies did not modulate the prime

ethnorace by valence interaction, meaning this spontaneous evaluative ethnorace bias was similar regardless of white supremacy ideologies. All other effects were non-significant.

*Prime ethnorace x word valence interaction.* In support of our initial confirmatory hypothesis for evaluative priming, there was a significant prime ethnorace x word valence interaction (see Figure 2),  $b = -0.014$ ,  $SE = 0.043$ ,  $CI_{95\%} = [-0.022, -0.005]$ ,  $t(456.600) = -3.156$ ,  $p = .002$ . Follow-up analyses suggested that the interaction was driven by a spontaneous positive evaluation of perceived White non-Muslim primes,  $b = -0.024$ ,  $SE = 0.004$ ,  $CI_{95\%} = [-0.032, -0.015]$ ,  $t(435.200) = -5.611$ ,  $p < .001$ , compared to perceived Arab/Middle Eastern Muslim primes. This spontaneous positive evaluation was also observed for perceived Arab/Middle Eastern primes,  $b = -0.010$ ,  $SE = 0.004$ ,  $CI_{95\%} = [-0.018, -0.002]$ ,  $t(434.000) = -2.388$ ,  $p = .017$ , relative to perceived White primes, but to a lesser degree. In other words, participants had greater positive priming for perceived White non-Muslim primes compared to perceived Arab/Middle Eastern Muslim primes,  $b = -0.007$ ,  $SE = 0.003$ ,  $CI_{95\%} = [-0.013, -0.002]$ ,  $t(456.600) = -2.448$ ,  $p = .01$ . Additionally, participants had diminished negative priming toward perceived White non-Muslim primes relative to perceived Arab/Middle-Eastern Muslim primes,  $b = 0.006$ ,  $SE = 0.003$ ,  $CI_{95\%} = [0.000, 0.012]$ ,  $t(456.600) = 2.017$ ,  $p = .04$

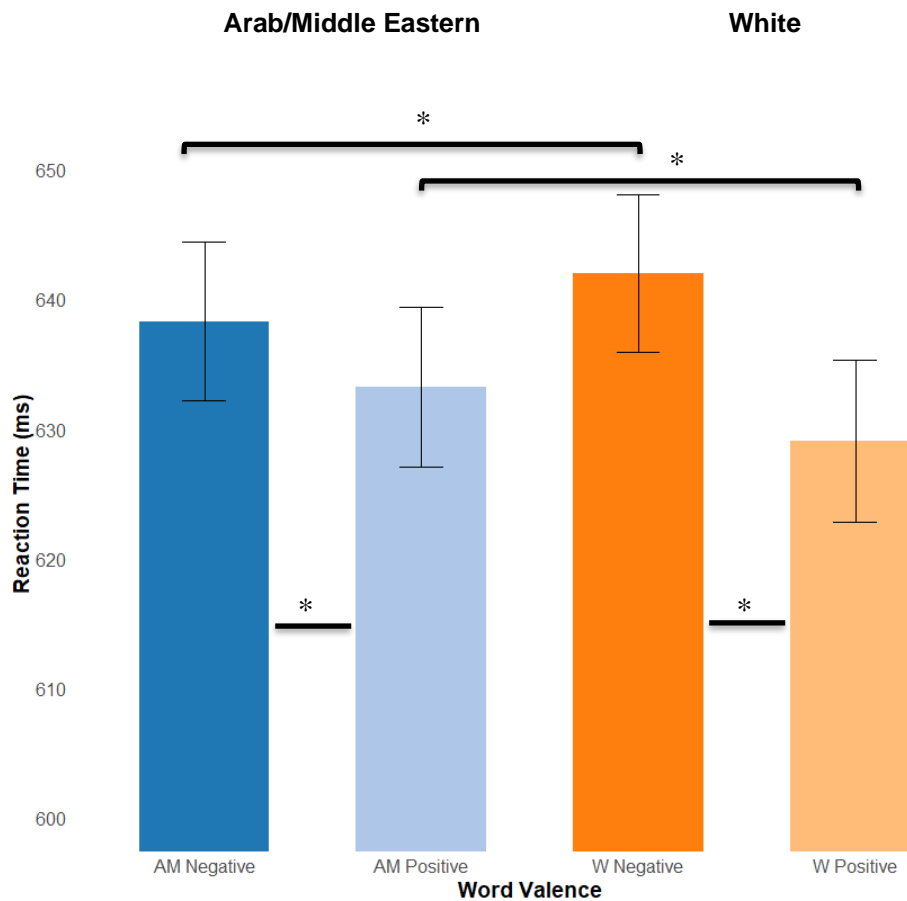


Figure 2 Greater Spontaneous Positive Priming to Perceived White Non-Muslim Primes than Perceived Arab/Middle Eastern Muslim Primes (n = 280). The x-axis refers to word valence (light blue and light orange represent positive words while dark blue and dark orange denote negative words). Prime ethnicity is also represented via color: blue denotes perceived Arab/Middle Eastern, while orange denotes perceived White. The y-axis represents reaction time in milliseconds. Error bars are included to indicate variability, and individual participant data points are not shown. Significant simple differences within the interaction are denoted by an asterisk (\*p < .05).

## 5.2 Hiring Referral Task

We next examined how ethnorace and white supremacist beliefs impacted hiring referral bias (third confirmatory hypothesis). Recall that we anticipated that greater endorsement of white supremacist beliefs would predict ethnorace bias in candidate referral decisions. Specifically, we predicted that individuals would have greater negative bias in hiring referrals towards perceived Arab/Middle Eastern Muslim individuals relative to perceived White non-Muslim individuals.

