

Self-Reflection and Regulation Training (SRRT): A Proposed Training Model for Mitigating the Impacts of Senior Leader Bias in the Armed Forces



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EXECUTIVE SUMMARY

- Unconscious biases (UB) are beliefs, attitudes, and assumptions that form automatically; an individual's personal life experiences and natural human cognitive limitations inform these biases, so they may be inaccurate or incomplete, which can result in a pattern of unintended marginalization of people from marginalized groups.
- Targets of bias experience higher levels of stress/anxiety, a lower sense of belonging, psychological disengagement and behavioral compensation to cope with bias, and micro-aggressions, and other adverse effects. These impacts create a chilly climate, undermining performance, lowering job satisfaction, leading to retention difficulties, etc.
- Those who employ UB, as well as targets, can experience interaction anxiety and discomfort, which can decrease the ability to control one's thoughts and reactions. These interaction challenges may result in divergent feelings and perceptions of the same event or interaction.
- UB can negatively affect decision making, unbeknownst to the decision maker. UB can affect what information decision makers most attend to, how they attend to it, how they interpret it, and what conclusions are drawn. An example is the Ultimate Attribution Error, which occurs when people assume that their own in-group's negative behavior can be explained by situational factors, but assume that similar negative actions by out-group members are due to their personal characteristics.
- UB has pervasive adverse effects on organizations, infecting recruitment, interviews, mentoring, evaluations, promotions, policy implementation, etc., which decrease unit morale, cohesion, effectiveness, and mission readiness.
- The Theoretical Framework is as follows: One way to understand UB is through dual-process cognitive models. For example, modes of thought may reflect use of "System 1," which is automatic, unintentional, and outside of conscious awareness and control. "System 2" is slower and more deliberate, requires effort, and is under conscious control. UB reflects the operation of System 1

stereotypes and mental associations that are formed very early in life through one's surroundings and culture, whereas controlling UB requires the sustained effort of System 2 thinking.

- Potential interventions include the following, with this key caveat: Importantly, there are *no known* evidence-based interventions to *durably* modify *specifically* unconscious/implicit bias. Nevertheless, several strategies may modify UB briefly and more durably change other important forms of subtle and explicit biases.
- For individual-level intervention, *Conscious Objectivity Training* (COT) and sustained interventions such as *Devine's "Breaking the Prejudice Habit"* provide the best evidence-based frameworks for mitigation (see pp. 35-37 for a detailed overview and Appendix A for materials).
- These interventions involve educating participants about the existence, pervasiveness, and detrimental effects of UB; increasing awareness of one's own and others' biases; learning to engage in self-regulation/control; teaching and helping others engage with various mitigation strategies such as individuation, decreasing cognitive load, counter-stereotypic imaging, stereotype replacement, perspective-taking, situational attribution training, and increasing opportunities for contact. (See pp. 30-34 for details on each strategy).
- A Public Health Approach involves Systems Interventions. Because there is little evidence that individual unconscious biases can be lastingly mitigated, in addition to the above intervention strategies, researchers have increasingly turned their attention to strategies designed to prevent UB from being applied – to providing guardrails that restrain the ability of activated UB from leading to disparate treatment of marginalized group members.
- Such strategies involve (1) disparity finding (e.g., using personnel and data to locate biases within an organization) and (2) employing preventative measures. Preventative measures are those designed to increase the objectivity in recruitment, interviewing, hiring, evaluation, promotion, and policy generation and enforcement (e.g., blind or structured interviews, standardized objective performance evaluation measures, etc.).

- Disparities education can be beneficial. Similar to the education component of individual-level interventions, existing research suggests it may be important to also educate people about the nature of systems and the evidence of widespread, insidious racial, gender, sexual, etc. disparities (e.g., health, jobs, income, wealth, environmental, etc.).
- The various education, awareness, and intervention strategies outlined are designed to (1) help leaders increase unit resilience through **PRIME-ing**: (**P**romoting psychological safety within the unit; **R**ole modeling bias-mitigation skills; **I**ncreasing interpersonal communication skills to gather individuating information; **M**entoring subordinates to increase opportunities for contact; **E**ducating leaders and subordinates; and (2) increasing objectivity in their decision making by **DECID-ing**: **D**ecreasing cognitive load; **E**xamining assumptions; **C**ountering-stereotypic imaging; **I**ncreasing individuation; **D**eveloping perspective.

Self-Reflection and Self-Regulation Training (SRRT) for Senior Leaders

Overview

Bias, whether conscious/explicit or unconscious/implicit¹ can be a barrier to diversity, inclusion, and equality, which are critical elements to total Force readiness across the DoD (DoD 2022; DoD D&I Board, 2020; DoDI 1350.02; Esper 2020; White House 2021). This document synthesizes the best available evidence on unconscious bias and efforts toward awareness and mitigation. The overarching goal of the review is offer guidance for the creation of a training framework that aligns with DoD efforts to improve senior leaders' decision-making capacities, as well as to promote diverse representation, increase equal opportunity, and improve unit cohesion and performance.

Definition and Relevance

Multiple definitions of unconscious bias exist. One way to understand unconscious bias comes from the proceedings of a recent workshop on the science of implicit bias:

Implicit bias has been commonly defined as any unconscious or unacknowledged preferences that can affect a person's beliefs or behaviors, and in particular, an unconscious favoritism toward or prejudice against people of a certain race, gender, or group that influences one's own actions or perceptions. (National Academies of Sciences, Engineering, and Medicine, 2021, p. 2)

¹ *Unconscious bias* is a construct with several adjacent labels, including implicit bias and unintentional bias, or more generically, subtle bias. Although implicit bias and unintentional bias are presently the more scientific-consensus accepted terms, in this review we use the term "unconscious bias" to align with DoD policy terminology usage. Importantly, "unconscious bias" is an umbrella construct that does not necessarily imply a particular form of bias such as racism, sexism, etc. Nevertheless, for purposes of this review, the term is used almost exclusively to connote a bias that may differentially impact marginalized groups (e.g., race, sex, gender, etc.) and group members.

Complicating matters, together, empirical research on bias and prejudice reveals that unconscious bias or prejudice is not one thing; it could reflect one or more distinct forms of learning. Its roots can be found at many levels including neural, individual psychological, small group, large group, institutional, and cultural levels. For the purposes of the SRRT program framework, *unconscious biases are beliefs, attitudes, and assumptions that form automatically; an individual's personal life experiences and natural human cognitive limitations inform these, so they may be inaccurate or incomplete, which can result in a pattern of unintended marginalization of people from certain groups.*

The DoD is engaged in a “war for talent”, and to achieve both short- and long-term operational goals, the Services must attract, recruit, retain, and develop a diverse talent pool. Unconscious biases may be one barrier, among many, to an inclusive and equitable workplace climate and, therefore, a barrier to leveraging the benefits of a diverse organization. The volatile, complex, and uncertain environments of future threats require cognitive diversity across the DoD (e.g., DoD Board on D&I, 2020; Holt & Davis, 2022). The U.S. Secretary of Defense issued a memorandum, *Immediate Actions to Address Diversity and Inclusion and Equal Opportunity in the Military Services*, dated July 14, 2020, specifying that “Addressing racial prejudice and bias within the force requires a combination of ongoing skill development, leadership, and accountability” (Esper, 2020, p.2). That memo specifically directed the development of “educational requirements for implementation across the military lifecycle to educate the force on unconscious bias” (Esper, 2020, p.3). Additionally, Department of Defense Instruction (DoDI) 1350.02, *DoD Military Equal Opportunity Program*, was reissued on September 24, 2020, and mandates that DEOMI instructors train objective-based curricula for senior leaders on

“unconscious bias” among other core topics (Office of the Under Secretary of Defense for Personnel and Readiness, September 4 2020, p. 32).

For effective leadership and Force readiness, Service members and military leadership are often called on to make effective decisions while under stress, with multiple pressing demands, and often with little time. While the use of cognitive shortcuts can be helpful in making quick decisions, unconscious biases can be problematic, especially when decisions and resulting actions are based on mistakes, misinterpretations, stereotypes, and other biased information (Agarwal, 2020). The impact of biased decision making is problematic because it can impact how people form attitudes and judgments that adversely affect individuals, groups, and organizations to include the design, implementation, and enforcement of policies. Bias can occur in all three psychological components and lead to prejudiced emotions, stereotypical thoughts, and discriminatory behavior (Hagiwara et al., 2020). Unconscious biases drive disengagement and stagnation, and directly impact the unit’s culture and effectiveness – compromising recruitment, retention, and morale of highly skilled members (Anand & Winters, 2008; Atewologun et al., 2018; O’Mara & Richter, 2006).

Military Leader Responsibilities

Senior leaders are the strategic decision makers in the DoD and have a direct impact on unit cohesion, mission effectiveness, and total Force readiness. Senior leaders are expected to increase accurate decision making, promote fair and equitable policies in commands, promote fair and equitable Uniform Code of Military Justice (UCMJ) actions, and enhance cross-cultural operational strategy. Senior leaders are further expected to acquire strategies that assist them in their commitment to fair and equitable leadership, as ultimately reflected in their decision and

policy making, with the overall goal of maximizing cognitive diversity and, hereby, total Force readiness across the DoD.

Impacts

The effects of unconscious (and explicit) biases range from the individual level to the organizational level to the societal and cultural levels. Large-scale meta-analyses support the case that unconscious biases may be one plausible cause of discriminatory behavior, with correlations averaging about .165. Even small, but widespread effects can have devastating consequences; in these meta-analytic reviews, unconscious biases predict decisions and behaviors weakly but reliably across a variety of domains (for reviews, see Greenwald et al., 2009; Jost et al., 2009).

Impact on the Individual

Targets of Bias. Individuals who are the target of unconscious bias may be adversely affected in a variety of ways. This report highlights a small sample of such adverse effects below.

Minority Stress. Prejudice and discrimination, intentional or unintentional, are fundamental causes of negative health outcomes for minority group members (Williams et al., 2019). For example, African Americans have a lower life expectancy than Whites, and they have the highest rates of hypertension than any other ethnic group (Bravemen & Gottlieb, 2014), all while controlling for socio-economic status. The experience of stress brought about from a variety of sources related to unconscious (and conscious) bias plays a central role in many of these differential barriers to well-being, even the point of being considered traumatic in some cases (Bryant-Davis & Ocampo, 2006).

Alienation. Leaders' biased decision making can damage morale by making members feel alienated. Additionally, biased decision making can create a culture that compromises the

willingness of marginalized group members to share ideas or to express dissenting views. A healthy sense of belonging is important for well-being, job satisfaction, and retention, among many other positive outcomes, while a sense of isolation or rejection can lead to a host of negative outcomes such as a lowered sense of belonging, lowered self-esteem, and more (Williams & Nida, 2011).

Pressure to Conform to the Majority. The effects of unconscious bias are particularly impactful for low-ranking individuals from demographic minority groups. These members experience much higher pressure than their non-minority colleagues to self-monitor, assimilate, and socially conform as prerequisites for professional advancement (Anderson & Gustafsborg, 1999; Ely, 1995; Hewlin, 2009; Phillips et al., 2009).

Coping with Bias. In the face of real or perceived bias or discrimination, one coping strategy employed by stigmatized group members is *psychological disengagement*, “a defensive detachment of self-esteem from outcomes in a particular domain, such that feelings of self-worth are not dependent on successes or failures in that domain” (Major et al., 1998, p. 35). For example, in the face of continued biases among leadership or others, a military member may come to fear poor performance or evaluations in a particular area of work or opportunity and may then psychologically prepare for failure by de-emphasizing the importance of success in that area. This can be accomplished through disidentifying with the domain altogether. Another coping strategy in the face of repeated exposure to unconscious or other bias is *behavioral compensation*, which is how people behave when they expect they might encounter bias or discrimination. In this case, marginalized group members may feel the need to work twice as hard as others to compensate for the added burden of potential bias and discrimination (Miller & Kaiser, 2001).

Each of the above outcomes of being a target of bias can effectively create a “chilly climate” for marginalized group members, which can undermine effective performance, lower job satisfaction, lead to retention difficulties, and more, all thereby decreasing Force readiness. ***Those Who Employ Bias.*** Unconscious and other biases not only affect those who experience them but can dramatically impact those who unwittingly employ such biases. This report reviews a few of these outcomes below.

Interaction Anxiety, Discomfort. Even individuals who value being non-prejudiced can unwittingly experience prejudicial thoughts, discomfort, anxiety, or even fear when interacting with others who represent socially stigmatized groups (Devine, 2015). Researchers theorize that this interactional anxiety occurs because, when an individual who holds an unconscious attitude that directly contradicts their sincerely held values and beliefs becomes aware of the bias and the discrepancy, the discrepancy can threaten their self-identity and make them feel guilty and anxious (Monteith et al., 2002). This guilt may lead to avoidance of the stigmatized group but may also motivate individuals to work toward changing themselves (Amodio et al., 2007; Devine, 2015).

