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THE SCIENCE OF EQUALITY, VOLUME 1:

**ADDRESSING IMPLICIT
BIAS, RACIAL ANXIETY, AND
STEREOTYPE THREAT IN
EDUCATION AND HEALTH CARE**

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PART I

THE OPERATION OF IMPLICIT BIAS

Most whites, believing themselves to be non-racist, reasonably conclude that race has diminished in significance – and high-profile examples such as the race of the President confirm this belief. Yet people of color – particularly black people – often have a significantly different perception of the degree to which race affects their lives and opportunities. In a 2013 Gallup poll, 68% of African Americans and 40% of Hispanics stated that the American justice system is biased against black people, compared to only 25% of non-Hispanic whites (Newport, 2014). The mind sciences provide an explanation for both sets of beliefs – white people’s belief that they and most other whites are not “racist” and the belief of African Americans and Latinos that America continues to be biased.

A. AUTOMATIC PROCESSING OF STIMULI INTO CATEGORIES

It is well-recognized that human beings process the enormous amount of stimuli we encounter by ordering the environment through the use of categories (“schemas”) and automatic associations between concepts that share related characteristics (Tajfel & Forgas, 1981). This automatic ordering is a critical human function that makes processing of information more efficient and guides our reactions and behaviors in relation to our environment. Classes of stimuli are not static; we construct new schema as our environment changes. In the 21st century, for example, the category of “cell phone” allows us to respond appropriately to a small metal object emitting some sort of noise – a category which did not exist throughout most of the 20th century.

Just as categories can determine how we respond to objects, the construction of categories for people is the foundation for everyday social interaction. For example, kindergarten teachers automatically categorize people in their classroom on the first day of school into student and family member. The association of characteristics with the categories of “child” and “adult” makes this task instantaneous. Children quickly learn to respond automatically with polite attention to the person categorized as their teacher and to be extra quiet when the person called “Principal” walks into the classroom. The categories “student,” “teacher,” and “principal” perform important social functions that allow the school to function smoothly.

We often also associate an attitude – an evaluative valence – with a category (Eagly & Chaiken, 1993). For example, people may generally share the association of certain attributes with the category “teacher” – those who teach in schools – but hold quite different valences (warm feelings or cold feelings) toward teachers.

The automatic association of characteristics and valences with social categories performs an important social function, allowing us to respond appropriately to people fitting the definitional categories. However, social categories can be laden with

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definitional characteristics that are not neutral.

For example, in the 19th and early 20th centuries, the category “Irish” was associated with images of drunkenness and criminality – “stereotypes” (generalizations) which were far from neutral or definitional (Ignatiev, 2008). Although these stereotypes no longer have a hold on the culture, stereotypes about other racial and ethnic groups have proved more intractable. Stereotypes associating blacks, and to some degree Latinos, with violence, criminality, and poverty have been and continue to be constant in the media, even as these stereotypes are

outwardly rejected (Bobo, 2001; Eberhardt et al., 2004; Dixon, 2009).

In other words, relatively few people in U.S. society today believe consciously – i.e., explicitly – that all people who are black and Latino are poor and prone to criminality. Many more people, however, hold automatic associations of those tendencies when they see someone who they identify as black or Latino. Regular exposure to such representations in the media can result in inaccurate and hostile associations toward people who fit into those social categories.

Although many social categories are subject to stereotypes and negative attitudes, in this report we focus on implicit associations with currently stigmatized racial and ethnic groups. In this context, implicit racial biases can be understood to include automatic stereotypes and attitudes that result from repeated exposures to cultural stereotypes of different racial groups that pervade society (Richardson & Goff, 2012).

B. MEASURES OF BIAS

Social scientists have developed an increasingly sophisticated array of mechanisms for identifying and measuring the presence of automatic stereotypes and attitudes we consciously deny, or which fall beyond our conscious awareness.

The Implicit Association Test (IAT), developed by Anthony Greenwald and housed at Harvard’s ProjectImplicit.org, is one well-known measure (Greenwald & Banaji, 1995). The IAT measures whether there is a time difference between a person’s ability to associate a particular social category with concepts that reflect either stereotypes or attitudes. For example, the attitude-based race IAT measures the latency between a person’s association of black or white faces with “good” words (positive valence) and “bad” words (negative valence). While considered a reliable measure, the IAT is not akin to a DNA test – it is not a precise and entirely stable measure of bias in any single individual; rather it reveals patterns and tendencies among large groups of

people (Kang et al., 2010) and therefore can explain statistically significant differences in decision-making and treatment linked to race and other salient factors (Banaji & Greenwald, 2013).