Results revealed a main effect of white supremacist beliefs,  $b = -3.710$ ,  $SE = 1.00$ ,  $CI_{95\%} = [-5.673, -1.746]$ ,  $t(277.984) = -3.703$ ,  $p < .001$ , suggesting that participants with greater endorsement of white supremacist beliefs were overall less likely to refer candidates. There was also a main effect of ethnorace,  $b = 1.537$ ,  $SE = 0.754$ ,  $CI_{95\%} = [0.060, 3.014]$ ,  $t(278.709) = 2.039$ ,  $p = .042$ , suggesting that White non-Muslim candidates were more likely to be referred compared to Arab/Middle Eastern Muslim candidates. Consistent with our third confirmatory prediction, we observed a significant two-way interaction between candidate ethnorace and endorsement of white supremacy,  $b = 6.763$ ,  $SE = 0.760$ ,  $CI_{95\%} = [5.319, 8.277]$ ,  $t(277.647) = 8.889$ ,  $p < .001$ , followed up below.

*Candidate ethnorace x endorsement of white supremacy.* Consistent with our confirmatory hypothesis for hiring referral bias, results suggested a significant interaction between candidate ethnorace and endorsement of white supremacy (see Figure 3),  $b = 6.798$ ,  $SE = 0.755$ ,  $CI_{95\%} = [5.319, 8.277]$ ,  $t(278.767) = 9.003$ ,  $p < .001$ . Follow-up analyses suggested that as participant's endorsement of white supremacist beliefs increased, so too did their explicit biases against referring perceived Arab/Middle Eastern Muslim male candidates relative to perceived White non-Muslim male candidates,  $b = 11.733$ ,  $SE = 1.360$ ,  $CI_{95\%} = [9.067, 14.399]$ ,  $t(278.606) = 8.626$ ,

$p < .001$ . Similar findings were also found among participants who showed average levels of white supremacy endorsement,  $b = 1.537$ ,  $SE = 0.754$ ,  $CI_{95\%} = [0.060, 3.014]$ ,  $t(278.709) = 2.039$ ,  $p = .042$ . On the contrary, individuals with less endorsement of white supremacist beliefs had a preference for referring perceived Arab/Middle Eastern Muslim male candidates compared to perceived White non-Muslim male candidates,  $b = -8.659$ ,  $SE = 1.361$ ,  $CI_{95\%} = [-11.326, -5.993]$ ,  $t(278.893) = -6.365$ ,  $p < .001$ . Consistent with our hypothesis, for perceived Arab/Middle Eastern Muslim candidates, as white supremacy endorsement increased, there was a significant decrease in the referral,  $b = -7.109$ ,  $SE = 1.100$ ,  $CI_{95\%} = [-9.265, -4.953]$ ,  $t(278.001) = -6.462$ ,  $p < .0001$ . However, there was no significant change in referral for perceived White non-Muslim candidates as a function of white supremacy,  $b = -0.311$ ,  $SE = 1.040$ ,  $CI_{95\%} = [-2.350, 1.728]$ ,  $t(277.994) = -0.299$ ,  $p > .05$ .<sup>1</sup>

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<sup>1</sup> Similar effects were found even when controlling for implicit evaluative bias, with the exception that no difference at average levels of white supremacy endorsement was found.

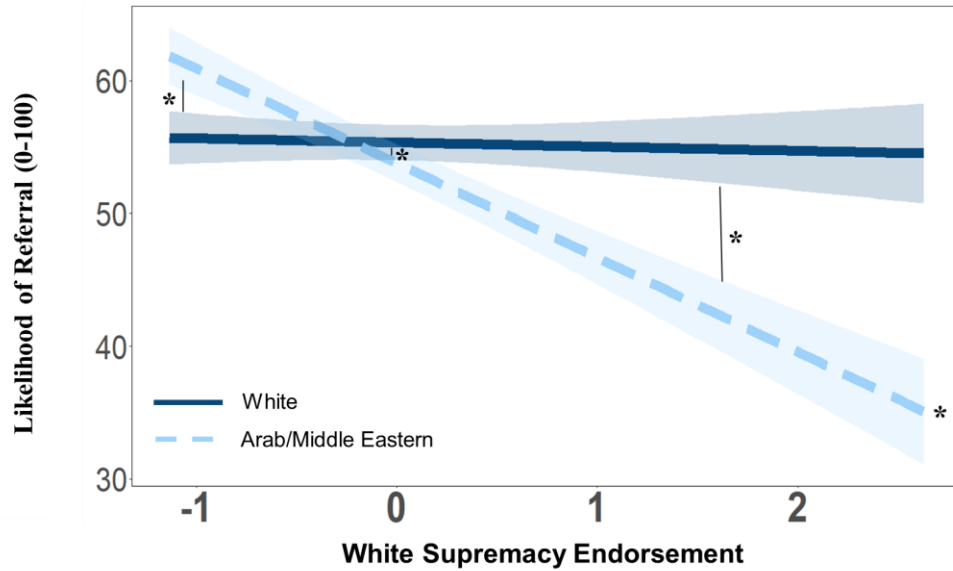


Figure 3 Participants were Less Likely to Refer Perceived Arab/Middle Eastern Muslim Candidates than Perceived White Non-Muslim Candidates as Their Endorsement of white supremacy Increased ( $n = 280$ ). The x-axis represents z-scored endorsement of white supremacy, and the lines represent candidate ethnorace (dotted blue line for Perceived Arab/Middle Eastern Muslim candidates and dark blue for Perceived White non-Muslim candidates). The y-axis represents referral scores (0-100) with greater numbers meaning more likely to refer the candidate. Significant simple differences within the interaction are denoted by an asterisk ( $*p < .05$ )