In addition to the experience of anxiety that can come to those who discover a biased response seeping through an otherwise egalitarian worldview, actual interactions with “outgroup” members can also often be besieged by stress and anxiety, and subsequent compensatory responses (Trawalter et al., 2009), divergent goals and assumptions (Bergsieker, et al., 2010), and can result in feeling drained cognitively and emotionally (Richeson & Shelton, 2007). Research shows, for instance, that interracial interactions activate concerns for Whites of appearing prejudiced while racial minorities fear or anticipate experiencing prejudice or confirming stereotypes (Richeson & Shelton, 2007). Many White individuals seek to be liked

during interracial interactions, whereas African American individuals seek to be respected and viewed as competent (Bergsieker, et al., 2010). These activated concerns and divergent goals then lead to physiological arousal and anxiety, which in turn engages self-regulatory processes, which may then lead to depletion of executive attentional control, cognitive depletion, and negative affect (Richeson & Shelton, 2007; Trawlater & Richeson, 2006). This, in turn, provides fertile ground for the growth and use of more unconscious biases during the interaction. Such anxiety-ridden interactions may also lead to attempted compensatory responses such as freezing, avoidance, and overcompensation (Trawlater et al., 2009). These many interaction challenges often result in divergent feelings and perceptions of the exact same event or interaction (e.g., Bergsieker et al., 2010).

Micro-behaviors, including Micro-affirmations / Micro-aggressions (Incivilities).

Micro-behaviors are subtle statements or gestures—such as facial expressions, tone of voice, posture, word choice, or speech disruptions—that people often do unconsciously but that convey important underlying meaning to an observer or recipient, including impacts that can damage interpersonal trust. Individuals engage in micro-behaviors automatically or spontaneously, almost always before they are aware that they are doing so (Devine, 2015). Micro-behaviors can be positive (e.g., smiling or nodding one’s head in agreement), yet the negative behaviors (incivilities) (e.g., disrupted speech, increased physical distance, or rolling one’s eyes), disproportionately impact minority group members (Cortina et al., 2013). In the workplace, such incivilities might include ignoring people’s work-related ideas and suggestions, interrupting people while speaking, and making disrespectful remarks. Despite these behaviors being “micro” or subtle in nature, they can have adverse effects on people in the workplace. Research indicates that higher incidents of microaggressions are related to impaired work performance,

decreased job satisfaction, increased stress, and increased intention to quit one's job (Lim et al., 2008; Williams, 2021).

Impaired Decision Making. Unconscious biases can be a type of logical fallacy when they are based on pre-existing beliefs, attitudes, and assumptions about people and groups that people (bias holders) apply to pre-judge others (bias targets) in the absence of direct personal experience or individual information about the targets (e.g., stereotypes). Understood in this way, social biases, like stereotypes, can compromise mental accuracy, lead to erroneous decisions, and inadvertently enable and reinforce prejudice and discrimination, such as when people rely on biases as habitual mental shortcuts to assess individuals, groups, and social situations, regardless of whether they are consciously aware of doing so (e.g., Devine, 2015).

Fundamental Attribution Error (FAE) and Ultimate Attribution Error (UAE). Related to impaired decision making, the fundamental and ultimate attribution errors are forms of unconscious bias that can commonly impact leader decisions and workplace relations.

The fundamental attribution error (FAE) is a term used to describe people's failure to recognize the external circumstances that drive human behavior or people's tendency to underestimate the degree to which external causes influence individual behavior. The ultimate attribution error (UAE) takes this biased judgment process to the group level such that the UAE occurs when people assume their own group's negative behavior can be explained by situational factors, but similar negative actions by members of other groups are due to their personal characteristics (Pettigrew, 1979). Similarly, positive outgroup behaviors are often dismissed as due to special advantages, luck, or unusual characteristics of the situation.

Road rage can illustrate attribution errors. When a driver makes a mistake, such as by speeding and cutting off someone in traffic, the drivers around them often assume that driver is

aggressive, selfish, unfocused, or simply a poor driver, rather than attributing the mistake to potential external factors, such as an emergency in that driver's life that they are rushing to fix.

Another example of FAE includes so-called white lies. When individuals catch someone exaggerating, even about an inconsequential matter, they tend not to trust that person because they attribute this behavior to the person's fundamental character: dishonesty. In contrast, when individuals tell a white lie, they tend to justify it by emphasizing mitigating situation factors, (e.g., they were just trying to be polite, they needed to protect themselves, or they thought it would make for a more entertaining story).

In business ethics, FAE also describes the tendency of people to attribute other's negative behaviors to personal or moral failures, while, in contrast, tolerating such behaviors in themselves as actions resulting from externally constrained choices.

In short, the result of the UAE/FAE is that the favored ingroup benefits from biased thinking whereas the outgroup is negatively affected. As this report highlights below, leadership decision making may play a disproportional role in perpetuating unintentional bias to the point of differential impact, when not prevented or minimized.

Impact on Groups and Organizations

Unconscious biases also have large-scale, adverse effects on units and the organization at large:

Unit Level. Unconscious biases may drive disengagement and stagnation, and directly impact the unit's culture and effectiveness – compromising recruitment, retention, and morale of highly skilled members (Anand & Winters, 2008; Atewologun et al., 2018; O'Mara & Richter, 2006).

Compromised Unit Cohesion and Morale. Leaders speaking or acting based on their unconsciously held biases can damage trust and relationships among their members, resulting in

lower unit cohesion and morale (Fish et al., 2020). Additionally, biases can drive disagreements that impact members' willingness to work cohesively.

Organizational Level. Unconscious bias can impact the organization by impacting recruitment, interviewing, hiring, mentoring, retention, evaluation and promotions, policy implementation and enforcement, and more, all of which have profound costs for any organization, including the DoD. Below, this report reviews a representative sample of these pernicious effects of unconscious bias.

Recruitment, Hiring, and Evaluation/Promotion

Overview. Leaders' biases can lead to inaccurate interpretation of performance and appraisals of behaviors and result in discriminatory workplace behavior (Ziegert & Hanges, 2005), e.g., bias in recruitment, hiring evaluation, and promotion processes (Holt & Davis, 2022). Very strong evidence suggests that many standard hiring and promotion practices, largely as a result of unconscious/unintentional biases, result in disparate racial, gender, age, and sexuality outcomes (see Greenwald et al., 2022). Many institutions and those in leadership maintain that they do not discriminate because they use the same standards to recruit, interview, hire, retain, and promote all their personnel. Nevertheless, abundant research evidence suggests otherwise, with subtle biases being likely inputs into disparate outcomes for marginalized group members (Segrest Purkiss et al., 2006). For example, Dovidio and Gaertner (2000) examined hiring decisions using resumes that were identical other than the race of the applicant. The credentials and experiences were structured to be weak and ambiguous (mediocre), or strong in terms of the job requirements. Hiring rates were similar for Black and White applicants when their credentials were weak or strong – that is, clearly qualified or clearly not. However, when the applicants' credentials were ambiguous – that is, when the applicants' met some of the criteria, but not

others, or did so moderately well – hiring rates were much higher for White applicants than for Black applicants (see Figure 1).

Such an outcome may be considered driven at least in part by unconscious/unintentional bias because the person evaluating the applications and making the hiring decision may be unaware of this differential approach to the applications in that a simple, easy justification of mediocrity springs to conscious awareness, rather than racial animus. Therefore, even those with conscious, egalitarian, non-prejudiced views may unwittingly engage in discriminatory behaviors all while maintaining their positive self-image as fair-minded and unbiased. In short, unconscious biases may be particularly strong in the very situations that often occur in complex organizations (unclear, ambiguous, rapid situations) and among those responsible for making complex decisions.

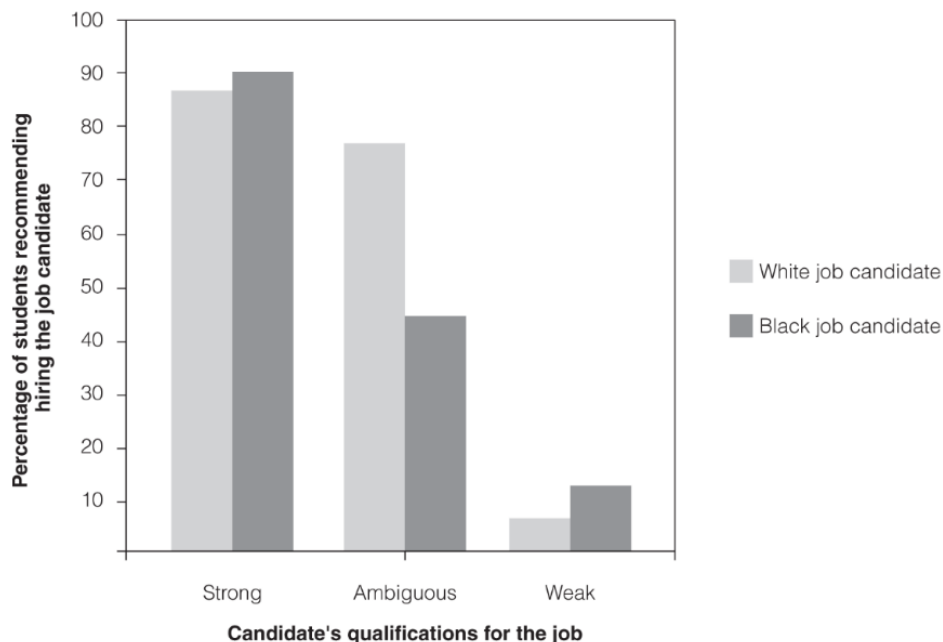


Figure 1. Hiring rates for Black versus White job candidates developed by Dovidio and Gaertner (2000).

Recruitment: It's who you know. Subtle, unconscious biases may unintentionally work against minority group members at the earliest stage of hiring and promotion – at the recruitment stage. For example, many companies use and highly value word-of-mouth as a recruitment strategy for both initial hiring and for promotion, particularly at the higher levels of management and leadership (see Van Hoye, 2014 for a review). For diversity and inclusion purposes, however, such a strategy is ripe for unintentional biases to take root. White cis-gender men still dominate the highest-level positions in virtually all sectors (including the military) and because much of society is still largely segregated, people are more likely to know well others of similar demographic characteristics (see Gino, 2017; Lu et al., 2020). Thus, other White males tend to get referred, thereby resulting in a bottleneck in the pipeline for such positions for members of marginalized groups. In sum, unconscious biases may impact individuals and an organization as a whole from the very beginning of a cycle by creating a pernicious effect on the recruitment process.

Application Process. The work by Dovidio and colleagues discussed in the overview of this section is but one of many examples of how implicit bias unwittingly biases decisions during the application process. A seminal study in this domain is that of Bertrand and Mullainathan (2004) who used an employment-audit methodology to ascertain the impact of subtle bias during the application process. Specifically, they sent out 5,000 fictitious resumes in response to 1,300 job-ads in Chicago and Boston. The resumes varied by race of the applicant (African American or White), applicant name (African American- or White-sounding names based on census data of most used names by group), and quality of the resume (some low, some high). Overall, regardless of the quality, resumes with White names received 50% more callbacks for interviews

than resumes with Black names. The quality of the resumes had little effect on callback rates for Black applicants but did for White applicants. Highly qualified Black applicants were called back less often than low qualified White applicants. Large-scale meta-analyses show that these same effects have held up over time and across numerous countries (Quillian et al., 2017), and even when controlling for gender, education level, job categories, and labor market conditions.

Such patterns of discrimination led other researchers to investigate how potential applicants from marginalized groups planned to go about the application process. Their results showed that over two-thirds of their sample engaged in “Whitening the Resume,” or “Americanizing” themselves wherein they used nicknames or anglicized their names, downplayed or avoided ethnic affiliations and commitments, and other similar strategies in order to “assimilate” and “send reassuring signals of conformity to the white [sic] majority” (Kang et al., 2016, p. 500). This group then sent matched pairs of “whitened” and “unwhitened” resumes to employers for real job ads matching the required qualifications. The “whitened” resumes led to substantially more callbacks than the “unwhitened” ones, and the effect was particularly large when the applicants “whitened” both their names and their experiences. As Jennifer Eberhardt (2020) puts it when describing such results,

The employers with hiring powers are probably not bigots, trashing black [sic] resumes and crossing off Asian names. But they are part of a process that is skewed toward prioritizing a comfortable fit and away from valuing differences. They are practicing in-group favoritism rather than out-group derogation. And that’s the sort of mind-set that allows bias to flourish, under the radar and unchecked. (pp. 269-270)

Ample evidence suggests a very similar pattern of results for women and sexual minorities.

Bias During Interviews. If people from marginalized groups get past the recruitment and application phases, they still face the potential for unconscious biases to have an impact during the interview process. A seminal study by Word and colleagues (1974) illustrates such impacts. In the study, White students were trained to interview applicants for a job. They interviewed either an African American or a White applicant for a job. When the applicant was African American, the interviewers unwittingly sat farther away, made more speech errors, and terminated the interviews 25% sooner than when the applicant was White. In a follow-up, interviewers were trained to treat White applicants in the same manner interviewers had treated either the White or African American applicants in the first experiment. Independent judges viewed videos of the interviews and rated those who had been treated like the African American applicants as more nervous and less effective than those treated like the White applicants (see also Segrest Purkiss, et al., 2006). Similar studies have replicated this work with real, experienced personnel interviewers, with female applicants, and with lesbian/gay applicants (see, Hebl et al., 2002; Woodzicka & LaFrance, 2005).

