Stereotype Threat

Theory, Process, and Application

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2 The Role of Situational Cues in Signaling and Maintaining Stereotype Threat

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This chapter focuses on how stereotype threat is produced and sustained through threatening situational cues in an environment—such as its organization, features, and physical characteristics—that suggest the possible mistreatment or devaluation of stigmatized individuals. First, we illustrate how threatening situational cues engender a vigilance process whereby stigmatized individuals direct attention toward additional cues to determine the value and meaning of their social identity in a setting. We review how both explicit and subtle situational cues elicit stereotype threat, particularly among racial minorities in academic settings and women in science, technology, engineering, and math (STEM) domains. We propose that the meaning people assign to those cues ultimately affects whether they will become vulnerable to—or protected against—stereotype threat. Further, we suggest that situational cues are meaningful to the extent that they elicit identity-related concerns, such as concerns for belonging, institutional fairness, or of being marginalized in a setting. Finally, we explore how "identity-safe" cues in a setting can eliminate stereotype threat by reducing identity threat concerns and signaling to stigmatized individuals that their social identity will not be a liability to their outcomes. Understanding how situational cues trigger and diffuse identity threat offers hope for changing the dynamics of social identity threat and ultimately points toward a new wave of identity threat research—investigating the interactive and contextual nature of identity-safe cues to create environments that are welcoming and comfortable for all groups.

Keywords: Stereotype threat, situational cues, environment, stereotype activation, stereotype maintenance

From an observer's standpoint, the situations of a boy and a girl in a math classroom or of a Black student and a White student in any classroom are essentially the same. The teacher is the same; the textbooks are the same; and in better classrooms, these students are treated the same. Is it possible, then, that they could still experience the classroom differently, so differently in fact as to significantly affect their performance and achievement there? This is the central question. CLAUDE M. STEELE (1997)

As Steele describes, the initial aim of stereotype threat research was to examine those factors suppressing the intellectual performance of black students and women in math, science, and engineering (Steele, 2011, Chapter 19, this volume). These groups were of particular interest because it was clear—based upon longstanding national data—that both were reliably underperforming in the classroom relative to their intellectual abilities, as indexed by the Scholastic Assessment Test (SAT). That is, at every level of preparation—matched with their white and male peers—standardized tests consistently *over-predicted* their achievement in school (Steele, 2010; Walton & Spencer, 2009). Because these data equated racial minorities and women's SAT scores with those of their nonstereotyped counterparts, academic ability and preparation seemed an unlikely explanation for this achievement gap. What else, then, was depressing their academic performance? Intrigued by these data, Steele and colleagues (Spencer, Steele, & Quinn, 1999; Steele & Aronson, 1995) began to investigate whether contending with negative stereotypes, themselves, might be restricting the academic performance of these groups.

▦ STEREOTYPE THREAT: A PERSON IN CONTEXT

Since the original studies, stereotype threat research has shifted the paradigm regarding how social psychologists think about—and investigate—causes of group differences in academic performance. Rather than theorizing about these causes as rooted in one's culture or lack of preparation, stereotype threat theory posited that these differences might be attributed to features of the situation. The insight was this: When situational cues in a setting make a stereotype salient and relevant to one's actions, the resulting psychological pressure to disprove the stereotype might depress academic performance.

Since the seminal investigation in 1995, nearly 400 studies have documented stereotype threat, investigating those factors that trigger and temper its effects, and revealing the processes by which it influences psychological and behavioral outcomes. In this chapter, we focus specifically on how stereotype threat is produced and sustained through situational cues in the environment. We propose that the meaning(s) people derive from situational cues ultimately affects whether they become vulnerable to—or protected against—stereotype threat. Finally, we describe how situational cues can create an atmosphere of identity safety for stigmatized groups, alleviating stereotype threat effects.

The Role of Cues and Vigilance in Stereotype Threat

Drawing from social identity theory (Tajfel & Turner, 1986), stereotype threat theory begins with the assumption that each person has multiple social identities (e.g., gender, age, race/ethnicity, socioeconomic status, etc.). When situational cues signal an identity's value or importance in a setting, that particular group membership becomes more salient than the others and a vigilance process is initiated.

During the vigilance phase of stereotype threat, people's attention is directed to other situational cues in the environment to determine whether the identity may be a liability. Two appraisals are possible. If cues in the social environment *disconfirm* the possibility that one's social identity will likely be a source of stigma, devaluation, or mistreatment, vigilance relaxes. Performance and functioning, then, are contingent only on the task at hand (Cohen & Garcia, 2008). However, if situational cues *confirm* the possibility that one's social identity is likely to be negatively evaluated, vigilance increases. Consequently, even seemingly innocuous situational cues—like an instructor's race or sex—can become imbued with meaning as people try to discern the probability of being devalued in a setting (Kaiser, Vick, & Major, 2006; Wout, Shih, Jackson, & Sellers, 2009).