Scientists are also beginning to use physiological tools to measure implicit responses to race, including functional Magnetic Resonance Imaging (fMRI) (Phelps et al., 2000), patterns of cardiovascular responses (Blascovich et al., 2001); facial

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electromyography (EMG) (Vanman et al., 2004), and cortisol responses (Page-Gould et al., 2008). These physiological tools provide additional insight into our reactions to race and ethnicity. For example, neuroscientists are using fMRI analysis to detect both the presence of implicit racial bias and the brain activity that occurs when a person is trying to control bias (Gilbert et al., 2012; Ochsner & Gross, 2008). The study by Gilbert et al. (2012) shows, for example,

that two distinct aspects of racial bias – implicit stereotyping and implicit evaluation or attitude – are mediated by different brain mechanisms.

C. IN-GROUP PREFERENCE VS. OUT-GROUP ANIMUS

Implicit bias is a result of the automatic, unconscious association of attributes with different groups, but at an explicit or implicit level, bias can also manifest as a result of comparatively positive preferences for one group over another. Social scientists refer to this phenomenon as “in-group” bias or preference (Brewer, 1999; Tropp & Molina, 2012). In-group bias is more likely to be explicit than is animus, but it can often be implicit as well. Whites who hold explicit in-group preference will rarely interpret their feelings as “racist” if they do not involve active animus against people of other races. Yet, when biases and preferences become translated into behavior, the result is the same: members of one racial group benefit relative to members of another.

Although we tend to think of racial discrimination primarily as treating a person or a group worse, treating a favored racial group better results in the same outcome (Reskin, 2000). For example, studies have shown that whites generally will not overtly rate blacks negatively – they will simply rate similarly situated whites more positively (Dovidio & Gaertner, 2004). Obviously, to the extent these biased evaluations and preferences have tangible implications in real-world contexts, they matter.

Contrary to popular belief, in-group bias is not static, and not all “groups” feel or show the same degree of in-group bias. It depends upon the dynamics of a particular culture. For example, whites in our society tend to show a greater degree of in-group bias than blacks or members of other races (Dovidio & Gaertner, 2004). In-group bias is also most prevalent when in-group members perceive a threat to resources that benefit the in-group, (Riek et al., 2006) or norms that legitimize the status quo (Tropp & Molina, 2012; Sidanius et al., 1996).

It is also important to note that not everyone who fits within any particular group holds biases or preferences favoring that group. We all have many identity groups

to which we belong, and the salience of these identity groups differs across individuals and within varying contexts. For example, a white American may feel more “in-group” preference toward a black American than toward other white people when both are in France.

When people experience in-group bias, they tend to be more “comfortable with, have more trust in, hold more positive views of, and feel more obligated to members of their own group” (Reskin, 2000). In the context of in-group bias linked to race, researchers have found that people may try to avoid out-group members – an avoidance which often leads to distortions in perception and bias in evaluation of in-group and out-group members which results in discrimination (Reskin, 2000; see also Brewer & Brown, 1998).

Additionally, in-group bias leads people to feel more empathy toward members of their own group (Chiao et al., 2009; Xu et al., 2009). This finding has been documented using fMRI studies measuring the level of activity in the amygdala (an area of the brain that mediates pain) and the perception of the pain experienced by others. In the 2009 Xu et al. study, researchers showed participants video clips of faces contorted to reflect the experience of pain. When participants viewed pictures of in-group members experiencing pain, the fMRI documented high activity levels in the relevant brain region, but the activity level dropped when in-group members viewed clips of out-group members experiencing pain (Xu et al., 2009).

A similar study used transcranial magnetic stimulation (TMS) to measure corticospinal activity level in participants who were shown short video clips of a needle

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entering into the hand of either a white or black target (Avenanti et al., 2010). As with the 2009 fMRI study, researchers here found that region-specific brain activity levels are higher when a white participant views the clip of a white target experiencing pain than when a white participant sees a clip of a black target experiencing pain.