Disturbingly, even if no discrimination is apparent during an interview, good evidence suggests that interviewers' *memories* of the interview change in a stereotype-assimilative manner over time. For example, experiments show that when using highly structured interviews, there was no statistical difference between the desire to hire African American and White applicants immediately after an interview (Frazer & Wiersma, 2001). However, when interviewers were a week later given the interview questions and asked to recall the performance of the applicants (and were even given their own notes), African American applicants were remembered as having given less intelligent answers, when in fact, their answers were identical because the applicants were trained interviewees. The implication is that people's memories of events may be

influenced by unconscious biases even if their immediate decisions and behaviors are not. In sum, unconscious biases are well known to have the potential to differentially impact those from marginalized groups during the interview process.

Mentoring. Unconscious biases may impact whom people mentor, as well as the mentoring relationship (Hinton et al., 2020). Unconscious biases may impact how people communicate or interrupt mentee's intentions, thus damaging the trust necessary for an effective mentoring relationship.

Evaluation / Promotion. Leaders' biases can lead to inaccurate interpretation of performance and appraisals of behaviors and result in discriminatory workplace behavior (Ziegert & Hanges, 2005), e.g., bias in promotion processes (Holt & Davis, 2022). Within the workplace, even when minority and majority-group member employees receive the same objective performance evaluations, minority-group employees are promoted at a lower rate (e.g., Roth et al., 2003). While this differential promotion rate occurs for many reasons, one among them is that the standards used when forming judgments and evaluations are *implicitly/unconsciously* shifted in a stereotypic manner. Such unaware shifting results in a form of bias when evaluating a person as doing a good job for an X-category member (e.g., woman). For instance, a father might be considered a "very good" parent for performing far fewer parenting behaviors than a mother would to earn the same evaluation. That is, the father earns a "very good rating," because he is viewed as "very good, for a father." In terms of the potential of shifting standards to impact individuals and leaders within the military, research has shown, for instance, that HR directors and other leaders/managers subjectively think of the same (objective) starting salary as higher for Black employees than White employees and this correlates with later objective raise amounts (Weeks et al., 2021).

In terms of evaluation and consideration for promotion, decision-makers attributions for success and failures can matter. For instance, attributions for successful performance may differ by gender and race. Greenhaus and Parasuraman (1993) examined attributions made about 1,628 managers (half of whom were Black, half White) by their supervisors in U.S. companies. Attributions of ability were more often made for men than women and were more often made for White than African American managers. Successes by female and other minority employees were often attributed to either temporary effort and/or of them being more likely to receive extensive help and guidance from others.

In sum, even when people believe they are basing decisions on objective criteria, subjectivity and unconscious biases have been shown to readily seep into their decisions.

Policy. Discriminatory biases can become integrated into organization's practices and policies that impact members (Payne & Hanney, 2021), e.g., grooming standards.

Large Scale Costs. Leaders' biases can unconsciously influence personnel decisions – resulting in unfair decisions, which impair equitable selection, merit-based promotion, and judicial punishment (Marrone, 2020), many of which are detailed above. When people in positions of power and authority rely on biased decision making, it can have far-reaching consequences, from discriminatory hiring practices to poorer healthcare treatment or prejudice in the legal system (Agarwal, 2020). Indeed, substantial research has repeatedly shown that having more social power, such as leaders have, often increases stereotyping of their lower-power personnel. While the reasons for this effect are beyond the scope of this review, this “power-leads-to-stereotype-use” effect has been confirmed in a number of contexts (Goodwin et al., 2000) for implicitly held stereotypes as well as explicit stereotypes (Richeson & Ambady, 2003).

Adverse Impact on Work Engagement and Longevity. Individuals who perceive that they are the targets of bias within their organizations are more likely to be disengaged at work and to withhold ideas and creative solutions, and are significantly more likely to leave their employer (Chamorro-Premuzic, 2017; Perez, 2019; Pugh, 2022; Shore et al., 2011; Turnbull, 2016). In the military context, the withholding of ideas leads to less innovation and reduced cognitive diversity, thereby reducing total Force readiness (DoD Board on D&I, 2020). The loss of trained personnel also results in higher costs and decreased Force readiness (Marrone, 2020).

Theoretical Framework

A number of dual-process models exist to help explain the contradiction apparent when people value themselves as egalitarian and non-prejudiced, yet think or behave in a prejudicial manner, which is inconsistent with their values and sense of self. Such dual-systems cognitive models suggest that human information processing and decision making occur in two distinct, yet interrelated domains (see Figure 1) (see Kahneman, 2011; Smith & DeCoster, 2000;).

Kahneman's Dual Process Theory. Kahneman (2011) proposed a *metaphorical* model to help communicate how dual-process models operate. His model distinguishes between system 1, also referred to as "fast thinking," and system 2, also referred to as "slow thinking." While both systems are interrelated and adapted to support different types of mental tasks, each system is associated with specific benefits and risks (Kahneman, 2011). Likewise, in virtually any task or thought, both systems are involved, to more or less of an extent. However, for optimal performance, people need to understand how both systems work. This is especially true within the military context, where leaders are required to respond quickly as well as strategically based on emergent information.

System 1 / Fast / Heuristic Thinking:

- Thinking occurs rapidly and automatically, with no sense of subjective choice or voluntary control.
- This type of cognition allows humans to rapidly assess situations and react based on prior training and expertise.
- This system relies on heuristics (mental “rules of thumb”). For example, if a physician has recently seen a significant increase in strep throat at her clinic, when presented with most, but perhaps not all the same symptoms in a new patient, she may use availability to quickly surmise this new instance may be strep. Why? This possibly incorrect judgment is due to the use of the “availability heuristic” – that which comes to mind most effortlessly and quickly tends to be judged as more frequent or more likely to recur in the future. However, as with any heuristic, they may often be incorrect.
- Fast thinking relies on prior knowledge, mental associations formed from mere exposure, previous training, and existing expertise.
- While system 1 is fast, efficient, and does not require a lot of cognitive resources or effort, system 1 cognition is particularly vulnerable to bias and emotional influence.
- System 1 is more likely used when cognitive resources are limited, e.g., when tired, under stress, or multi-tasking, etc.
- System 1 use, given its relative automaticity, is often difficult for people to detect in themselves – it goes on in the background, and is often inaccessible to conscious awareness.
- An example of this type of automated thinking would be driving a car on an empty familiar road.

System 2 / Slow / Deliberative Thinking:

- This type of thinking allocates attention and cognitive resources to the mental activities that demand it, including complex computations, concentration, and other mental operations that individuals subjectively experience as "thought."
- System 2 tasks require time and mental energy, which can lead to delayed action.
- While system 2 is also vulnerable to unconscious bias, only the mental activities occurring in system 2 can help individuals understand, acknowledge, analyze, and potentially mitigate bias in their behavior.
- An example of this type of complex thinking would be the process of parallel parking.

Crucially, the mental activities required for understanding, acknowledging, and analyzing bias, creating bias mitigation strategies, and preparing to make intentional behavior change rely largely on System 2 cognition. Thus, in the military context, heuristics and standard operating procedures can be designed in ways to mitigate potentially negative impacts of bias during an instantaneous assessment, rapid response, and automatic action. However, the processes for designing those heuristics and procedures rely largely on System 2 mental activities: deliberative questioning, analysis, reflection, planning, and strategy.

Devine's Two-Component Process Model. An example of how this theory may manifest in unconscious bias can be seen in Devine's (1989) two-component process model of prejudice and stereotyping. In this model, stereotypes come to be infused into people's associative knowledge (system 1) largely passively through everyday cultural immersion (though they can be actively infused through teaching). For example, even low-prejudiced people know or are aware of the stereotypes of given peoples within their culture. This transmission occurs through many channels including, but not limited to, parents, friends, books, media, language usage, and much more. Importantly, these cultural stereotypes become embedded in people's

cognitive machinery long before they develop the rational reasoning skills to question them or bar them from taking root in their minds (that is, prior to having good command over “system 2”). For example, both Black and White children in the United States are aware of the stereotypes of other groups and exhibit forms of prejudice toward other ethnic groups by three or four years of age (Raabe & Beelman, 2011). In this model, stereotypes can become automatically, unconsciously activated (system 1) from associative memory upon mere encounter of, or thought of, a stereotyped target; only a more controlled, deliberative approach (system 2/conscious) may eventually dislodge those stereotypes from infecting people’s thought process and behavior (see Devine, 1989 for an overview).

***KEY POINT.** Importantly, dual process models help explain why even individuals who value being non-prejudiced can unwittingly experience prejudicial thoughts, discomfort, anxiety, or even fear when interacting with others from different social groups (Devine, 2015). People cannot easily or quickly “unlearn” a lifetime of socially and culturally embedded associations. To be human is to be biased. The use of heuristics (system 1; “mental shortcuts”) is a function of having a limited-capacity cognitive system to efficiently process a bombardment of information at any given moment. Therefore, it is most useful to think of heuristic-driven thinking or “bias” as a marker of history and context, wherein certain conditions can bring undesirable biases alive, and others can restrain or dampen them. Below, this review turns attention to some evidence-based ways to implement conditions conducive to bias restraint.

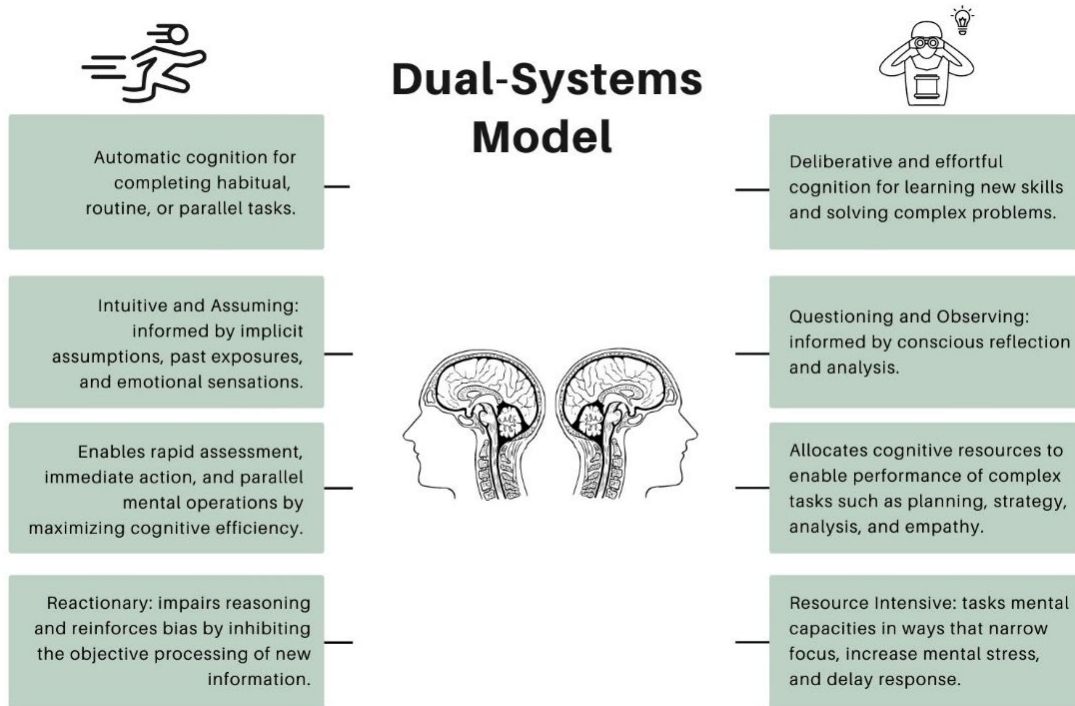


Figure 2. Dual Systems Model with System 1 (left) and System 2 (right).

Best Practices (and Important Caveats) for Potential Interventions

Expectations regarding mitigation of unconscious biases, particularly potential lasting debiasing effects on individual behavior and decision making, should be properly situated within the consensus, best available, high-powered evidence to date. Succinctly put, there are *no known* implicit bias reduction interventions that last beyond approximately 15 minutes to one day. High-powered meta-analyses and most leading unconscious/implicit bias scholars point clearly to the conclusion that there are currently no known, meaningfully lasting unconscious/implicit-bias interventions (Greenwald et al, 2022; Forscher et al., 2019; Lai et al., 2016). As arguably the world’s leading expert, Anthony Greenwald and colleagues (2022) recently noted, “Scholarly reviews of the effectiveness of group-administered anti-bias or diversity-training methods have not found convincing evidence for their mental or behavioral debiasing effectiveness” (p. 11). While a very few studies have apparently shown lasting (4 weeks) unconscious bias mitigation

(e.g., Devine et al., 2012), they have not replicated in more powerful studies even from the same lab (e.g., Forscher et al., 2017).

In light of the difficulties of durably mitigating individual-level unconscious biases, many current scholars and scientists argue that interventions should not focus extensively on changing individuals, but rather on changing institutional-level decision-making processes that tend to promote and reproduce inequalities. Calvin Lai, who has conducted extensive research on unconscious biases and mitigation strategies, noted during the 2021 proceedings of the National Academies of Science, Engineering, and Medicine, that strategies are not likely to be able to assuage implicit biases among individuals and should, therefore, keep those biases from shaping outcomes by adding a variety of external “guardrails” to the decision-making process (p. 10).