Our own research investigated this vigilance process by examining how attention is drawn to relatively innocuous cues in a math, science, and engineering (MSE) environment, in which long-standing gender stereotypes abound (Murphy, Steele, & Gross, 2007). In this study, male and female MSE majors watched a video advertising a prestigious MSE summer conference, that depicted a gender ratio of either three men to one woman (the ratio typically found in American MSE settings; National Science Foundation [NSF], 2009), or a balanced gender ratio of 1:1. Among other outcomes, we measured participants' psychological and physiological vigilance as they watched the video. Sadly, women majors who watched the 3:1 video reported less belonging in MSE and expressed little desire to attend the conference; moreover, they were highly vigilant compared to women who watched the gender-balanced video and men who watched either video. These women remembered more details of the conference video, such as past conference activities. They also had faster heartbeats and sweatier palms—indications of physiological vigilance and stress. Even more interesting, the cue focused women's attention on their broader social environment. That is, women who watched the gender-unbalanced video remembered more MSE-related cues planted in the lab room, including MSE textbooks, *Science* and *Nature* journals, and posters of Einstein and the periodic table, than did the other groups. Thus, the situational cue of numeric representation caused these MSE women to engage a vigilance process—deploying attention to situational cues, both within the video and their local environment, to determine the value of their gender identity in the MSE conference setting.

Of course, individuals differ with regard to the likelihood and intensity that they engage the vigilance process. Some people constantly scan almost every environment for situational cues that signal their identity's value—for example, they may be particularly sensitive to identity-based rejection (e.g., Mendoza-Denton, Downey, Purdie, Davis, & Pietrzak, 2002) or highly conscious of the stigma associated with their identity (Pinel, 1999, 2004). For others, the vigilance process may begin only when cues disambiguate the likelihood of identity-based judgments. Similarly, people have different thresholds by which firm appraisals of identity threat are made. Some individuals require just one strong situational cue, such as a coworker's sexist comment, whereas others might experience threat only when multiple cues converge. Furthermore, certain situational cues will be less threatening for people

not personally invested in particular domains (e.g., women who avoid MSE). Indeed, research finds that the degree to which one identifies with a domain moderates stereotype threat effects (e.g., Aronson, Lustina, Good, Keough, Steele, & Brown, 1999). Likewise, people who are more identified with their stereotyped social group are also more vulnerable to stereotype threat effects (Schmader, 2002; Wout, Danso, Jackson, & Spencer, 2008).

These experiences with situational cues—and the unfolding stereotype threat processes that result (Schmader & Beilock, 2011, Chapter 3, this volume)—can influence people's desire to identify with, and persist in, professional and academic domains (Jones, 2009; Nussbaum & Steele, 2007; Osborne, 1997; Steele, 1997). Moreover, these vigilance processes may shape people's experiences in the future— steering their attention toward similar situational cues in new environments.

It is clear, then, that the psychological and behavioral experiences of stereotype threat are grounded in an environment's situational cues. In the next section, we provide an abbreviated review of those situational cues that have been shown to produce stereotype threat effects.

Situational Cues in Academic Settings

Perhaps because of the compelling nature of the original underperformance question, the majority of stereotype threat studies have examined the effects of situational cues on women's math performance or racial minorities' academic performance. The primary goal of these studies has been to investigate the processes that govern or modulate these performance effects.

Grounded in the original theory and research (Steele, 1997; Steele & Aronson, 1995), two cues—the diagnosticity of a test and the relevance of a stereotype to people's test performance—reliably produce stereotype threat among groups whose intellectual abilities are negatively stereotyped. In particular, the cue of diagnosticity signals to people that the test they are about to take is a valid predictor of their intellectual abilities (e.g., Johns, Inzlicht, & Schmader, 2008; Steele & Aronson, 1995; Taylor & Walton, 2011). The diagnosticity cue makes it clear that one's intelligence and competence is on the line and will be evaluated.

Studies that evoke stereotype relevance either explicitly refer to group stereotypes or more subtly suggest that stereotypes may be relevant to one's performance. For example, in studies examining stereotype threat among women in math, experimenters often inform participants that men are known to outperform women on the impending math test (e.g., Beilock, Rydell, & McConnell, 2007; Keller, 2002) or that women's performances will be compared to men's to determine whether the gender stereotype is true (e.g., Delgado & Prieto, 2008; Rosenthal, Crisp, & Suen, 2007). Others mention that the experiment's purpose is to examine gender differences in mathematical performance (e.g., Brown & Pinel, 2003; Johns, Schmader, & Marten, 2005) or to determine whether gender differences actually exist (McIntyre, Paulson, & Lord, 2003). Finally, in some studies participants are told that gender differences have been documented on the upcoming math test—leaving people to

infer the direction of the gender difference (e.g., O'Brien & Crandall, 2003; Spencer et al., 1999).