### 5.3 Evaluative Bias x Perceived Candidate Ethnorace

We next examined whether spontaneous evaluative ethnorace bias measured with the EPT would impact referral bias as a function of the candidate's perceived ethnorace (fourth confirmatory hypothesis). Specifically, we predicted that greater spontaneous evaluative ethnorace bias would predict fewer referrals for perceived Arab/Middle Eastern Muslim candidates relative to perceived White non-Muslim candidates. No main effect of evaluative ethnorace bias was found,  $b = -0.290$ ,  $SE = 1.020$ ,  $CI_{95\%} = [-2.289, 1.710]$ ,  $t(278.039) = -0.284$ ,  $p = .078$ . There was also no main

effect of candidate ethnorace,  $b = 1.519$ ,  $SE = 0.836$ ,  $CI_{95\%} = [-0.155, 3.192]$ ,  $t(277.824) = 1.779$ ,  $p = .076$ . Furthermore, we did not observe an interaction between candidate ethnorace and evaluative bias, and therefore, did not support this confirmatory hypothesis (confirmatory hypothesis 4).

We also examined whether white supremacist beliefs would moderate a relationship between candidate ethnorace and evaluative bias on hiring referral bias in an exploratory fashion (exploratory hypothesis 1). Results revealed a main effect of white supremacist beliefs,  $b = -4.080$ ,  $SE = 1.020$ ,  $CI_{95\%} = [-6.077, -2.082]$ ,  $t(275.922) = -4.002$ ,  $p < .001$ , suggesting that, after controlling for spontaneous evaluations and candidate's ethnorace, participants with greater endorsement of white supremacy ideologies were overall less likely to refer candidates. No main effect of ethnorace ( $p = .060$ ) or of evaluative bias ( $p = .837$ ) were found. However, we observed a significant two-way interaction between candidate ethnorace and endorsement of white supremacy. The effects were directionally similar to those described above without the inclusion of evaluative bias. Additionally, we observed an unanticipated weak interaction between evaluative bias and endorsement of white supremacy, although this effect did not vary as a function of the candidate's ethnorace. All other interactions were non-significant, for a full description of these effects and follow-up models, see Appendix B.

## **Chapter 6**

### **DISCUSSION**

In light of the rise of white supremacist beliefs and increasing discrimination faced by Muslim individuals in Western nations, this current study sought to examine how the endorsement of white supremacy shapes implicit biases and discrimination towards perceived Arab/Middle Eastern Muslim men. Although endorsement of white supremacist beliefs was not found to amplify negative implicit biases towards perceived Arab/Middle Eastern Muslim men, it did predict explicit discrimination in hiring referrals against them. These findings highlight how white supremacist beliefs can increase anti-Muslim hiring discrimination.

#### **6.1 Implicit Biases and White Supremacy Endorsement**

Consistent with previous research (Agerström & Rooth, 2009; Park et al., 2007), on average, negative implicit biases towards those perceived as Arab/Middle Eastern Muslim men compared to perceived White non-Muslim men were observed. Irrespective of white supremacy endorsement, participants displayed greater positive spontaneous evaluative bias towards their perceived ingroup (i.e., perceived White non-Muslim men) and a more pronounced negative bias against the perceived outgroup (i.e., perceived Arab/Middle Eastern Muslim men). However, contrary to our initial hypotheses, the endorsement of white supremacist beliefs did not shape spontaneous evaluations of perceived Arab/Middle Eastern Muslim men. One possibility for this finding is that negative implicit biases against them are widespread

among the general population, driven by a prevalent negative discourse surrounding Muslim individuals, often fueled by politicized rhetoric associating them with extremism (Betz, 2013; Hafez, 2014; Krzyzanowski, 2013; Kteily & Bruneau, 2017). For example, the proposed immigration ban of individuals from countries with greater Muslim populations in 2015 by a presidential candidate of the U.S. led to an increase in ethnocentrism, xenophobia, and racial concerns in the country (Baker et al., 2020; Perry et al., 2024). This type of rhetoric may serve to exacerbate the increasing perceived group threat affecting White Americans, regardless of political and ideological affiliation, in response to the perception of a broader shift in racial and cultural demographics in the U.S. (Craig & Richeson, 2014). Yet, the critical difference between the average U.S. citizen and a white supremacist is that the latter espouse and use explicit discrimination, including violent actions, against minority groups to preserve and defend whiteness.

## **6.2 Explicit Discrimination and Role of White Supremacy Endorsement**

Importantly, and reinforcing the distinction between implicit and explicit biases, white supremacy endorsement was found to predict explicit discrimination against perceived Arab/Middle Eastern Muslim men. This was true even after accounting for the participant's implicit biases. Specifically, individuals who strongly endorsed white supremacist ideologies exhibited significant bias against referring perceived Arab/Middle Eastern Muslim candidates, compared to their perceived ingroup (i.e., White, non-Muslim candidates). Individuals with moderate (or average) levels of white supremacy endorsement still displayed explicit bias against referring Arab/Middle Eastern Muslim candidates, albeit to a lesser degree. Conversely, those who did not endorse these ideologies displayed a slight preference for referring

Arab/Middle Eastern Muslim candidates, possibly due to a desire to rectify existing anti-Muslim bias in the U.S. or social desirability (Van de Mortel, 2008). This latter finding suggests that although negative implicit biases towards individuals perceived to be Arab/Middle Eastern Muslim may be prevalent among the general population in the U.S., they do not necessarily translate into increased explicit biases.