What the above caveats signal is not that unconscious biases are, in fact, immutable, or that the research community ought to respond with hands thrown in the air in defeat; rather a reasoned conclusion is that much more work needs to be done. Therefore, with the above caveats noted, below the report reviews some of these organizational-level “guardrails,” along with the most promising efforts at reducing individual subtle bias.

Self-Reflection and Self-Regulation Training (SSRT). One useful way to frame the existing literature on potential bias intervention strategies is under the umbrella of “self-reflection and self-regulation.” These terms describe practices of deliberately habituating self-regulation and self-awareness strategies to increase decision accuracy and to reduce spontaneous, involuntary, or inadvertently prejudicial behavioral and cognitive habits. The SSRT proposed here is a multi-phase effort that involves *awareness and education* (knowledge about unconscious bias and its impacts, for example) and *capacity-building skills* (skills which may help impede the use or impact of biases). Such training is rooted in the idea that Service members and leaders have a

responsibility to recognize and reduce the impact unconscious biases have on morale, cohesion, and readiness of the Force. The objective of SSRT is to create a culture comprised of members who act with intention to reduce the impact of unconscious bias by developing bias literacy and acquiring mitigation skills

Self-Reflection and Regulation Training (SRRT): Awareness and Education

An initial step toward mitigating any bias is to become aware of and knowledgeable about biases. Thus, military personnel need education on the origin, existence, persistence, and negative effects of such biases (Burgess et al., 2007; Devine, 2015). This includes an exploration of one's biases as well as psychoeducational materials on the science of bias and related cognitive processes. More specifically, Patricia Devine and colleagues have developed a program for "breaking the prejudice habit," which aligns well with conscious objectivity training. Part of the model includes education and awareness components wherein participants learn what biases are (including specifically unconscious bias), how such biases are measured, and some of the detrimental consequences of unconscious biases for marginalized persons (Devine, et al., 2012; Forscher et al., 2019). This review outlines the details of this approach later in this document. While education and awareness are important steps, caution must be taken in expectations because education alone is not a panacea for durable modification of unconscious biases.

Measuring Unconscious Bias. Part of awareness involves the measurement of unconscious biases. While there are numerous measures of unconscious or implicit bias, the most widely used measure is the Implicit Associations Test (IAT) (Greenwald et al., 1998). The goal of the Implicit Association Test (IAT) is to assess the extent of people's bias. Project Implicit at Harvard University provides IATs for numerous targets (race, age, gender, weight,

etc.), which can be used to help users identify and explore their unconscious preferences and mental associations (Devine, 2015; Devine et al., 2012; Forscher et al., 2017; Ratliff & Smith, 2022). These approximately 10-minute tests are free, anonymous, and available at any time with the aid of an internet-connected computer. While people's IAT results do not necessarily predict their future behavior across all domains, IATs can be a useful starting point to develop awareness. (See www.implicit.harvard.edu for more information.) Importantly, proper methods (Greenwald, Brendl, et al., 2022) and instruction and feedback (Gonzalez et al., 2018; 2021) are critical to the use of the IAT for training purposes.

SSRT: Capacity-Building Skills. Conscious objectivity training must move from awareness-only training into skill development and accountability, with the goal of building capacity to sustain long-term behavioral change. Below, this review highlights several evidence-based strategies designed to change implicit measures/unconscious biases, even if only modestly and briefly.

Motivation/Self-Regulation

Motivation. Research indicates that to affect long-term change, awareness and education must be combined with skills, and individuals must be motivated for change. Devine and colleagues (Devine & Monteith, 1993; Plant & Devine, 2009) argue that the motivation to break the prejudice habit stem from two sources:

- Learners must be aware of their biases and concerned about the consequences of their biases before they will be motivated to exert effort to eliminate them.

Learners also need to know when biased responses are likely to occur and how to replace those biased responses with responses more consistent with their goals. The content must stimulate motivation, and the messages must provide salient text, images, and language that encourage

Careful consideration and comparison to existing beliefs – leading to persistent attitude change, stronger resistance to counter messaging, and stronger commitment to behavioral change (Petty et al., 2009). Goal achievement can only occur if people have sufficient knowledge, skills, motivation, self-efficacy, goal commitment, and constructive feedback to achieve the goal (Seijts et al., 2004). Research suggests that automatic stereotypes and prejudice are controllable, and the perceiver's goals and intentions can matter (Blair, 2002).

Self-regulation. *The Self-Regulation of Prejudice Model* postulates that increased awareness that one is prone to responding in biased ways that conflict with one's personal standards and values gives rise to negative self-directed affect (e.g., guilt), which, in turn, can lead to the development of cues to circumvent the application of automatically activated biases (Monteith, 1993; Monteith et al., 2016). Self-regulation is based on a series of feedback loops wherein a discrepancy is recognized when a person engages in a biased or prejudicial thought or response that contradicts one's non-prejudiced self-image. Once this elicits guilt and self-reflection, cues are developed to help control these responses. Eventually, this can lead to the development of cues (internal or external) that can automatically inhibit prejudiced responses and replace them with appropriate ones. Thus, according to this approach, adverse outcomes of automatically activated bias can best be countered by increased awareness of one's biases and the motivated inhibition and replacement of their otherwise deleterious consequences (Devine et al., 1991; Devine & Monteith, 1993; Monteith et al., 2016). Over time, by developing cues, self-regulatory interventions can become an integral component among the prevailing comprehensive models to combat bias (e.g., Devine et al., 2012; Forscher et al., 2017).

Evidence-based Mitigation Skills

Evidence-based training includes teaching specific strategies that research has demonstrated elsewhere to be effective in reducing automatic and spontaneous prejudicial thoughts and behaviors (e.g., unconscious bias), albeit, only briefly (see Forscher et al., 2017; Lai et al., 2016 for comprehensive meta-analytic studies).

Key Caveats. (1) It is important to keep in mind that all of the strategies reviewed below have been reliably shown to reduce IAT scores or other measures of unconscious bias, *but only for a quite modest duration, such as 15 - 30 minutes, up to perhaps 24 hours*. When tested beyond that time frame, measures of unconscious bias tend to revert to baseline. As noted previously in this review, thus far, no studies have been able to reliably demonstrate interventions that produce durable changes to measures of unconscious bias (Greenwald, et al., 2022; Forscher et al., 2017; Lai et al., 2016). Nevertheless, many of these strategies have shown to reliably and durably modify a variety of measures that could reasonably be characterized as subtle, if not implicit, biases and behaviors. (2) Notably, training is ineffective when it focuses on educating trainees about unconscious bias theory but stops short of providing bias mitigation skills or when it suggests that stereotypes and biases are immutable, which can inhibit the adoption of such skills (Hausmann et al., 2014). Regardless, based on the extant evidence to date, expectation of *lasting* unconscious bias reduction beyond a short time (15 minutes to a day or so) is not currently warranted. Nevertheless, sustained interventions, particularly more comprehensive, and extended ones, have been shown to durably alter participants' subtle beliefs (perhaps ones outside awareness) and their explicit beliefs about and knowledge of bias/prejudice-related issues, which may in turn, positively influence their future behavior (Carnes et al., 2015; Devine et al., 2012; Forscher et al., 2017).

Evidence-Based Skills and Strategies:

- **Awareness.** *As highlighted above*, raising “awareness” about cognitive bias and discrimination may help set the stage for bias reduction when included as one component in a broader set of intervention strategies (Devine et al., 2012; Forscher et al., 2017; Régner et al., 2019; Sekaquaptewa et al., 2019).
- **Motivation.** As highlighted above, increasing “motivation” to mitigate bias and engaging in self-regulation strategies may also be a foundational component of an effective comprehensive intervention model (Kalev et al., 2006; Monteith et al., 2016; Pietri et al., 2017; Quillian & Midtbøen, 2021).
- **Decreasing “Cognitive Load.”** Biases are partially rooted within the processes of social categorization and stereotype activation and application. Once a social categorization has been made (e.g., race, age, gender), which tends to be automatic (Macrae & Bodenhausen, 2000), subsequent stereotype activation also tends to be automatic – that is no conscious thought is needed to make the stereotype accessible in mind and ready for use. One important influence that can determine whether a stereotype or bias is then applied is the availability of cognitive resources one has to inhibit such responses. A “high cognitive load” or being “cognitively busy” can occur through a variety of factors, including perceived time pressure to make rapid decisions, physical and mental stress, and situational distraction (e.g., multi-tasking, emotional distress) – the very situation often induced by busy, high-demanding leadership positions (e.g., Maher, 2018; Paas & Van Merriënboer, 1994). For instance, the need to make rapid decisions can impact executive functioning (which includes cognitive control), which is significantly reduced as stress levels and task demands are increased (Andersen & Gustafsberg, 2016;

Nieuwenhuys et al., 2012). Importantly, ample research shows that high cognitive load can increase unconscious/automatic application of a range of biases (Kahneman, 2011), including the reliance on stereotypic thinking, and can increase discriminatory behaviors (Gilbert & Hixon, 1991; Macrae et al., 1994). Thus, strategies designed to help decrease cognitive load make it less likely an individual has to resort to heuristics and more likely they can mitigate bias by improving decision making (Johnson et al., 2016; Marbin et al., 2021).

- ***Individuation.*** Individuation (gathering individuating information) is a strategy that relies on preventing stereotypic inferences by obtaining specific information about group members (Brewer & Miller, 1988; Fiske & Neuberg, 1990). Using this strategy helps people evaluate the target group members based on personal, rather than group-based, attributes. Individuation is intertwined with cognitive load in that people under high cognitive load pay more attention to stereotypic information whereas people under low cognitive load have the resources to flexibly attend to more individuating information. That is, new stereotypic-information is easier to integrate with existing (stereotypic) information when working memory (e.g., executive functioning) is limited (Macrae et al., 1994).
- ***Stereotype Replacement.*** One critical component of the self-regulation model of prejudice reduction (Monteith et al., 2002) and of other comprehensive models of prejudice reduction (Devine et al., 2012) involves learning to recognize stereotypical responses within oneself and society and to replace them with non-stereotypical responses. Using this strategy to address personal stereotyping involves recognizing that a response relies on stereotypes, labeling the response as stereotypical, and reflecting on

why the response occurred. The next step replaces the biased response with an unbiased response and explains how to avoid the biased response in the future (Monteith, 1993).

- ***Counter-Stereotypic Imagining.*** This strategy involves imagining in detail counter-stereotypic others. These others can be abstract (e.g., smart Black people), famous (e.g., LeBron James), or non-famous (e.g., a friend) (Blair et al., 2001). Mental imagery can influence the stereotyping process and may temporarily reduce implicit bias by practicing alternative associations (Blair et al., 2001).
- ***Perspective-Taking.*** This strategy involves taking the perspective of a member of a stereotyped group. Perspective-taking increases psychological closeness to the stigmatized group, which may ameliorate automatic group-based evaluations (Galinsky & Moskowitz, 2000; Todd & Galinsky, 2014). Perspective-takers also show more empathy for the person whose perspective they take than do those who remain objective (Vescio et al., 2003). Perspective-taking also leads to more positive attitudes about the outgroup overall. Perspective-taking may be particularly important for leadership given that several studies have shown that those higher in power within organizations tend to show less empathy toward subordinates (Keltner, 2016; Vescio et al., 2009).
- ***Situational Attribution Training.*** One relatively recent strategy that may show some promise in reducing unconscious bias turns the FAE/UAE around (see pp. 10 in this document) in that the intervention is designed to teach people to make situational attributions for the negative or stereotypical behaviors of outgroup members. Specifically, in this technique, participants get intensive training (480 trials in a single session) designed to strengthen the likelihood of participants considering situational attributions for behaviors performed by Black men that might otherwise be judged to

reflect negative African American stereotypes. For example, below a photograph is listed a behavior such as, “He failed to get his work done for the day.” Afterward, participants choose one of two explanations for the behaviors, one dispositional and stereotype-related (“He is an unreliable worker”) versus one situational (“His office is being painted, so he could not access his work materials.”) Those who receive the situational attribution training (are told to choose the situational versus the dispositional attribution) show lower implicit/unconscious bias scores on the person categorization task up to 24 hours later compared to controls (Stewart et al., 2010; 2022).

- ***Increasing Opportunities for Contact.*** This strategy involves seeking opportunities to encounter and engage in positive interactions with out-group members (Atewologun et al., 2018; Devine et al., 2012; Forscher et al., 2017). Increased contact may ameliorate bias through a wide variety of mechanisms, including altering the group’s cognitive representations or by directly improving evaluations of the group (Pettigrew, 1998; Pettigrew & Tropp, 2006). Contact alone, however, often does not result in prejudice-reduction. Thus, when these increased options for contact are provided, contact must ensue under certain conditions. These include (1) Equal status – contact is optimal when the groups have equal status within the contact situation; (2) Cooperation – group members should work cooperatively in the pursuit of shared goals; (3) Acquaintance potential – there should be opportunities for interacting group members to get to know one another as individuals; and (4) Institutional support – the intergroup contact and efforts must have the full support of authorities and leadership, and social norms of each must establish a clear expectation for less prejudice and discrimination. (See Pettigrew & Tropp, 2011 for more on each condition).