The neural reaction is not inherent or universal. Because it differs depending up on the relative status of and relationships between

different racial groups, researchers have concluded that this neurological response is culturally learned rather than inborn (Avenanti et al., 2010). The authors conclude that this research “uncover[s] neural mechanisms of an empathic bias toward racial in-group members” which serve as a basis for understanding social behaviors and that “lead some people to provide more help to racial in-group than out-group members” (Avenanti et al., 2010).

The combination of implicit negative associations with minority groups and in-group preferences among whites appears to result from of our country’s hardened racial categories and pervasive racialized associations. These interrelated phenomena have effects in important life domains, including criminal justice, employment, education, and health treatment. It cannot always be determined whether a

particular disparate effect is a result of a negative view toward one racial group or an in-group preference toward the dominant group, but the combined results of the two are profound.

D. BEHAVIORS LINKED TO IMPLICIT BIAS

The effects of implicit bias are not limited to the unconscious mind. Researchers have amassed powerful evidence that implicit bias (both negative bias toward people of color and positive bias toward whites) does not simply remain in the unconscious, but translates into a wide range of behaviors that have significant effects. In other words, those with negative implicit racial attitudes or who automatically stereotype display behavior consistent with those attitudes (McConnell & Leibold, 2001).

FIGURE 1. SAMPLE FACIAL EXPRESSION TEST



This behavior ranges from perceiving facial expressions differently to offering job callbacks at different rates to seeing guns more quickly in relation to some racial groups relative to others. Specifically, in studies of facial expressions, whites with stronger implicit racial bias perceive black faces as angrier than whites with weaker levels of bias; similarly, those with stronger implicit bias are apt to consider an expression happy or neutral if displayed by a white person, but neutral or angry if displayed by a black person (Hugenberg & Bodenhausen, 2003).

And in a multitude of experiments in which participants are directed to “shoot” video images of people with a gun as quickly and accurately as possible, those with higher implicit bias levels shoot black targets holding guns faster and more accurately than white targets holding guns (Payne et al., 2005; Payne, 2001; Correll et al., 2002; Correll et al., 2007). Implicit bias manifests itself in real-world decisions as well as laboratory experiments (Greenwald et al., 2009). Field studies demonstrate that black and Latino job applicants are significantly less likely to receive callbacks than are equally qualified white applicants (Pager et al., 2009). Particularly disturbing was the finding that black defendants who have stereotypically black features serve up to eight months longer and that such defendants are more likely to be sentenced to death in cases involving white victims (Eberhardt et al., 2006).

The adverse effects of implicit bias also carry beyond black-white relations. Indeed, implicit bias research has shown broad implications of such bias against a wide range of groups. For example, implicit negative associations toward Asian Americans has been linked to less positive assessments of the competence of Asian Americans as litigators (Kang et al., 2010), resistance to hiring Asian American candidates for national security jobs, and rejecting progressive immigration policies if proposed by Asian Americans (Yogeeswaran & Dasgupta, 2010).

Researchers have realized for decades that negative and positive attitudes are often reflected in our nonverbal behaviors (Word et al., 1974). Most of us know intuitively that nonverbal behaviors – including degree of interpersonal distance, eye contact, and other behaviors – determine whether we read someone as friendly and open or as hostile and closed (Dovidio et al., 2002), and when what people say appears to contradict how they say it, we are unlikely to believe the words we hear. For example, we may be inclined to question the veracity of someone who says, “I am so happy to see you,” when this is uttered with no eye contact and pursed lips. As such, research finds that implicit attitudes predict people’s nonverbal behaviors, while explicit attitudes predict the content of peoples’ words; moreover, when there are discrepancies between them, we may be more likely to attune to others in relation to their nonverbal behaviors, where implicit biases are more likely to be revealed (Dovidio et al., 2002). In research studies mimicking job interviews, Word et al. (1974) found that whites showed more positive nonverbal behaviors toward other whites than toward black candidates, such as sitting closer to them; at the same time, whites spent 25% less time with black candidates and had higher rates of speech errors with them than with white candidates (Word et al., 1974).

Implicit bias often receives attention when tragedies strike, but it is replicated in everyday micro-behaviors demonstrating that race affects social perception – such as the clutched purse when a black man enters the elevator, the assumption that a black lawyer works in the mail room or as a secretary, the query about whether a Latino or Asian American speaks English, or the question “Where are you really from?” asked of fellow citizens from different racial and ethnic groups. People can consciously reject negative stereotypes or attitudes in relation to different groups, but those negative stereotypes or attitudes can still be triggered automatically or “implicitly.”