### **6.3 Ingroup Favoritism and Referral Bias**

Furthermore, consistent with social identity theory (Brewer, 1979; Tajfel et al., 1971), individuals endorsing white supremacist beliefs favored their perceived ingroup. However, contrary to initial expectations, there was no difference in the likelihood of referral for perceived White candidates among those endorsing white supremacist beliefs compared to individuals who did not. This finding may be attributed to the greater referrals of white candidates or the absence of perceived conflict between referring one candidate over the other, which might not have significantly heightened ingroup favoritism (Brewer, 1979). Future research should examine these possibilities.

### **6.4 Disentangling Implicit Bias and Explicit Discrimination**

These findings, consistent with prior literature (Oswald et al., 2013), challenge the association between implicit bias and discrimination (Friese et al., 2008; Greenwald et al., 2009; Strack et al., 2006). While negative implicit biases against perceived Arab/Middle Eastern Muslim men were prevalent, these biases did not translate into explicit discriminatory actions. Instead, the (self-reported) endorsement of white supremacy ideologies solely/significantly predicted discrimination. This distinction suggests that implicit biases reflect broader systemic racism and cultural

biases (Payne & Hannay, 2021), whereas explicit (racial) biases, or self-reported prejudices, more directly translate into discriminatory behaviors/actions (Greenwald et al., 2009; Oswald et al., 2013).

### **6.5 White Supremacy and Political Identity**

White supremacist ideologies have also been suggested to be intertwined with some facets of political identity (Petrow et al., 2018; Reyna et al., 2022). However, exploratory analyses suggested white supremacy endorsement still predicted explicit discrimination against perceived Arab/Middle Eastern Muslim men when accounting for political identity (see Appendix C.2). Furthermore, political identity on its own was not associated with explicit discrimination. Therefore, although white supremacy is often conceptualized as a type of political identity, these results suggest that it represents an ideology that extends beyond political identity (Byman, 2022).

### **6.6 Study Limitations and Future Directions**

There are some limitations to the present study. Although the faces perceived to be non-White were selected based on independent perceivers inferring they are Muslim, participants in the current study did not receive information about the target's religious affiliation. It is therefore possible providing information about religious affiliation would shape spontaneous evaluations and hiring referrals, possibly exacerbating explicit biases towards Muslim individuals, irrespective of their ethnorace. Similarly, it is possible that perceptions of foreignness may shape both implicit and explicit biases. Future research should explore how awareness of immigration status may interact with inferred religious affiliation to shape outgroup biases.

Furthermore, while the participants included in this study were not directly recruited from white supremacist groups, studying self-identified white supremacists could provide a better understanding of factors that differentiate individuals who are pre-engaged versus already radicalized within these movements. This line of work is pressing considering that ideological hate is rapidly increasing in the U.S. and globally, fueling interpersonal conflicts and violence (Institute for Economics and Peace, 2019). Therefore, due to the devastating societal, security, and economic consequences, it is vital to understand the roots of ideological hate, radicalization (i.e., how white supremacists are made), and deradicalization (i.e., how white supremacists are unmade). Moreover, understanding these underlying mechanisms is crucial, as most individuals who hold white supremacist beliefs do not join or affiliate with hate groups.

## **6.7 Conclusion**

This research is among the first empirical studies examining how the endorsement of white supremacist beliefs shapes outgroup biases. The findings highlight how endorsing white supremacy shapes discrimination against perceived Arab/Middle Eastern Muslim men, even without knowledge of their actual religious affiliations. As the U.S. and other nations around the world continue to diversify, both religiously and racially, these findings underscore the tangible impacts of these extreme ideological beliefs. However, further investigations are needed to provide a more comprehensive understanding of the factors influencing anti-Muslim discrimination and how white supremacy shapes these biases.

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## Appendix A

### MODEL DETERMINATION

#### A.1 Variable Coding for All Models

To facilitate interpretation of the models below, the contrast coding for all variables is as follows: Ethnorace (Arab/Middle Eastern = -.5, White American/European = .5), Valence (Negative = -.5, Positive = .5), white supremacy (z-scored continuous variable), evaluative bias (z-scored continuous variable). Dummy coding for all follow-up models is as follows: Ethnorace.W (Arab/Middle-Eastern = 1; White American/European = 0), Ethnorace.AM (Arab/Middle Eastern = 0, White American/European = 1), Valence.N (Negative = 0, Positive = 1), Valence.P (Negative = 1, Positive = 0), NatLow (white supremacy centered at 1.5 *SD* below the mean), NatAverage (white supremacy centered at the mean), NatHigh (white supremacy centered at 1.5 *SD* above the mean), EPTLow (evaluative bias centered at 1.5 *SD* below the mean), EPTAverage (evaluative bias centered at the mean) and EPTHHigh (evaluative bias centered at 1.5 *SD* above the mean).

## Appendix B

### THE EFFECT OF EVALUATIVE BIAS, CANDIDATE ETHNORACE, AND WHITE SUPREMACY ON REFERRAL BIAS

Results revealed a main effect of white supremacy endorsement,  $b = -4.080$ ,  $SE = 1.020$ ,  $CI_{95\%} = [-6.77, -2.082]$ ,  $t(275.922) = -4.002$ ,  $p < .001$ , suggesting that, after controlling for spontaneous evaluations, participants with greater endorsement of white supremacy ideologies were overall less likely to refer candidates. No main effect of candidate ethnorace was found,  $b = 1.442$ ,  $SE = 0.752$ ,  $CI_{95\%} = [-0.053, 2.896]$ ,  $t(275.781) = 1.890$ ,  $p = .060$ . However, we observed a significant two-way interaction between candidate ethnorace and endorsement of white supremacy  $b = 6.634$ ,  $SE = 0.767$ ,  $CI_{95\%} = [5.131, 8.137]$ ,  $t(275.795) = 8.650$ ,  $p < .001$ , followed up below. We also observed an unanticipated weak interaction between evaluative bias and endorsement of white supremacy, but this effect did not vary as a function of the candidate's ethnorace. All other interactions were non-significant.