In summary, the evidence across single and multiple-experimental sessions for all the above skills-based strategies have yet to yield reliable evidence of their effectiveness *specifically* for reducing unconscious or implicit bias, as measured largely by the IAT, beyond a very short timeframe (15 minutes to a day or so). Nevertheless, this does not mean these interventions are not effective at mitigating a host of “subtle” or unintentional biases across a broader range of time. It means that any claims about their ability to mitigate unconscious bias must be tempered accordingly.

To reiterate, each of the above strategies can be framed within the leadership goal of increasing the effective decision making of leadership under the label of conscious objectivity training. A primary goal for senior leadership training is to emphasize how these ideas and procedures can be seen as transformational leadership strategies that can enhance morale, increase equity, and reduce discrimination across the command.

Comprehensive Interventions I: Individual-Level (primarily)

Comprehensive interventions seek to combine evidence-based mitigation skills while arguing that overcoming unconscious biases is a protracted process that requires considerable effort in the pursuit of a nonprejudiced goal (Bezrukova et al., 2016; Devine et al., 1991; Devine & Monteith, 1993; Monteith, 1993). Below, this review covers a few of the best-tested intervention attempts designed to change individual-level bias and prejudice.

A. Prejudice Habit-Breaking Intervention. Devine and colleagues developed a multi-phased intervention aimed at producing enduring change in biases and prejudice. The intervention is based on the assumption that unconscious biases and various prejudices are “like a habit that can be broken through a combination of awareness of implicit bias, concern about the effects of that

bias, and the application of strategies to reduce bias” (Devine et al, 2012, p. 1267). The initial test of the 12-week intervention showed enduring reductions in implicit bias as measured by the IAT (for 4 weeks) and positive changes on a variety of measures of subtle, explicit biases such as increased concern about discrimination in society and awareness of prejudice-relevant discrepancies in one’s own thoughts or behavior (Devine et al., 2012). Unfortunately, a later, much higher-powered replication attempt from the same lab did not produce enduring changes in measures of implicit/unconscious bias (Forscher et al., 2017). However, it did replicate many effects by corroborating a host of long-lasting positive effects on measures such as concern over bias or discrimination, sensitivity to bias in others and themselves, an increase in interracial interactions with relative strangers, and a greater likelihood to confront bias – the latter even up to two years later compared to baseline and control participants.

Given the successes of this particular intervention, this report describes the essential elements below as this intervention represents the best available evidence for how one might structure an intervention to more durably change biases. It also closely aligns with existing DoD policies and directives, and with DEOMIs development of Conscious Objectivity Training.

Overall, this intervention involves providing *education* about the existence, origins and consequences of unintentional bias. It induces *awareness* of biases by giving the IAT and providing individual-level feedback on those results. The intervention then teaches participants how biases can have widespread and detrimental outcomes for racial minorities. Lastly, it teaches participants how to use several potential mitigation strategies such as those covered in the preceding section (e.g., stereotype replacement, counter-stereotypic imagining, perspective-taking, individuation, and increased opportunities for contact).

More specifically, the latest test of the “breaking the prejudice-habit model” consisted of the following components. Baseline measures were taken of (1) concerns about discrimination; (2) internal and external motivation to control prejudice (Plant & Devine, 1998); (3) “shoulds, woulds, and discrepancies,” which ascertains how people believe they should and then would behave in various interpersonal intergroup situations; and (4) explicit attitudes toward African-Americans using a feeling thermometer. Participants were then randomly assigned to a control condition, wherein they took the Black-White evaluative implicit associations test (IAT) and were provided feedback on their results. This ended control participants’ treatment. Those in the intervention group took the same baseline measures and the same IAT. However, for those in the intervention group, IAT feedback was part of the educational semi-interactive slide show. As noted, participants were taught about what implicit biases were and the negative consequences of these biases. After the education section of the slideshow, intervention-participants received individualized feedback on their IAT results. In the next phase, the aforementioned bias-mitigation strategies were introduced, and participants generated examples of how they could use each strategy immediately after learning about each one. In follow-up measures (not at baseline), participants lastly completed assessments of how often they had race-related thoughts, how frequently they had interracial interactions with strangers, and they wrote briefly about their thoughts and interactions, as well as the frequency with which they used each mitigation strategy. As noted previously, although the results of this more statistically powerful experiment did not replicate the original intervention experiment (Devine et al., 2012) in terms of showing durable changes in measures of unconscious bias (IAT scores), this intervention-study did show lasting changes in several positive outcomes. Specially, results showed that at two weeks post-intervention, participants were more likely to (1) notice bias in themselves and

others, and society at large, (2) label such bias as wrong, (3), and have more interracial interactions with strangers. A full two-years post-intervention, participants were more likely to confront bias by writing comments disagreeing with a posted essay that advanced stereotypes (Forscher et al., 2017). See Appendix A or the following link for the specific materials used in the intervention: <https://osf.io/a3c8h/>.

B. *Interventions in the Field.* Very few studies have examined bias reduction interventions in real-world contexts. Those that have been conducted show very similar effects to those described for the “prejudice-as-habit” intervention studies. For example, participants at an all-female college and a geographically proximate coeducational college completed measures of implicit gender-leader associations at the beginning and the end of their first year (Dasgupta & Asgari, 2004). Those in the all-female institution showed implicit bias reductions, especially for those with the highest exposure to female professors, whereas there were no reductions at the co-ed institution. However, caution is warranted because there were only 52 participants in the study, and a lack of random assignment to conditions or locations precludes a causal interpretation. As another example, researchers examined a variety of outcomes of various gender-based diversity-trainings at multinational corporations on 3,016 employees across 63 countries. Results showed small increases in positive gender equality attitudes at session’s end, and on gender-equality behaviors measured across several months for the gender-bias training group, but there was no evidence for unconscious bias reductions. Similar findings come from large-scale studies in colleges (i.e., with 2,290 faculty) in which adaptations of the “breaking the prejudice-habit intervention” were employed across time (Carnes et al., 2015).

Research on various *group-administered trainings* has likewise produced no reliable effects suggestive of durable unconscious mitigation. For example, with data available from the

U.S. Equal Employment Opportunity Commission, Kalev et al., (2006) examined 708 U.S. companies that used a variety of diversity trainings. Based on results from the seven types of trainings evaluated across large samples sizes, Kalev and colleagues concluded that “Practices that target managerial bias through feedback (diversity evaluations) and education (diversity training) show virtually no effect in the aggregate. They show modest effects when responsibility structures are also in place... But they sometimes show negative effects otherwise” (p. 611). More recent reviews have come to similar disappointing conclusions (e.g., Leslie, 2019; Nishii et al., 2018; Paluck et al., 2021).

In sum, although the evidence *specifically* for unconscious-bias reduction remains unconvincing for larger-scale or intensive interventions, there is convincing evidence for lasting and important prejudice and bias-reductions across several measures.

Comprehensive Interventions II: Systems-Level (primarily)

Given the scarce research showing durable malleability of unconscious biases at the individual level, many scholars are turning their attention to the importance of thinking more of the potential effects of such biases within systems. This, in turn, alters the nature of the potential interventions from the reduction of individual-level biases to a more public health-like strategy, wherein the focus is on preventative measures designed to shield decision makers and marginalized group members from negative outcomes, such as the many described in the impacts section of this review (e.g., effects on hiring, promotion, pay, etc.).

Not only is such a change in direction warranted by the empirical evidence, it also coheres parsimoniously with theory. That is, dual process theories (reviewed previously in this document) postulate that individuals acquire stereotypes and mental associations about others from very early in life and those associations are constantly reinforced throughout a given

culture. Indeed, evidence of unconscious bias and other forms of prejudice can be seen even at the neural level (Rösler & Amodio, 2022). A major takeaway from the social neuroscience work is that unconscious biases and prejudice effects on perception and judgment are pervasive, often automatic, and difficult to detect or control (see Rösler & Amodio, 2022). Moreover, even when detected, such learning is difficult to update and slow to change as people are constantly exposed to biased information that reinforces these learned associations. Thus, as Rösler and Amodio (2022) conclude, “Interventions that rely solely on individuals to limit or control their bias may be least effective...Instead, the most effective interventions may be ones that prevent the activation or expression of bias in the first place with preventive organizational or procedural controls” (p. 1208).

Below, this report reviews a few initiatives aimed at disabling the path from unconscious biases to discrimination. For purposes of this review, it is not imperative to offer a detailed understanding of precisely how systems operate to affect individuals, but *guidance* is provided for how educating others about these disparate outcomes and intervention strategies may be beneficial for leaders and Force readiness. These systems or organizational-level intervention strategies may be particularly important for senior leaders who are tasked with engaging in transformational leadership and who may be responsible for implementing or changing processes and procedures across a variety of levels.

A Public Health Approach

Recently, top experts in the field of racism and other such social ills have recommended viewing these issues as a matter of public health (Greenwald et al., 2022; Paine et al., 2021). In other words, the aim is to move somewhat away from a singular focus on individual-level bias mitigation and more toward ways to interrupt the path from implicit or unconscious biases to

discriminatory outcomes. Two key aspects of this approach are (1) to engage in disparity finding and (2) to employ preventative measures.

One must first identify disparities before they can be addressed, and many discriminatory practices are not easily perceived and are often under-reported. However, many such organizational-level disparities can be readily identified within existing organizational data and practices. A key suggestion for leadership is to make disparity finding a consistent, embedded part of one's organization (see the list of questions posed on the bottom of this page). In terms of prevention, leadership can employ several empirically supported strategies, including decision blinding, wherein social category information about the person or people being evaluated is unknown to the decision-makers.

Another category helpful in ameliorating the negative impact of prejudice and discrimination in an organization are those of *discretion-elimination strategies* – another aspect of prevention. Discretion in organizational settings in terms of evaluation and personnel is well known to open the door widely to a path from unconscious bias to discriminatory practices (Heilman & Haynes, 2008). Several such examples were reviewed earlier in this document (e.g., recruitment, interviews, hiring, promotion, etc.). Examples of discretion-mitigating strategies include using (1) highly structured interviews, (2) objective testing of skills and abilities when psychometrically sound, (3) objective scoring of written material, and (4) and even applications of artificial intelligence. Each of these discretion-elimination strategies has been well researched and include several best practices. In their recent analysis of remedies for reducing bias, Greenwald and colleagues (2022, p. 33) offer a list of six questions organizations should use to determine their preparation to handle DEI concerns as they seek to impede the pathway from unconscious bias to differential treatment and outcomes. These include the following:

1. Does your organization have data that allow determination of whether its employees are receiving equal treatment?
2. Does your organization have data that allow determination of whether those to whom it provides services are receiving equal treatment?
3. Does your organization have someone with sufficient data-analysis skills to identify existing disparities and determine whether they are discriminatory?
4. Does your organization have an officer who has oversight for all DEI activities—someone who would know enough about your organization to answer the three preceding questions?
5. Has your organization ever identified a previously unrecognized discriminatory disparity?
6. Has your organization ever followed up on evidence for a discriminatory disparity by (a) implementing fixes expected to eliminate that disparity and (b) determining the extent to which the disparity was eliminated?

Education: Systems-Level Disparities.

Just as education and awareness are important initial steps in attempts to minimize individual-level unconscious biases, so too must education and awareness play a role in understanding how systems operate to perpetuate differential opportunities and outcomes for marginalized people.

To begin, a system can be defined as “... any collection of parts or elements that are connected in ways that cohere into some kind of whole” (Johnson, 2008). Thus, a system could be a board game, an engine, a classroom, a place of work, a courtroom, a police precinct, a government, a military, or an entire society or culture. Within social systems, there is

overwhelming data on group-based disparities across large segments of outcomes. As a few examples, consider (1) “Of the 41 most senior commanders in the military – those with four-star rank in the Army, Navy, Air Force, Marines, and Coast Guard – only two are black” and both are male” (Cooper, 2020); (2) Nearly 90% of Fortune 500 CEOs are White men and only 31% of board members of these corporations are female, with only 7% of board members females of color (McKinsey & Company, 2022); (3) At \$171,000, the median net worth today of a typical White family is nearly 10 times that of the typical Black family (\$17,150), and this gap has grown dramatically since the civil rights era to today, not shrank (Conley, 2010); and (4) Black, Hispanic, Latino, and other minorities have a substantial lower life expectancy, higher rates of asthma, hypertension, and diabetes (Walensky, 2021), are treated differently and less for pain (Trawalter & Hoffman, 2015; Pitts et al., in press), and chronically experience less access to medical and mental healthcare compared to White Americans (Alvidrez & Barksdale, 2022).

Highlighting these or other current, real-world disparities is powerful and potentially “mind-opening.” Highlighting these discrepancies may be enlightening, in part, because research shows a continued wide racial gap in perceptions of prejudice and discrimination, and ideas about the source from which these disparities emanate (Pew Research Center, 2016), with White Americans significantly underestimating the amount of discrimination directed toward Black Americans across a variety of situations compared to the perceptions of Black Americans. Likewise, White Americans consistently underestimate the racial pay, wealth, and opportunity gaps in this country. Importantly, far more White respondents (70%) in nationally representative polls believe that discrimination is more likely to come from and is a bigger problem based on the prejudice of individuals compared to those who believe discrimination is built into laws and institutions.