Addressing implicit bias is clearly a crucial step. Yet researchers warn that those who make an effort to reduce bias and inhibit the automatic activation of negative attitudes and stereotypes must be mindful of the potential for “rebound effects” (Dovidio et al., 2008) that trigger racial anxiety or stereotype threat.

PART II

RACIAL ANXIETY

Racial anxiety can be acute, experienced as physiological threat (Blascovich et al., 2001; Page-Gould et al., 2008) and cognitive depletion (Richeson & Shelton, 2003; Richeson et al., 2003; Richeson & Shelton, 2007) in anticipation of and following an interracial interaction. When people experience the physical symptoms of anxiety during a cross-racial interaction, they often distance themselves, are less apt to share eye contact, and use a less friendly and engaging verbal tone – behaviors which can obviously undermine an interaction (Dovidio et al., 2002).

Racial anxiety matters on multiple levels, and its effects can spill over into virtually every important life domain. Members of both racial minority and majority groups may experience racial anxiety and its concomitant discomfort in cross-race interactions; moreover, members of racial minority groups may be subject to adverse effects of the racial anxiety among members of the dominant group with whom they interact. Given that white people continue to be overrepresented in positions of greater power, their anxiety can have significant consequences for members of other racial and ethnic groups. What this means is, for example, a black patient may suffer the effects of her own experience of interracial anxiety with a white doctor, but may also suffer the effects of the doctor's anxiety. As a result, it is in everyone's interest to identify and address the effects of racial anxiety.

A. INTERGROUP ANXIETY AS AN EVERYDAY OBSTACLE

Beginning in the 1980s with work by Walter and Cookie Stephan (Stephan & Stephan, 1984, 1985), social scientists have developed a robust literature addressing the fact that people often feel more anxious when interacting with “out-group” members than with “in-group” members. In a review of the literature, Tropp and Page-Gould (2014) explain that this observation has been replicated with a “host of convergent measures of anxiety, ranging from self-reported anxiety (Britt et al., 1996; Stephan & Stephan, 1985) to anxious behaviors (Dovidio et al., 2006; Dovidio et al., 2002) and physiological stress responses” (Amodio, 2009; Mendes et al., 2007; Page-Gould et al., 2008, Tropp & Page-Gould, 2014). Although the studies are not limited to race as the source of stigma (Blascovich et al., 2001), we are particularly interested in the application of this research to racial dynamics because race – and specifically relations between whites and African Americans – has represented such a salient divide in the United States.

Who Experiences Racial Anxiety

Racial anxiety, like implicit bias, is common, but not experienced by everyone. Some people may be more susceptible to experiencing racial anxiety, and it may have different underlying causes for the people who do experience it. For some, bias or prejudice is the source of the racial anxiety (Page-Gould et al., 2008; Stephan & Stephan, 1985). However, for others, it is the concern that the interracial interaction will not go well – rather than bias – that causes the racial anxiety (Tropp & Page-Gould, 2014; Trawalter et al., 2009). As we will discuss below in the interventions section, it is important to know the source of the anxiety to know how best to ameliorate it.

Other research emphasizes the role of both actual and perceived psychological threat as fundamental components of intergroup anxiety (Stephan & Stephan, 2000; Tropp & Page-Gould, 2014). This model when applied to race can be applicable both to whites as the dominant group and people of color as stigmatized groups. Among many whites, racial or ethnic prejudice predicts anxiety. These whites are more likely to perceive interactions with people of color as demanding (Dovidio et al., 2002; Trawalter et al., 2009), and they are worried about how they will be seen during the interactions (Amodio, 2009; Vorauer, 2006; Vorauer & Kumhyr, 2001; Vorauer et al., 2000). In a set of intriguing studies, prejudiced whites were actually likely to spend more cognitive resources trying to make the interaction go smoothly (Richeson & Shelton, 2003; Richeson et al., 2003; Richeson & Shelton, 2007). People with little prior contact with out-group members have also been found to react viscerally and more negatively to cross-group interactions (Blascovich et al., 2001; Mendes et al., 2002).

On average, people of color have more contact with whites and, as a result, may feel a greater sense of efficacy about interacting with whites (Doerr et al., 2011). Nonetheless, they may still experience anxiety when they expect to be rejected on the basis of race or ethnicity (Mendoza-Denton et al., 2006; Page-Gould et al., 2008; Pinel, 1999; Stephan & Stephan, 1989; Tropp, 2003).