#### B.1 Candidate ethnorace x endorsement of white supremacy

Follow-up analyses suggested that, after controlling for evaluative biases, as participant's endorsement of white supremacist ideologies increased they referred perceived Arab/Middle-Eastern male candidates less compared to perceived White male candidates,  $b = 11.372$ ,  $SE = 1.385$ ,  $CI_{95\%} = [8.569, 14.086]$ ,  $t(276.043) = 8.214$ ,  $p < .001$  (see Table B.1). In contrast, as participant's endorsement of supremacist ideologies decreased they referred perceived Arab/Middle-Eastern male candidates more compared to perceived White male candidates,  $b = -8.528$ ,  $SE = 1.364$ ,  $CI_{95\%} = [-$

11.20, -5.86],  $t(275.531) = -6.252, p < .001$ . Analyses of simple slopes further suggested that, even after controlling for evaluative biases, for perceived Arab/Middle-Eastern male candidates, as white supremacy endorsement increased, there was a significant decrease in referral,  $b = -7.396, SE = 1.123, CI_{95\%} = [-9.598, -5.195], t(275.932) = -6.585, p < .001$  (see Figure B.1). However, there was no significant change in referral for perceived White male candidates as a function of white supremacy,  $b = -0.763, SE = 1.054, CI_{95\%} = [-2.828, 1.287], t(275.808) = -0.724, p = 0.470$ .

Table B.1 Referral Bias Modulated by EPT Bias, Candidate Ethnorace, and White Supremacy: Decomposing 2-way interaction between candidate ethnorace and white supremacy

Analyses	Condition	<i>b</i>	<i>SE</i>	95% <i>CI</i>	<i>t</i> -value	<i>df</i>	<i>p</i> -value
W vs AME:	<b>Low WS</b>	<b>-8.528</b>	<b>1.364</b>	<b>[-11.202, -5.855]</b>	<b>-6.252</b>	<b>275.531</b>	<b>&lt; .001</b>
Simple Effects of Ethnorace	Mid WS	1.422	.752	[-0.053, 2.986]	1.890	275.781	.060
	<b>High WS</b>	<b>11.372</b>	<b>1.385</b>	<b>[8.569, 14.086]</b>	<b>8.214</b>	<b>276.043</b>	<b>&lt; .001</b>
Simple Effects of WS	<b>AME</b>	<b>-7.396</b>	<b>1.123</b>	<b>[-9.598, -5.195]</b>	<b>-6.585</b>	<b>275.932</b>	<b>&lt; .001</b>
	W	-.763	1.054	[-2.828, 1.287]	-0.724	275.808	.470

Note: W = White; AME = Arab/Middle Eastern; WS = white supremacy Scores

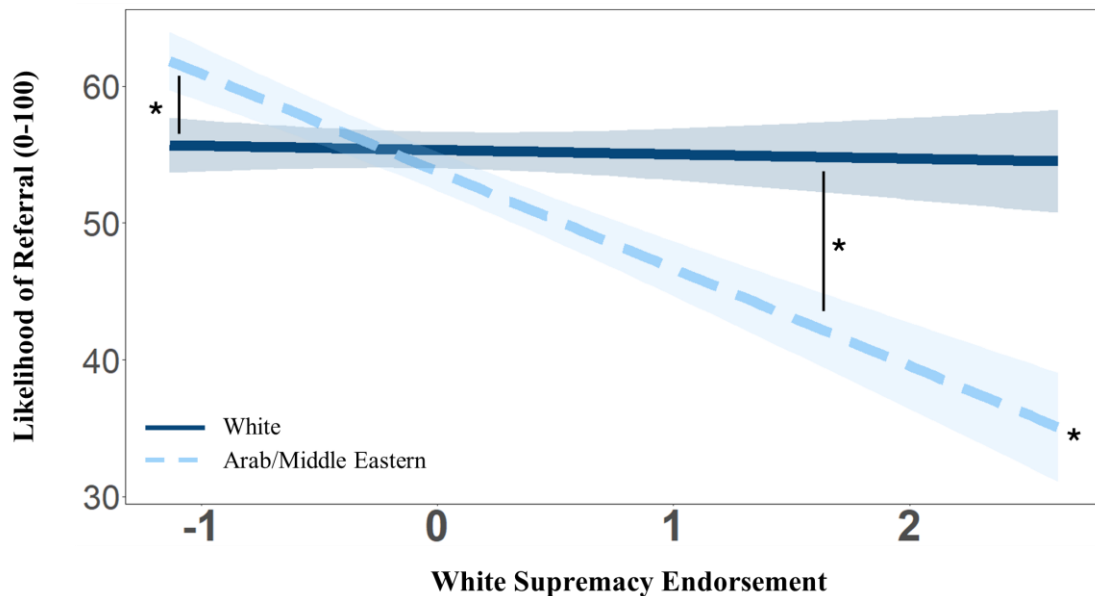


Figure B.1 After controlling for participants' spontaneous evaluations, participants were less likely to refer perceived Arab/Middle Eastern candidates than perceived White candidates as their endorsement of white supremacy increased ( $n = 280$ ). The x-axis represents z-scored endorsement of white supremacy, and the lines represent candidate ethnorace (dotted blue line for Perceived Arab/Middle Eastern and dark blue for Perceived White). The y-axis represents referral scores (0-100) with greater numbers meaning more likely to refer the candidate. Significant simple differences within the interaction are denoted by an asterisk ( $*p < .05$ )