This belief that existing widespread racial disparities are more primarily due to the nefarious handiwork of prejudiced individuals rather than part and parcel of the systems in which people find themselves, is a strong indication that the individualism entrenched so firmly into the American psyche (values, worldview) effectively blinds many to the widespread, large, and on-going *systems-level* causes of racial, gender, and other disparities in the United States. This, in turn, provides an open vector for subtle, unconscious biases to infect important outcomes for marginalized individuals (see Charlesworth & Banaji, 2021). Therefore, to combat unconscious bias that comes from larger systems and to nurture optimal decision making among military leadership, education must be provided on these disparities and how they may operate insidiously within systems such as organizations, units, etc.

Summary of Key Features of Various Interventions

With the lack of evidence for the durable mitigation of individual-level unconscious bias understood, a number of features of various intervention strategies are indicative of at least brief implicit bias reduction, along with much more sustained reductions in various other prejudices, as well as increases in various positive outcomes. Below, this review briefly summarizes those key features.

Long-term approach. Single-session training may produce only short-term reductions in unconscious bias. Therefore, the best available evidence points to the use of longer trainings (e.g., 6-12 weeks) that are reinforced over time (Atewologun et al., 2018; Bezrukova et al., 2016; Devine et al., 2012; Forscher et al., 2017; 2019). This review strongly suggests that these more comprehensive models are among the best-known strategies to positively affect leadership and force readiness in terms of potential overall bias reduction.

Skills Application. Bias mitigation skills are taught and immediately implemented in the context of target tasks, e.g., hiring decisions (Agerström & Rooth, 2011; Lewis et al., 2019; Régner et al., 2019; Sekaquaptewa et al., 2019). Conscious objectivity training should equip learners with tools and strategies they can implement in their daily lives to address their thinking and the practices of their organization.

Change Oriented. The normalization of biased thinking can cause individuals to ignore or condone biased thinking (Duguid & Thomas-Hunt, 2015). In some instances, bias reduction trainings can even strengthen existing biases (Kulik & Robertson, 2008a; 2008b). Effective training educates individuals on the adverse impacts of biases while providing tools and motivation to change related behaviors (Devine, 2015; Devine et al. 2012). The goal is not only individual but systemic change (Payne & Hannay, 2021).

Considerations

Methods of Instruction

Conscious objectivity training should focus on developing systematic, longitudinal, and multi-pronged strategies to increase resilience to bias and to motivate widespread adoption of such strategies. Specifically, such training should *educate* forces on the existence and impact of unconscious bias, raise *awareness* about the negative consequences of cognitive errors and prejudicial behavior, equip trainees with *practical strategies* they will use to mitigate bias in their own behavior and decision making, and *motivate* them to insulate themselves and others from the negative consequences of their biased decisions and actions. With that goal in mind, expectations must be moderated specifically regarding unconscious bias reduction as measured by current methods (e.g., Greenwald et al., 2022).

Education. Most comprehensive intervention strategies involve some form of education that informs participants about the existence of, and persistent and negative impacts of, unconscious biases. These educational experiences may range from viewing engaging slideshows and guest speakers to participating in highly interactive discussions and active-learning situations wherein participants apply their knowledge to novel situations.

Awareness. Training should aim to modify and develop attitudes and perceived social norms (Tsai & Michelson, 2020). This process is best initiated via awareness and education on unconscious bias including its underlying cognitive mechanisms and its impact and effects (Burgess, 2007; Devine, 2015). The IAT may be utilized as a tool to identify and explore one's unconscious biases (Devine, 2015; Devine et al., 2012). Additionally, learners should also seek to address their consciously held values and explicit biases to account for the influence of explicit attitudes and consciously held beliefs on behavior (Oswald et al., 2013).

Capacity-Building Skills. Training will apply and teach evidence-based skills and strategies that research has shown to be effective in mitigating bias, such as pause-strategy, stereotype replacement (Monteith, 1993), counter-stereotypic imaging (Blair et al., 2001), perspective-taking (Galinsky & Moskowitz, 2000), and increasing opportunities for contact (Pettigrew & Tropp, 2006), among others. There should be opportunities to apply these skills so that learners can develop a sense of self-efficacy that they can successfully apply their newly adopted skills to recognize and address bias. These opportunities for action include making plans, implementing plans, and revising plans as necessary to apply knowledge and skills in everyday situations. Moving learners from motivation to action requires both self-efficacy and positive outcome expectations as well as deliberate practice of the desired behavior (Carnes et al., 2012).

Motivation/Value Alignment. Training should aim to increase trainee commitment to conscious objectivity, such as by establishing the incompatibility of prejudice and discrimination with military values and by introducing bias-mitigation strategies as skills to increase personal performance. Trainers should do the following:

- Emphasize how spontaneous, involuntary, or inadvertently prejudicial behavior can damage interpersonal trust and, thus, impair the warfighter's capacity to work within or to lead a team effectively.
- Link conscious objectivity to Service commitment by emphasizing military and Service values of fairness, equity, and merit, including by providing relevant historical or contemporary examples of why military non-discrimination policies exist.
- Educate members about the role that prejudicial mental habits play in enabling and reinforcing decision errors and about how such habits can impair accurate thinking and decision making.
- Motivate learners to make change by highlighting and promoting internal and external motivations for reducing unconscious bias. For example, an external motivator for acting without bias is to avoid the appearance that one is prejudiced toward others.

Modalities. Metinyurt et al. (2021) conducted a systematic review of published evaluations of workplace interventions on unconscious bias and its subtle manifestations in academic workplaces. Training was typically delivered over a two-hour period and had two major components, one to increase awareness and motivation and the second to build skills; trainings included a motivational component as well. All interventions provided information about bias-mitigating strategies, some in lecture format, with some utilizing group discussions and role playing. Some interventions used optical illusions to illustrate discrepancies between

reality and perceptions (Carnes et al., 2012, 2015; Isaac et al., 2016; Sweetman, 2017). All interventions showed increases in explicit awareness of biases post-intervention but most studies did not assess behavioral outcomes or long-term effects. Ideally, training should include multiple modalities and provide ample opportunities to apply newly acquired skills.

Recommended formats of training methods include lecture, interactive large-group discussions, small-group experiences, role-playing, and case studies. Scenario-based learning, which promotes authentic learning through real-world examples, is equally effective whether delivered in-person or via e-learning (Mehall, 2022) and should be utilized to provide learners with opportunities to practice bias mitigation skills.

The extant literature on intervention effectiveness strongly points to the adoption and adaptation of a model such as Devine's "breaking-the-prejudice-habit" intervention (see Appendix A and earlier in this document for a detailed overview)

Modes of Delivery. Researchers note that "Given that biased beliefs and attitudes can be resistant to change, 'one-time' trainings may fail to create changes that persist over time" (Metinyurt et al., 2021). In general, diversity training is most effective when integrated into a comprehensive organizational change effort as opposed to one-time training events (Ely & Roberts, 2008). Another rationale for training to occur over an extended period of time is provided by the "Spacing effect." Spacing the presented information over time allows for information to be presented and acquired in diverse contexts, which is conducive to learning outcomes (e.g., Glenberg, 1979; Kornell, 2009).

Training should be provided in a synchronous classroom setting, either live, virtual, or in-person, to allow for group discussions and small group activities. Virtual delivery accommodates commanders who cannot be absent from their posts for extended periods of time.

Virtual workshops are conducive to discussions and review of both peer and individual progress (Saghafi et al., 2014), although there is mixed-evidence for their effectiveness overall (Chang et al., 2019). In-person seminars support hands-on skills training, peer engagement, and spontaneous feedback (Saghafi et al., 2014).

Additionally, training should follow sound educational methodology, such as Gagné's (1985) Nine Events of Instruction with instructors implementing training using a myriad of processes and procedures to meet DoD training requirements. This training process allows learners to gain all the knowledge, skills, and abilities to meet mission requirements. Gagné's (1985) approach is associated with enhanced learning outcomes (Miner et al., 2015) and consists of these nine steps that instructors may facilitate in the following sequence:

- Gain student attention
- Inform learners of objectives
- Stimulate recall of prior learning
- Present the stimulus material (content)
- Provide learning guidance
- Elicit performance (practice)
- Provide feedback (performance correctness)
- Assess the performance
- Enhance knowledge retention and transfer to the job

Assessment and Evaluation. Assessment in the form of ongoing feedback is a vital part of the learning process. When undergoing unconscious bias training, learners rely on feedback from instructors and other group members. Ongoing and constructive feedback allows learners to achieve goals and to engage in self-regulation when they identify discrepancies in themselves

(Seijts et al., 2004). Additionally, students should be given time at the end of the lesson to reflect on their learning to process the learning materials and to increase metacognition.

Recommendations for Military Leaders

The military context is unique because members' personal and professional lives are interwoven, which introduces multiple influencing factors that define and direct behaviors and decision making (Kok et al., 2008).

Organizational Level:

- Develop concrete and objective standards and criteria for recruitment, evaluation, and promotion to reduce standard stereotypes (Biernat, 2012; Fiske & Taylor, 1991; Heilman & Alcott, 2001). For example, as of August 2020, the Army no longer includes official photos to the officer selection board in an attempt to reduce unconscious bias in the promotion process. This has resulted in improved outcomes for women and minorities (Rempfer, 2020).
- Utilize standardized criteria to assess the impact of individual contributions in performance evaluations (Heilman & Haynes, 2005). Standardizing interview processes and using predetermined criteria for assignments and evaluations can interrupt biases and hereby aid inclusion and diversity in military settings (Holt & Davis, 2022).
- Provide evidence-based unconscious bias training (see Devine et al., 2012; Forscher et al., 2017; Greenwald et al., 2022; Lai et al., 2016).
- Avoid perpetuating stereotypes when creating publicly shared materials, e.g., on websites or social media, and seek to promote messages of diversity and inclusion (Gouliquer et al., 2022).

Military Leader Level:

- Leaders will increase the unit's resilience to perceived bias through **PRIME-ing**:
 - **P**romoting psychological safety within the unit
 - **R**ole modeling bias-mitigation skills
 - **I**ncreasing interpersonal communication skills to gather individuating information
 - **M**entoring subordinates to increase opportunities for contact
 - **E**ducating leaders and subordinates
- When confronted with a target decision, leaders will increase objectivity in their decision making by **DECID-ing**:
 - **D**ecreasing cognitive load
 - **E**xamining assumptions
 - **C**reating counter-stereotypic imaging
 - **I**ndividuating
 - **D**eveloping perspective

In short, leadership may want to employ a form of Devine's (see Forscher et al., 2017) intervention, along with implementing various organizational-level bias-discrepancy strategies as noted above.

- Consider environmental factors that make biases more likely to occur, such as sleep deprivation (Alkozei et al., 2018), cognitive overload (Sweller, 2011), or stereotypical messages present in the culture (Devine, 2015). While these factors may be inevitable in the field, military leaders should be mindful when making decisions under those circumstances and, if possible, defer decisions to a later time.

Goals and Outcomes

Reducing the daily impacts of unconscious bias can increase performance for members across the military lifecycle (e.g., improved teamwork, cross-cultural inclusion, de-escalation of conflict, and design and implementation of equitable policies). The overarching goal of unconscious bias training is to build awareness, accountability, and responsibility on behalf of the member to recognize and reduce the impact that unconscious biases have on morale, cohesion, and force readiness.

Training will introduce knowledge about unconscious bias and will motivate members to integrate bias mitigation into their Service commitment. Training will achieve these goals by establishing prejudice and discrimination as incompatible with military values and introducing conscious objectivity as a vital capacity of Service commitment.

Training Objectives for Military Leaders:

- Role model bias mitigation skills; lead by example
- Lead teams fairly and objectively
- Increase leader capacity to make objective decisions
- Increase leader capacity to create and enforce fair and objective policies

Desired Training Outcomes across Levels of Responsibility:

- Increase team effectiveness
- Increase trust in leadership
- Improve unit and command climate
- Increase resilience, equity, and morale in units
- Reduce discrimination across the force

Research-Based Outcomes Expected from such Training:

- Enhanced Member Morale
- Unit Inclusion: improved inclusion via interpersonal skills, communication skills, cultural adaptability, and leading others.
- Team Effectiveness
- Force Readiness
- Cohesion: Team members who actively work to reduce the impact of unconscious bias can expect to experience decreased conflict and increased trust and cohesion, despite their sociocultural differences.
- Operational Performance: Reducing the impact of unconscious bias can improve organizational awareness by helping members understand the mission and functions of their own organization and how diversity connects to the mission. Additionally, this training can improve members' ability to operate effectively within the organization by applying knowledge of how the organization's programs, policies, procedures, rules, and regulations may either enhance or create barriers for representational diversity and inclusion.