Research has shown that linking one's identity to one's performance or future potential subtly suggests diagnosticity and relevance. For instance, indicating one's race or gender on demographic questions increases the salience of stereotypes related to those group memberships and reduces performance, both in the lab and in the world (e.g., Danaher & Crandall, 2008; Schmader & Johns, 2003; Steele & Aronson, 1995). Highlighting the potential for evaluation also intensifies stereotype threat. Telling participants that they will receive performance feedback following the test (e.g., Martens, Johns, Greenberg, & Schimel, 2006; Steele & Aronson, 1995; Schmader & Johns, 2003) or that the test will "reveal their strengths and weaknesses," for example, amplifies threat (e.g., Johns et al., 2008; Marx & Stapel, 2006; Steele & Aronson, 1995). Stereotypes thereby are made relevant by emphasizing a test's importance, explicitly linking it to other, presumably more important abilities, such as one's general intelligence or future academic potential (e.g., Rydell, McConnell, & Beilock, 2009; Seibt & Förster, 2004).

Yet, stereotype relevance does not require heavy-handed experimental manipulations. Studies have shown that when a test is notoriously important—such as when it predicts future academic opportunities or scholarships—no additional cue is necessary to induce stereotype threat. For example, when stereotyped students hoping to attend graduate school take the GRE (Schmader, Forbes, Zhang, & Mendes, 2009), or when college-bound women take the AP Math Exam (Danaher & Crandall, 2008), both show stereotype threat underperformance. Thus, all that appears necessary for stereotype threat effects to emerge, particularly in high-stakes testing situations of personal importance, is that individuals are both aware of the stereotype and aware that the performance task is diagnostic of the ability in question (Kray, Galinsky, & Thompson, 2002).

Beyond these cues, research has shown that the organization of a setting significantly moderates stereotype threat effects. For example, several studies have revealed that the number of whites or men in a setting can significantly affect the performance of racial minorities and women, respectively (Inzlicht & Ben-Zeev, 2000, 2003; Sekaquaptewa & Thompson, 2002, 2003). In one experiment that manipulated the cue of numeric representation, women took a math test in a room with two other test-takers—either with two other females, one male and one female, or with two males. The effect of number was clear: With each man added to the setting, women showed a linear decrease in math performance, whereas men remained unaffected by the cue (Inzlicht & Ben-Zeev, 2000). In other research, the mere presence of men or whites administering math and intellectual ability tests caused underperformance among women and racial minorities (Marx & Goff, 2005; Marx & Roman, 2002; Wout et al., 2009). Thus, the physical arrangements and mere presence of certain groups within a setting are subtle, but powerful, situational cues affecting stigmatized individuals (Steele, Spencer, & Aronson, 2002).

Of course, stereotype threat occurs among other groups and in other situations besides women in math and African Americans in academics. In fact, all people have

social identities that—given a particular collection of cues—trigger stereotype threat. For example, Latinos, negatively stereotyped as intellectually inferior, can underperform on math and spatial ability tasks (Gonzales, Blanton, & Williams, 2002), low-income students may underperform when their socioeconomic background is highlighted (e.g., Croizet & Claire, 1998; Croizet & Millet, 2011, Chapter 12, this volume), and even white men's math performance can become vulnerable when compared to that of Asian Americans (Aronson et al., 1999). Thus, people from all social groups—including those who do not belong to traditionally stereotyped groups—can be affected by identity-threatening cues and experience the cognitive, behavioral, and emotional disruptions of stereotype threat.

In fact, some research demonstrates just how insidious commonplace cues can be. In a set of studies investigating the effects of the media, Davies and colleagues showed women and men three different sets of prime-time TV commercials (Davies, Spencer, Quinn, & Gerhardstein, 2005; Davies, Spencer, & Steele, 2002). One set included neutral commercials that advertised products unrelated to gender (e.g., a cellular phone, an insurance company). Another set featured gender-stereotypic depictions of women (e.g., a woman fantasizes about being chosen homecoming queen), whereas a third set featured counterstereotypic depictions of women (e.g., an attractive woman impresses a man with her car knowledge). Results revealed that, relative to the neutral ads, the stereotypic ads activated gender stereotypes and reduced women's inclinations to occupy leadership roles (Davies et al., 2005). Moreover, the stereotypic commercials depressed women's subsequent performance on a nondiagnostic math test, whereas men and women who watched the counterstereotypic commercials performed equally well. Women exposed to the stereotypic commercials even indicated less interest in pursuing quantitative domains as a career, preferring instead to apply their skills to verbal domains in which the potential for gender stereotyping is reduced (Davies et al., 2002). These clever studies demonstrate the far-reaching effects of subtle situational cues—affecting outcomes as varied as performance, task choice, and career aspirations.