## B.2 Evaluative bias x endorsement of white supremacy

We observed an unexpected weak significant two-way interaction between evaluative bias and endorsement of white supremacy,  $b = 1.850$ ,  $SE = 0.934$ ,  $CI_{95\%} = [0.018, 3.681]$ ,  $t(275.950) = 1.980$ ,  $p < .049$ . Follow-up analyses suggested that, after controlling for candidate ethnorace, individuals with high endorsement of white supremacy who had either a low evaluative bias,  $b = -6.854$ ,  $SE = 1.877$ ,  $CI_{95\%} = [-10.533, -3.174]$ ,  $t(275.942) = -3.661$ ,  $p < .001$ , or a mid-level evaluative bias,  $b = -$

4.080,  $SE = 1.019$ ,  $CI_{95\%} = [-6.077, -2.082]$ ,  $t(275.922) = -4.002$ ,  $p < .001$ , tended to be less generous with their referrals overall (see Table B.2). However, readers should be cautious with the interpretation of these results as they were not predicted a priori and found only in the context of exploratory analyses.

Table B.2 Referral Bias modulated by EPT bias, Candidate Ethnorrace, and White Supremacy: Decomposing the 2-way interaction between EPT bias and white supremacy.

Analyses	Condition	<i>b</i>	<i>SE</i>	<i>95% CI</i>	<i>t</i> -value	<i>df</i>	<i>p</i> -value
Simple Effects of EPT bias	Low WS	-2.981	1.826	[-6.560, 0.598]	-1.632	275.928	.104
	Mid WS	-0.207	1.005	[-2.177, 1.763]	-0.206	276.018	.837
	High WS	2.567	1.617	[-0.601, 5.736]	1.588	276.030	.114
Simple Effects of WS	<b>Low EPT</b>	<b>-6.854</b>	<b>1.877</b>	<b>[-10.533, -3.174]</b>	<b>-3.661</b>	<b>275.942</b>	<b>&lt;.001</b>
	<b>Mid EPT</b>	<b>-4.080</b>	<b>1.019</b>	<b>[-6.077, -2.082]</b>	<b>-4.002</b>	<b>275.922</b>	<b>&lt;.001</b>
	High EPT	-1.305	1.575	[-4.393, 1.782]	-0.829	275.937	.408

*Note:* WS = white supremacy Scores; EPT = Evaluative Priming Task Bias

## Appendix C

### INDIVIDUAL DIFFERENCE EXPLORATORY ANALYSES

This second portion of the appendix contains information relevant to the individual difference measures collected for exploratory analyses. In the first section, the exploratory measures collected are listed. In the second section, we report one exploratory analysis for the evaluative priming task, and in the third section, we report one exploratory analysis for the hiring bias task.

#### C.1 Individual Difference Exploratory Measures

After completing the evaluative and hiring referral tasks, participants completed a few surveys and demographic questions that were intended for exploratory analysis. Each survey collected is detailed below.

**Anti-Muslim Prejudice Scale** (Ernst et al., 2003). This multi-item measure assesses anti-Muslim attitudes with questions for which an affirmative response may be rationalized along seemingly non-prejudiced grounds (e.g., “Muslims, as a rule, are more devious than other people”; “Muslims deserve great respect for their many cultural accomplishments”; “Compared with other people, Muslims are uncivilized and backward”). Items were rated on an 8-point Likert scale, from -4 = *very strongly disagree* to 4 = *very strongly agree*.

**Ethnic Identity** (Harris et al., 2022). This multi-item measure assesses how closely a person identifies with their racial/ethnic group (e.g., “I have a strong sense of

belonging to my own racial/ethnic group'). Items were rated on a 7-point Likert scale, from 1 = *strongly disagree* to 7 = *strongly agree*.

**Racial BIRGing** (Harris et al., 2022). This multi-item scale measures the belief that one's racial group has greatly contributed to society (e.g., "The great advancements of civilization have come from my racial/ethnic group."). Items were rated on a 7-point Likert scale, from 1 = *strongly disagree* to 7 = *strongly agree*.

**Racial Entitlement** (Harris et al., 2022). This multi-item measure explores the feelings of deservedness because one's race (e.g., "I feel I am more deserving of good things than others because of my race/ethnicity."). Items were rated on a 7-point Likert scale, from 1 = *strongly disagree* to 7 = *strongly agree*.

**Retroactive Ingroup Social Comparison** (Harris et al., 2022). This multi-item measure explores the comparison of one's ingroup to a previous point in time (e.g., "Compared to my parents' generation I believe my racial/ethnic group has less opportunities today."). Items were rated on a 7-point Likert scale, from 1 = *vastly worse off* to 7 = *vastly better off*.

**Racial Nostalgia** (Harris et al., 2022). This multi-item scale measures longing for a previous time when one's racial or ethnic group experienced positive outcomes (e.g., "When thinking about my racial/ethnic group, our best days were in the past."). Items were rated on a 7-point Likert scale, from 1 = *strongly disagree* to 7 = *strongly agree*.

**System Perceptions** (Harris et al., 2022). This multi-item scale measures the belief that a system is working well (justification) or not working well (condemnation) (e.g., "The American system is set up so that some groups have more opportunities

than other groups”). Items were rated on a 7-point Likert scale, from 1 = *strongly disagree* to 7 = *strongly agree*.

**Racial Threat Perception** (Harris et al., 2022). This multi-item scale measures the perception that racial/ethnic minorities pose realistic and/or symbolic threats. Realistic threats can include threats to individual economic stability or personal safety (e.g., “Racial/ethnic minorities are taking economic opportunities away from White Americans (e.g., jobs, loans)”). Symbolic threats can include threats to ideology or religious beliefs (e.g., racial/ethnic minorities violate traditional American values.”). Items were rated on a 7-point Likert scale, from 1 = *strongly disagree* to 7 = *strongly agree*.