Take-Home Message / Conclusion

Based on a systematic review of the highest quality evidence available, no known trainings or interventions have been shown to durably modify unconscious/implicit biases. As per DoD directives, it is imperative to educate military personnel on the existence of unconscious biases and their impacts on individual and organizational behaviors. In addition to that more specific education directive, based on the extant science, this report argues that any training regarding “unconscious bias” should cast a wide net to focus on “unintentional” bias, regardless of its psychological origin (unconscious or merely “subtle, but potentially “explicit” biases, etc.). The

theoretical “line” between these constructs is slim, and the pragmatic line between these biases is inconsequentially blurry to the point of nonexistence. The downstream, negative consequences of such biases – “unconscious/implicit,” “unintentional,” “subtle,” or otherwise – are tantamount, while the positive consequences of a focus on the broader construct of unintentional biases are more likely to circumvent the known potential negative outcomes of such biases. To best position the military to meet DoD objectives, the existing research evidence suggests employing a comprehensive strategy (e.g., a “Self-Reflection and Self-Regulation Training” which includes the “PRIME-ing” and “DECID-ing” strategies or adaptations of the “Breaking the Prejudice Habit” like intervention) along with education and awareness of systemic disparities for marginalized groups and of the ways that various institutional and organizational structures and processes may be changed to provide critical guardrails that deter the path from bias to decision making to perpetual disparities, all of which ultimately impair Force readiness.

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Activity Appendix

PRIOR TO ANY AND ALL USE OF THE ACTIVITIES IN THIS APPENDIX, PLEASE VERIFY THAT AUTHOR/OWNER PERMISSION IS OBTAINED WHERE NEEDED AND THAT USE OF THE MATERIALS DOES NOT RESULT IN COPYRIGHT INFRINGEMENT.

Appendix A: Overview and Materials from the “Breaking the Prejudice-Habit Model” (Devine et al., 2012; Forscher et al., 2017)

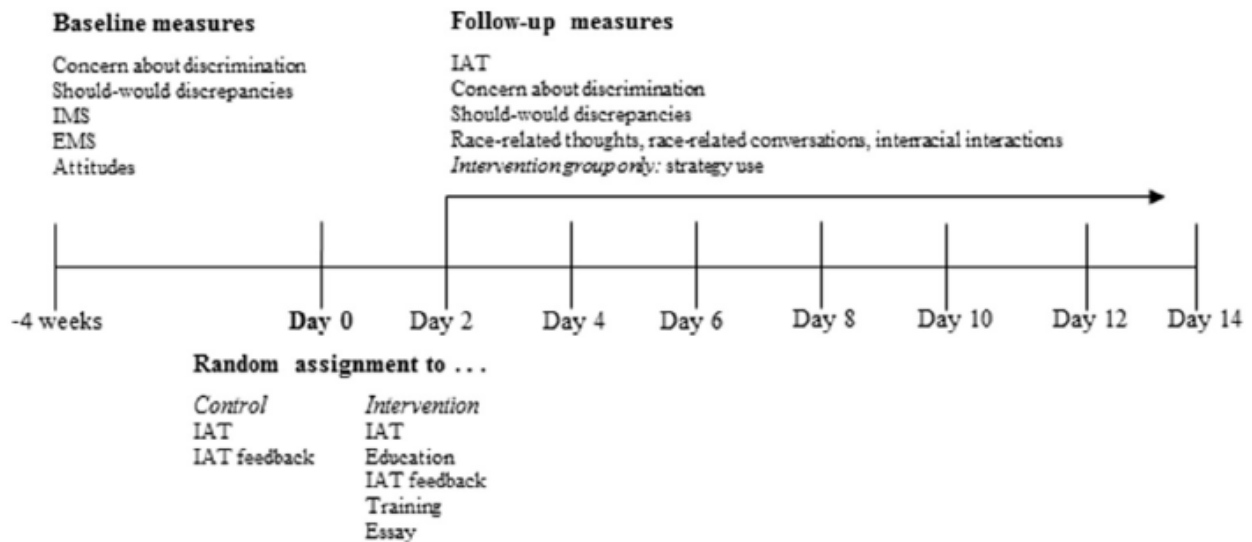


Figure 3. A diagram of the study timeline, procedures. (From Forscher et al., 2017).

Materials from Devine et al., (2012) follow on the next pages, and were obtained from The Open Science Framework at: <https://osf.io/a3c8h/>. Forscher et al., 2017 used much of the same materials, albeit the order of some differed from Devine’s original study (the material below).

These materials can be adapted for the military context.

Outline of New Intervention

Participants take the IAT

The measure that you just completed is called the Implicit Association Test (IAT). We will now show you a presentation that describes the following:

- 1) Some background that will help you understand the IAT
- 2) What the IAT measures
- 3) Some examples of behavior related to the IAT.

We will then tell you your own IAT score, after which we will describe some strategies that people can use to change their IAT scores and, consequently, behaviors related to the IAT.

We intend to roll out this experiment to a few high schools around Madison. Because high school students typically look up to college students, we would like to show the high school students short essays written by college students describing the material presented in this session and how it could benefit them. Therefore, at the end of this session, we will ask you to write a short essay, which will eventually be read by Madison high school students. You will find a pen and paper by your computer if you wish to take notes during the presentation.

Part of the following presentation will be presented using the speakers, so please put on your headphones now. When you are finished with the session, please inform the experimenter that you are done.

Background: Automatic race bias

Sometimes in everyday life, people experience spontaneous thoughts, feelings, and behaviors that are different from what they desire. Like bad habits, these spontaneous reactions can be extremely difficult to control because they occur automatically, before a person even notices them or has time to reflect on them.

These spontaneous reactions vary from person to person, depending on the specifics of where one grew up. However, because people are exposed to many of the same environmental factors, such as the same movies and television shows, many people experience the same unwanted reactions.

Imagine that it's past midnight on a Friday night. Pete and Joe are walking down State Street on their way home from a friend's house. The light is poor, and it's late enough that they only meet an occasional person on the darkened sidewalk.

Pete and Joe see a person in the distance walking toward them. As the person gets closer, Pete sees through the dim light that the person is a middle-aged Black man carrying a small duffel bag.

Pete thinks, “Maybe I should cross the street so this guy can’t hit me up for money. Whatever, Joe’s with me, and we can just ignore him if he asks.”

They keep walking and, as the man approaches, Pete starts to feel a little tense. He shifts a bag he was holding in his left hand to his right so that it’s farther away from the man. He feels even tenser as he makes eye contact with the man.

Nothing happens.

As the man passes, Pete thinks, “That was weird. He must not have wanted to ask me for money after all.”

As Pete and Joe walk away, Joe says to Pete, “Did you see that guy’s shoes? Those were the ones that I saw in the store the other day but were too expensive to buy.”

Pete feels confused. Why would a homeless man have expensive shoes? And why isn’t Joe surprised that the homeless man didn’t ask for any money?

Pete turns around, only to see the man getting into a BMW parked in a side street.

Pete thinks, “Wow, I guess I just assumed he was homeless. Why did I do that? Now that I think about it, he was wearing pretty nice clothes.”

In this example, Pete was quick to assume that the Black man was homeless. His initial expectation led to spontaneous, inaccurate thoughts and unwarranted tense feelings. If Pete would have seen this man for longer than 15 seconds, he may have realized that the man was not homeless because he was wearing nice clothes.

However, it was late at night, somewhat hard to see, and Pete had to make a quick judgment. This judgment turned out to be inaccurate.

Why did Pete jump to the conclusion that the Black man was homeless?

The origins of automatic race bias

Stereotypes that Black people are poor or homeless likely influenced Pete’s initial expectations about the man. Stereotypes are pervasive in our society, so we all learn about them whether we want to or not. For example, Black people are often portrayed as criminal or unintelligent in movies, TV shows, and in other mass media.

Because stereotypes are all around us, we can’t help but learn them and come to associate Black people with negative racial stereotypes.

The prevalence of stereotypic representations of Black people is likely greater than you imagine, and can sometimes be quite subtle. Consider this example from two different press reports following Hurricane Katrina.

Notice that the reports criminalize the Black man by describing his actions as “looting” food. On the other hand, the reports justify the White couple’s actions by describing them as “finding” food.

Can you think of specific times when you noticed the media portraying Black people stereotypically? Please briefly describe any instances that come to mind.

It is hard to avoid negative reactions to Black people when we are so frequently exposed to stereotypes in everyday life. We see them so often that they become firmly ingrained in our minds. Without intending it, we learn to associate Black people with negative stereotypes.

As a result, when people think about or interact with Black people, the negative stereotypes spring to mind, even among people who disagree with the stereotypes. Once in mind, these stereotypes can influence people’s thoughts feelings, expectations, and behavior.

In this way, stereotypes are like bad habits in that they can occur without thought or intention. Because people often don’t realize when stereotypes influence their reactions to Black people, avoiding the influence of stereotypes can be very difficult.

Now think back to the situation with Pete and Joe that we described in the beginning of this presentation. Why do you think that Pete automatically assumed that the Black man was homeless, despite a lack of clear evidence? Perhaps Pete’s judgment was influenced by the stereotype that Black people are poor and homeless. This stereotype may have led him to expect that the man was homeless solely because of his race.

How would you have reacted in Pete’s situation? Is it possible that you, too, would have been quick to think that the Black man was homeless?

The example with Pete demonstrates how one’s reactions can be racially biased without any awareness of the bias. If not for Joe’s comments about the man’s shoes, it is very likely that Pete would not have realized that his assumption that the man was homeless was inaccurate. These types of automatic associations can lead to expressions of racial bias that are so subtle that people often fail to detect the bias in their thoughts, feelings, and behavior.

Can you think of any times in the past where you had an automatic response that was influenced by stereotypes? Please briefly describe any instances that come to mind.

Measuring automatic stereotypes: The Implicit Associations Test

Recent work by social psychologists has found that the degree to which one has learned automatic stereotypes about Blacks can be reliably measured by the Implicit Associations Test (IAT). The IAT measures how easily you pair a White or a Black face with pleasant vs. unpleasant words. The idea underlying the IAT is that people find it easier to pair two concepts, such as Black faces and unpleasant words, if they are already associated in memory. Because stereotypes about Blacks are often negative, people who have learned stereotypes about Blacks

to a greater degree find it relatively easy to pair Black faces with unpleasant words than the reverse.

Think about your own performance on the IAT. Did you find it relatively easy to do the task when Black faces were paired with negative words and White faces with positive words?

If so, you are not alone.

Extensive research with people all over the country suggests that about 85% of all non-Black people in the United States show an anti-Black bias on the IAT. This means that most people favor Whites over Blacks at an automatic level, regardless of what they believe on a conscious level.

It may be hard to believe that a simple task like the IAT could measure one's automatic stereotypes. There are three main ways in which people question the validity of the IAT.

First, people often think that how they performed on the test was influenced by the order in which they did the pairings. Several studies show that bias favoring Whites over Blacks consistently occurs no matter what order the pairings are completed.

Second, some people feel that the IAT just measures more general associations unrelated to race that link the color black with evil and the color white with good. This occurs, for example, in Westerns where good guys wear white hats and bad guys black hats. This issue has also been investigated and the research shows that these general color associations are unrelated to performance on the IAT.

Third, people often wonder whether millisecond differences in reaction time on the task really matter in the grand scheme of things. This is an important question; after all, if IAT performance was unrelated to behavior in real-world situations, there would be no reason to care about the IAT. However, research suggests that performance on the IAT is related to a wide range of outcomes, from subtle things like thoughts and feelings during an everyday interaction, to behavior in high-stakes settings, such as interviews, hospital emergency rooms, and a police officer's beat.

Consequences of automatic stereotypes

Medical decisions

Recent studies have shown that White people are more likely to receive expensive and potentially lifesaving treatments than Black people suffering from the same symptoms. The extent to which treating physicians show a treatment bias favoring White people is related to their degree of bias on the IAT.

Police decisions

It is often reported that Black suspects are more likely than White suspects to be shot by police officers. In threatening situations where the suspect is behaving ambiguously, people speculate that automatic stereotypes may influence the decision to shoot a Black suspect.

The research evidence supports this expectation. In studies mimicking the split-second decision of whether or not to shoot a potentially threatening person, citizens and police officers alike are both more likely to shoot an unarmed Black man than they are to shoot an unarmed White man. They also fail to shoot armed White people more often than armed Black people. Furthermore, this shooting bias is related to bias on the IAT.

Employment decisions

Imagine how the activation of automatic stereotypes might influence an employer's initial evaluation of a Black job applicant and subsequent thoughts and feelings toward the applicant. Negative stereotypes might color the first impression of the applicant, leading to lower evaluations of Black applicants as compared to White applicants. Once again, the research evidence shows this to be true, and, once again, the degree of bias is related to bias on the IAT.

Everyday interactions

Physicians, police officers, and interviewers are not the only ones who show cognitive and behavioral biases. College students show biases in the way they interact with Black students compared to White students in everyday settings. These students show an avoidant interaction style, making less eye contact, sitting further away, showing more nervous behaviors, and cutting interactions short. Once again, the degree to which the students show these avoidant behaviors is related to bias on the IAT.

An important aspect of all these studies on the relationship between the IAT and subtle race bias is that the participants are unaware that they have acted with bias. In fact, many of the participants in these studies report that they did not want to treat Black people differently from White people and that they believed that acting with bias is wrong. Yet, despite the best intentions, the biases occur.

Recall that you completed an IAT at the beginning of this session. We will now calculate your IAT score and show you both your score and a short verbal interpretation of the score. Your score should be interpreted as the degree to which, at an automatic level, you showed a relative preference for White people versus Black people on the IAT.

Calculating . . .

Your IAT score is _____. This indicates that you have a ____ automatic preference for _____ people over _____ people.