Some may find it surprising that whites may experience “racial anxiety” given the continued dominance of whites generally – but in light of the importance of the prevailing social norm of egalitarianism, many whites truly fear being perceived as racist. Racial anxiety is more likely when whites are externally motivated not to appear racist than whites who are internally motivated by egalitarianism (Plant et al., 2008). In other words, we can be focused on not being racist – or focused on whether other people see us as racist. The latter can translate into the phenomenon of stereotype threat described in the next part of the report.

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B. ANXIETY FEEDBACK LOOPS IN INTERACTION

People who are experiencing racial anxiety exhibit some of the same behaviors as those who have implicit bias – even though, as discussed above, the source may be different. Researchers have found that people who feel anxious during interactions with people of other races or ethnicities are less likely to seek out or engage in subsequent interactions (Butz & Plant, 2011; Dovidio et al., 2006; Plant & Butz, 2006; Plant & Devine, 2003; Tropp, 2003). A negative experience with someone of another race or ethnicity can trigger a negative feedback loop where the experience of racial anxiety predicts fewer and lower-quality interactions with other racial and ethnic groups in the future (Paolini et al., 2006; Tropp & Page-Gould, 2014). This negative feedback loop creates a barrier to effective interracial contact because people with limited contact experience are more likely to have awkward or negative interactions (Blascovich et al., 2001) and so will be more motivated to avoid future contact.

Conversely, prior positive interracial contact can have a wide range of positive consequences, including improved interracial attitudes, more successful interracial interactions, and following from these, more positive inclinations toward future interracial interactions (Levin et al., 2003; Swart et al., 2011; Tropp, 2003). Importantly, prior positive experiences with people of other races or ethnicities can reduce the effects of later negative experience (Paolini et al., 2014). These positive interactions also translate into greater resilience when a later interracial experience is stressful (Page-Gould et al., 2010).

The positive effects of interracial or ethnic contacts may not occur immediately, particularly among strangers after a single brief meeting (Page-Gould et al., 2008; Tropp & Page-Gould, 2014). Rather, these effects generally develop over time (Page-Gould et al., 2008). In other words, people become more comfortable and

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experience less racial anxiety if they have repeated interactions with members of other groups rather than meeting just once. Indeed, even people with high levels of implicit bias who showed physiological signs of stress during a first interracial interaction showed fewer signs of stress in a second meeting, and by the third meeting showed no more stress than they would have with a person of the same race

(Page-Gould et al., 2008). Stress levels during interracial experiences are important because they make that particular interaction more successful – but also because the lower stress level of one interracial interaction has been shown to make later interracial experiences more positive (Page-Gould et al., 2010).

C. DISTINGUISHING EFFECTS OF RACIAL ANXIETY AND BIAS

When we experience racial anxiety, we may not recognize it – and we are even less likely to recognize that the person with whom we are interacting may be experiencing it as well. Thus, as a result of “pluralistic ignorance,” whites and people of

color are apt to behave in ways that confirm the other's fears – failing to initiate contact through open body language, eye contact, and other non-verbal signals of welcoming interaction (Shelton & Richeson, 2005). The absence of this kind of body language makes both people appear unfriendly or unwelcoming. In sum, racial anxiety begets more racial anxiety.

Pluralistic ignorance occurs when “people observe others behaving similarly to themselves but believe that the same behaviors reflect different feelings and beliefs” (Shelton & Richeson, 2005). Shelton and Richeson have concluded that both whites and blacks report interest in contact with one another, but both believe the other group will have little interest in interaction with them (Shelton & Richeson, 2005). The studies confirmed that both attributed their own lack of action to engage in interracial contact to be a fear of rejection, but presume that inaction by the member of the other racial group reflects lack of interest.

These tendencies are particularly acute in the context of race. Because of continued patterns of segregation, people are particularly likely to generalize from a single act committed by an individual member of a different race to the larger racial group to which that individual belongs. For instance, a white person who does not feel welcome to sit at a table with a black person may generalize this experience into a broad conclusion that black people as a group are not interested in interacting with whites. Similarly, a black person who observed the white person walking by the open seat at the table will conclude that whites as a group are not interested in interacting with black people.

Such interactional dynamics may seem trivial when compared to structural challenges, but they are crucially important in our day-to-day experiences, including interactions with teachers, employers, and health care providers.