**Cobras** (Harris et al., 2022). This multi-item measure asks participants about colorblind ideologies (e.g., “Immigrants should try to fit into the culture and adopt the values of the U.S.”). Items were rated on a 7-point Likert scale, from 1 = *strongly disagree* to 7 = *strongly agree*.

**Discriminatory policies** (Harris et al., 2022). This multi-item scale measures individuals support for policies that hinder minorities and immigrants (e.g., “Sometimes it is justified to use violence to achieve political goals in this country”; “Our country should use armed force against anyone crossing the border illegally”). Items were rated on a 7-point Likert scale, from 1 = *strongly disagree* to 7 = *strongly agree*.

**Dehumanization** (Harris et al., 2022). This multi-item scale measures the extent to which groups are viewed as being human-like. Participants are asked to report how evolved they considered an average member of each group to be (e.g., White people, Black people, Christian, Muslims, Alt-Right supporters, etc.).

**Patriotism** (Harris et al., 2022). This measure has two questions that ask about participants' opinions about patriotism (e.g., "Patriotism is about protecting America and keeping it safe."). Items were rated on a 7-point Likert scale, from 1 = *strongly disagree* to 7 = *strongly agree*.

**Political Identity** (Harris et al., 2022). This is a measure examining four different forms of political views (overall, on economic issues, on social issues, and on national security issues), (e.g., "How would you characterize your political views overall?"; "How would you characterize your political views on economic issues?"). Items were rated on a 7-point Likert scale, from 1 = *very liberal* to 7 = *very conservative*.

**Explicit Ethnoracial Bias.** To assess participant's level of explicit ethnoracial bias, participants reported their feelings of warmth toward White American/European people and towards Arab Muslim people. Responses ranged from 0° (coldest feelings) to 100° (warmest feelings) on either feeling thermometer. To calculate participant's level of explicit ethnoracial bias, participant's feelings of warmth towards Arab Muslim people were subtracted from their feelings of warmth towards White American/European people.

**Perceived Religious Affiliation.** Participants completed a perceived religious affiliation task, where they reported whether they perceived each target stimuli as being Muslim. Specifically, participants were asked "how likely would most people in the U.S. perceive this person to be Muslim?". Stimuli were rated on a 7-point Likert scale, from 1 = *extremely unlikely* to 7 = *extremely likely*.

**Demographics.** Items were assessed in the following order: self-identified gender, age, veteran status, self-identified race/ethnicity, and self-disclosed religious identity

## **C.2 Exploratory Analyses with Political Identity**

In light of previous research suggesting that white identity or white supremacist ideologies might relate to political ideology (Harris et al., 2022; Petrow et al., 2018), we have included exploratory analyses investigating this relationship. To explore participant's political ideology, we used the political identity measure from the Toxic White Identity questionnaire (Harris et al., 2022; Reyna et al., 2022). Within our sample, the correlation between white supremacist ideologies and political identity was moderate,  $r = .586$  (see Figure C.2). However, as these findings stem from exploratory analyses, and were not the primary focus of this research, we advise readers to interpret these findings with caution.

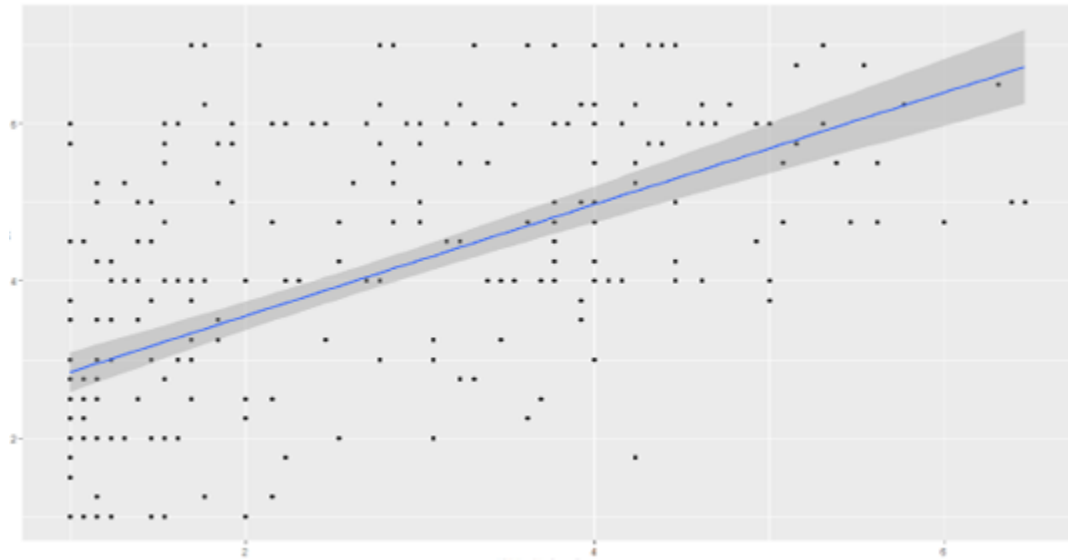


Figure C.2 White supremacy endorsement and political identity distribution scores ( $n = 280$ ). The x-axis represents endorsement of white supremacy (1-7), with scores above 3.5 representing increasing endorsement of white supremacist beliefs. The y-axis represents political identity (1-7), with scores above 4.5 representing a more conservative political leaning, and scores below 3.5 representing a more liberal political leaning.

### C.2.1 Evaluative Priming Task

Analyses focused on reaction time data from the evaluative priming task. Political identity was a continuous measure that was converted to z scores across participants.