We are interested in how you feel about your IAT score. We will present a series of emotion-related words. Please indicate the degree to which each word describes your feelings using a 1 (not at all) to 7 (very much) scale.

1	2	3	4	5	6	7
not at all						very much

calm
 angry at myself
 uncomfortable
 guilty
 friendly
 angry at others
 uneasy
 depressed
 happy
 embarrassed
 bothered
 satisfied with myself
 anxious
 frustrated
 annoyed with myself
 energetic
 regretful
 irritated at others
 disappointed with myself
 tense
 disgusted with myself
 threatened
 optimistic
 disgusted with others
 content
 low
 pleased with myself
 sad
 helpless
 ashamed
 relaxed
 self-critical
 good

Breaking the prejudice habit

In many ways, the research that we just reviewed is discouraging because it suggests that even people who want to treat Black people fairly can act in racially biased ways. This has led some researchers to explore whether it is possible to reduce biases resulting from automatic

stereotypes. Here there is some good news. If a few conditions are met, it is possible to reduce automatic race bias.

Specifically, people can reduce automatic race bias if they do the following:

- (1) Are motivated to overcome the bias
- (2) Become aware of their bias and why it exists
- (3) Are able to detect the subtle influence of stereotypes
- (4) Learn and practice strategies that help reduce automatic bias.

Being motivated to reduce prejudice and automatic biases is a necessary first step. Without motivation, people will be unlikely to expend the effort needed to eliminate the effects of automatic biases. Being motivated is a personal decision that people must make for themselves.

Even if people are motivated to reduce their bias, they still need to become aware of it and why it exists (step 2). Much of what we have discussed early in the presentation explains why so many people are affected by automatic bias, even when they believe that prejudice is wrong. In what follows, we outline how to detect the influence of automatic stereotypes (step 3) and describe strategies that, if learned and practiced, will help you rid yourself of automatic bias (step 4).

Detecting the influence of stereotypes

Before we can overcome the negative effects of automatic stereotypes, we must be able to detect stereotypical depictions of Black people in our environment and when our own responses are affected by these depictions. Detecting these biases creates the opportunity to do something about them.

Because our social environment plays such a large role in perpetuating stereotypes, we must first learn to detect biased portrayals, whether they occur in the media or in interactions with others. While we may not be able to stop how others portray Black people, we can choose how we react to those portrayals by recognizing when a biased portrayal occurs and expressing disapproval of it. As we demonstrated with the Hurricane Katrina news report, sometimes bias can be quite subtle, so we must be vigilant to detect this bias.

Equally important as the detection of bias in our external environment is the detection of bias within ourselves. This involves figuring out the situations in which we are most likely to be subtly influenced by automatic stereotypes and monitoring our responses in these situations. We must take similar steps to break other kinds of habits, like biting nails; to stop biting nails, we must figure out the situations that trigger nail-biting behavior.

After we have figured out how stereotypes are reinforced by our environment and when stereotypes are likely to pop to mind, we can work to prevent the influence of stereotypes by training ourselves to behave in different, unbiased ways. In what follows, we outline five strategies that research has shown to be effective at reducing automatic stereotypes, and, therefore, their influence on people's behavior. Practicing these strategies can help break the "prejudice habit."

Bias-reducing strategies***Strategy 1: Stereotype replacement***

Stereotype replacement involves replacing stereotypic responses with non-stereotypic responses. This strategy can be used in two contexts: when you detect stereotypic portrayals of Blacks in your environment and when you detect a stereotypic response within yourself. After the influence of a stereotype has been detected, this strategy involves the following:

- (1) Labeling the response or portrayal as stereotypical
- (2) Evaluating the situation to determine how the response or portrayal occurred and how it might be prevented in the future, and
- (3) Replacing the stereotypical response or portrayal with one that is non-stereotypical.

To go back to the story we presented earlier with Pete and Joe, Pete could have used this technique after he saw the man approaching him by recognizing that his feelings of tension were partly by stereotypes linking Black men to poverty and criminality. He could have then labeled his response as stereotypical, recognized that he jumped to a quick assumption, and replaced his feelings of tension with calmer feelings.

Please think of a situation in your everyday life in which you could use the stereotype replacement strategy and describe that situation below.

In a given week, how many opportunities do you think you would have to use the stereotype replacement strategy?

1	2	3	4	5	6	7
very few						very many

When you have the opportunity, how likely are you to use the stereotype replacement strategy?

1	2	3	4	5	6	7
not at all likely						very likely

To what degree do you intend to use the stereotype replacement strategy?

1	2	3	4	5	6	7
not at all						very much

Strategy 2: Thinking of counter-stereotypic examples

A second thing you can do after a stereotype has been detected is to think of examples of either famous or personally known people that show the stereotype to be inaccurate. For example, while watching a movie that portrays Black people as unintelligent, you could think of Dr. Martin Luther King, Jr., Barack Obama, Condoleeza Rice, Frederick Douglass, or intelligent, personally known Black friends or acquaintances. Thinking of counter-stereotypic people provides concrete examples that demonstrate the inaccuracy of stereotypes.

In our story with Pete and Joe, Pete could have used this technique by thinking about positive examples of Black people who are neither impoverished nor dangerous criminals, like Barack Obama. Or, he could think of a friend or acquaintance that counters Black stereotypes.

Please think of a situation in your everyday life in which you could use the counter-stereotypic examples strategy and describe that situation below.

In a given week, how many opportunities do you think you would have to use the thinking of counter-stereotypic examples strategy?

1	2	3	4	5	6	7
very few						very many

When you have the opportunity, how likely are you to use the counter-stereotypic examples strategy?

1	2	3	4	5	6	7
not at all likely						very likely

To what degree do you intend to use the counter-stereotypic examples strategy?

1	2	3	4	5	6	7
not at all						very much

Strategy 4: Perspective-taking

Perspective-taking involves imagining what it would feel like to be in another person's situation. By using this strategy, you can imagine how it would feel to have your abilities called into question or to be viewed as lazy and potentially violent on the basis of race. This strategy can be used either proactively, without any prompting from outside sources, or reactively, after a stereotypic response or portrayal has been detected. Perspective-taking, especially perspective-taking that occurs after the detection of a stereotypic response or portrayal, is very useful in assessing the emotional impact of stereotyping on others.

Pete could have used this strategy by thinking about what it would feel like to have others assume that he was dangerous or homeless based on his race. This strategy may have helped him realize the unfairness of automatic race-based expectations and assumptions.

Please think of a situation in your everyday life in which you could use the perspective-taking strategy and describe that situation below.

In a given week, how many opportunities do you think you would have to use the perspective-taking strategy?

1	2	3	4	5	6	7
very few						very many

When you have the opportunity, how likely are you to use the perspective-taking strategy?

1	2	3	4	5	6	7
not at all likely						very likely

To what degree do you intend to use the perspective-taking strategy?

1	2	3	4	5	6	7
not at all						very much

Our goal in this presentation was to explain how stereotypes are automatically activated, even among people who believe that stereotypes are wrong. We also explained how automatic stereotypes can be measured and how these stereotypes can lead to unintended discrimination. Finally, we explained how, through a combination of motivation, awareness, and strategies, people can reduce automatic race bias and break the prejudice habit.

Although we described the strategies separately, practicing one strategy can make practicing the others easier. For example, when seeking opportunities for contact with Black people, you can get to know Black people that you can use as counter-stereotypic examples. Likewise, individuating others by attending to their personal characteristics can help people identify situations in which they might otherwise have had stereotypes come to mind, allowing the replacement of those stereotypes with counter-stereotypic thoughts.

Over time, if the techniques are practiced, you may find that they require less effort and less time. When these techniques are well-learned, they may become automatic responses themselves!

As we mentioned at the beginning of this session, we plan to roll this program out to some high schools throughout Madison, and because high school students look up to college students, we would like to present the high school students with essays about the program written by college students. Please take some time to write an essay that describes what you have learned during this session and how it could benefit high school students. You may write as little or as much as you wish, but try to hit the major points covered in the session that you think are most important.

You have now completed the computer task. Please quietly let the experimenter know that you are finished. Also, let the experimenter know if you have any questions or comments about this project.

(The following is administered to both control and experimental participants after the participants complete the IAT)

We'd like to know a bit more about your recent experiences that are relevant to your thoughts, feelings, and behaviors regarding Black people. Please read the following questions and answer them as completely as possible. As you answer these questions, please consider the time since you last filled out this questionnaire (i.e., the past two days). Also remember that your responses are completely confidential.

Over the past two days, how many interactions have you had with a Black person? By "interaction" we mean any situation in which you have talked to or made eye contact with a Black person.

0 interactions 1 2 3 4 5 6 7 or more interactions

(Only shown if the person indicates that he or she has had an interaction) Please briefly (1-2 sentences) describe one of these interactions.

Over the past two days, how many times have issues relating to Black people come up during conversations with other people?

0 times 1 2 3 4 5 6 7 or more times

(Only shown if the person indicates that he or she has had a conversation about Black-related issues) Please briefly (1-2 sentences) describe one of these incidents where an issue relating to Black people was a topic of conversation.

Over the past two days, how many times have you had a thought related to Black people or issues relating to Black people?

0 times 1 2 3 4 5 6 7 or more times

(Only shown if the person indicates that he or she has had a thought relating to Black people) Please briefly (1-2 sentences) describe one of the situations in which you had one of these thoughts.

(Only shown to experimental participants)

We would also like to understand more about people's use of the techniques that we showed you during the lab session you completed. In the following questionnaire, you will be presented with a brief description of each strategy that you learned. Please report how many times, if any, you used each strategy. As you complete these questions, please consider the time since you last filled out this questionnaire (i.e., the past two days).

Stereotype replacement

When a stereotypic response has been detected, this technique involves labeling that response as stereotypical, evaluating the situation that generated the response, and replacing the response with a non-stereotypic response. This technique can be applied either to stereotypes that one detects in oneself or in society.

Over the past two days, how many times have you used this technique?

0 times 1 2 3 4 5 6 7 or more times

Thinking of counter-stereotypic examples

This technique involves thinking of an example of someone, either a famous or personally known, that counters a stereotype that one has detected in oneself or in society.

Over the past two days, how many times have you used this technique?

0 times 1 2 3 4 5 6 7 or more times

Individuating (instead of generalizing)

Stereotyping involves applying the same set of characteristics to all members of a group on the basis of their group membership. Rather than generalizing across group members, people can individuate them, going beyond race and attending to personal characteristics.

Over the past two days, how many times have you used this technique?

0 times 1 2 3 4 5 6 7 or more times

Perspective-taking

This technique involves taking the perspective of a Black person in the first person to see how it would feel to be judged based on stereotypes.

Over the past two days, how many times have you used this technique?

0 times 1 2 3 4 5 6 7 or more times

Seeking opportunities for contact

This technique involves modifying one's environment by seeking interactions with Black people or one's visual environment by watching movies or TV shows that portray Black people in non-stereotypic ways.

Over the past two days, how many times have you used this technique?

0 times 1 2 3 4 5 6 7 or more times

The following questions will present a series of statements that you may agree or disagree with. You may have seen and responded to these statements before, but your current reaction to these statements may be either the same as or different from your previous reaction. Based on how you are feeling right now, please read the statements and rate your agreement with them using the scale provided.

1	2	3	4	5	6	7	8	9	10
strongly disagree									strongly agree

1. I'm not personally concerned about discrimination against Blacks.
2. People need to stop focusing so much time and energy worrying about racial discrimination.
3. People make more fuss about discrimination against Blacks than is necessary.
4. I consider racial discrimination to be a serious social problem.

The following items concern your beliefs about Blacks. We would like you to respond to the following items based on the beliefs that you hold, regardless of whether the way you actually act is always consistent with those beliefs. As before, your responses may be the same as or different from what you have indicated before. Please indicate the degree to which you agree or disagree with each of the statements using the scale provided.

1	2	3	4	5	6	7
strongly disagree						strongly agree

1. I think that Blacks and Whites should have an equal opportunity to be hired by an employer.
2. I believe that I should not think of Blacks in stereotypical ways.
3. If I had a Black classmate, I should assume that he/she is just as capable of completing intellectually challenging tasks as my White classmates.
4. I should not feel uncomfortable about having a Black roommate.
5. I believe that I should never avoid interacting with someone just because he/she is Black.
6. I should not feel uncomfortable shaking the hand of a Black person.

Sometimes the way we actually respond in a situation is consistent with our beliefs, and other times we find ourselves acting in a way that is inconsistent with our beliefs. For each item below, we are interested in your initial, gut-level reactions, which may or may not be consistent with how you believe you should react. Once again, your reactions right now may be the same as or different from what you have indicated before. Please indicate the degree to which you agree or disagree with each of the statements using the scale provided.

1	2	3	4	5	6	7
strongly disagree						strongly agree

1. I would feel uncomfortable if I were the only White person in a group of Black people.
2. I would feel uncomfortable if I were assigned a Black roommate.
3. On occasion, I have avoided interactions with people because they were Black.
4. If I were an employer, I would initially hesitate to hire someone who was Black.
5. I sometimes have stereotypical racial thoughts.
6. If I were choosing a classmate to complete a difficult in-class assignment with me, I would be more likely to choose a White than a Black classmate.