The contrast coding for all the variables remained consistent with the coding scheme used in our confirmatory analyses (see Appendix A.1), apart from political identity. Political identity was coded as follows: Lib (political identity centred at 1.5  $SD$  below the mean), Consv (political identity centred at 1.5  $SD$  above the mean).

### **C.2.1.1 Results Evaluative Priming: Exploratory Analysis of Political Identity**

Consistent with the primary findings outlined in our main manuscript, our results revealed a main effect of valence,  $b = -0.019$ ,  $SE = .005$ ,  $CI_{95\%} = [-0.027, -0.010]$ ,  $t(239.7) = -4.114$ ,  $p < .001$ , suggesting faster responses to positive words compared to negative words. Similarly, there was a significant main effect of white supremacy endorsement,  $b = 0.024$ ,  $SE = 0.012$ ,  $CI_{95\%} = [0.001, 0.047]$ ,  $t(275.3) = 2.019$ ,  $p = .044$ , indicating that greater endorsement of this ideology was associated with overall slower reaction times. However, the two-way interaction between ethnorace and valence reported in our main manuscript was no longer statistically significant ( $p = .123$ ). Therefore, this may suggest that the two-way interaction between ethnorace and valence observed in the main text may be in part explained by participants' political identity. No other main effects or interactions reached statistical significance when including political identity in the model.

### **C.2.2 Referral Task**

These analyses focused on response data from the hiring referral task. Political identity was a continuous measure that was converted to z-scores across participants

#### **C.2.2.1 Results Hiring Referral: Exploratory Analysis Political Identity**

Consistent with the primary findings outlined in our main manuscript, we observed a main effect of white supremacy endorsement,  $b = -3.930$ ,  $SE = 1.295$ ,  $CI_{95\%} = [-6.469, -1.389]$ ,  $t(276.001) = -3.034$ ,  $p = .003$ , suggesting that participants with greater endorsement of white supremacy were overall less likely to refer candidates. Compared to our main manuscript there was no main effect of ethnorace, suggesting that when including participants' political identity in the model perceived White candidates were not more likely to be referred compared to perceived

Arab/Middle Eastern candidates. However, the interaction between candidate ethnorace and white supremacy endorsement remained robust,  $b = 6.036$ ,  $SE = 0.977$ ,  $CI95\% = [4.121, 7.952]$ ,  $t(276.829) = 6.177$ ,  $p < .001$ , underscoring the relationship between white supremacy endorsement and explicit biases against perceived Arab/Middle Eastern men, even when controlling for political ideology. Furthermore, our analysis did not reveal a main effect of political identity or a two-way interaction between candidate ethnorace and political identity. Therefore, these findings suggest that political identity alone does not predict explicit hiring referral bias against perceived Arab/Middle Eastern men, nor does it amplify the relationship between white supremacist beliefs and candidate ethnorace predicting candidate referrals. No other interactions reached statistical significance when including political identity in the model.

### **C.2.3 Discussion**

Our findings suggest that, when controlling/accounting for participant's political identity, there was no difference in spontaneous evaluations (implicit biases) towards perceived Arab/Middle Eastern men compared to perceived White men. However, when examining explicit discrimination against perceived Arab/Middle Eastern men, political identity was not a predictor of bias in referral decisions. In fact, white supremacy endorsement continued to predict biases in referral decisions against perceived Arab/Middle Eastern men. Hence, this suggests that participants' political identity does not explain the relationship between white supremacist ideologies and explicit discrimination.

Overall, these results may suggest that white supremacy endorsement and political ideology are two separable constructs that operate independently of each

other in this context. However, we do caution readers that these reported findings are from exploratory analyses as they were not the focus of this research.

## Appendix D

### IRB/HUMAN SUBJECT APPROVAL



Institutional Review Board  
210H HULLIBEN HALL  
NEWARK, DE 19716  
PHONE: 302-831-2137  
FAX: 302-831-2828

DATE: February 23, 2023  
TO: Jennifer Kubota, Ph.D.  
FROM: University of Delaware IRB  
STUDY TITLE: [1994123-1] Ethnorace and Hate  
SUBMISSION TYPE: New Project  
ACTION: APPROVED  
EFFECTIVE DATE: February 23, 2023  
NEXT REPORT DUE: February 22, 2024  
REVIEW TYPE: Expedited Review  
REVIEW CATEGORY: Expedited review category # (7)

Thank you for your New Project submission to the University of Delaware Institutional Review Board (UD IRB). The UD IRB has reviewed and APPROVED the proposed research and submitted documents via Expedited Review in compliance with the pertinent federal regulations.

As the Principal Investigator for this study, you are responsible for, and agree that:

- All research must be conducted in accordance with the protocol and all other study forms as approved in this submission. Any revisions to the approved study procedures or documents must be reviewed and approved by the IRB prior to their implementation. Please use the UD amendment form to request the review of any changes to approved study procedures or documents.
- Informed consent is a process that must allow prospective participants sufficient opportunity to discuss and consider whether to participate. IRB-approved and stamped consent documents must be used when enrolling participants and a written copy shall be given to the person signing the informed consent form.
- Unanticipated problems, serious adverse events involving risk to participants, and all non-compliance issues must be reported to this office in a timely fashion according with the UD requirements for reportable events. All sponsor reporting requirements must also be followed.

The UD IRB REQUIRES the submission of a PROGRESS REPORT DUE ON February 22, 2024. A continuing review/progress report form must be submitted to the UD IRB at least 45 days prior to the due date to allow for the review of that report.

If you have any questions, please contact the UD IRB Office at (302) 831-2137 or via email at [hsrb-research@udel.edu](mailto:hsrb-research@udel.edu). Please include the study title and reference number in all correspondence with this office.

INSTITUTIONAL REVIEW BOARD

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