A final set of studies reveals that other people's behavior can also trigger stereotype threat. Researchers hypothesized that women might use men's body language as an indicator of the potential for negative treatment and stereotyping (Logel, Walton, Spencer, Iserman, von Hippel, & Bell, 2009). In a set of experiments, male confederates either did or did not display certain behavioral cues to their female partners—scanning their female conversation partner's body, showing confident and dominant facial expressions, and displaying open body postures (i.e., shoulders back, knees far apart). They found that the confederate's sexist behaviors were enough to disrupt the performance of even highly skilled female engineering majors on an engineering test. Furthermore, women who interacted with the sexist confederate cognitively suppressed concerns about gender stereotypes in anticipation of their test performance—actively trying to manage these negative stereotypes before taking the test. This cognitive suppression ironically led to their subpar performance as it depleted the cognitive resources required to excel on the test. Thus, subtle situational cues—found in both the media and in the behaviors of others—can launch

the stereotype threat process and interfere with the performance, aspirations, and cognitive processes of stigmatized individuals.

▦ SITUATIONAL CUES AND SOCIAL IDENTITY CONCERNS

More recent research on the effects of social identity threat suggests that situational cues become meaningful to people to the extent that they imply some contingency between the cue and one's outcomes in a setting (Murphy & Steele, 2010; Purdie-Vaughns, Steele, Davies, Ditlmann, & Crosby, 2008; Steele, 2010). Take for example, the situational cue of student segregation in a high school cafeteria. When a freshman walks into the cafeteria and sees its organization by social identities—the jocks are sitting together, as are the nerds, the artsy kids, the African American students, the Asian students, the Latino students—this cue presents a contingency for his behavior. Suddenly, he is aware of his group membership more than he was before, and he feels pressure to sit with the group that he most identifies with so that he can feel comfortable. Thus, when situational cues direct or restrict one's behavior along the lines of social identity, those cues are likely to be perceived as meaningful.

But what particular meanings do situational cues hold for stigmatized individuals? We suggest that members of stigmatized social groups—by nature of their stigmatized status—have multiple concerns in the settings they encounter. Research has shown that stigmatized individuals experience more uncertainty in novel situations than do unstigmatized individuals—unsure whether others will judge them according to their identity, or whether their stigma will be a burden that impinges on their outcomes (Crocker & Major, 1989; Crocker, Major, & Steele, 1998; Crocker, Voelkl, Testa, & Major, 1991). Indeed, stigma carries with it additional burdens besides that of being reduced to a stereotype; people wonder how their identity will matter for many social and personal outcomes. These concerns constitute a more general social identity threat—a threat that arises when situational cues signal that one's social identity is meaningfully tied to one's outcomes in a setting. For example, a black student might be concerned that a predominantly Caucasian fraternity, looking to "diversify," accepted him primarily because of his race. Whereas a female manager may wonder whether she got a promotion because her company wanted to increase the representation of women at the management level. The situational cues tied to one's outcomes or interpersonal treatments are likely to be those that have the most impact on people's psychological and behavioral outcomes. Below, we provide an illustrative list of these concerns and describe how particular situational cues might speak to these concerns.

- *Stereotype threat concerns.* These concerns derive from situational cues that speak to the possibility that one's behavior will be interpreted through the lens of negative group stereotypes—that one might inadvertently confirm a stereotype about one's group to oneself or to others (Steele, 1997; Steele & Aronson, 1995). Cues that speak to stereotype threat concerns—such as task

diagnosticity and stereotype relevance—reveal to people whether the stereotypes tied to their social identity will be central to their evaluation and treatment in a setting.

- *Belonging concerns.* Stigmatized individuals also search for cues to belonging. Belonging to various social groups is a fundamental human need (Baumeister & Leary, 1995), but a sense of belonging is particularly important for stigmatized groups whose stigma implies that they might be seen as unsuitable in certain settings (Dovidio, Major, & Crocker, 2000). To date, identity-threat research has focused on several aspects of belonging. From feeling that one is comfortable—and can be oneself—within a social setting (e.g., Murphy & Steele, 2010) to a more interpersonal sense of fit and belonging that relies on the perceived acceptance by others (e.g., Walton & Cohen, 2007), belonging is crucial to stigmatized group members. Belonging concerns can be triggered by physical cues in a social environment, such as the presence or absence of other identity mates (Inzlicht & Ben-Zeev, 2000), or posters on a wall and items in a room that together create an ambiance suggesting that one's group does or does not belong in a setting (e.g., Cheryan, Plaut, Davies, & Steele, 2009).

- *Authenticity concerns.* Stigmatized individuals are also vigilant to cues that indicate the likelihood that they can be authentic in a setting (Shelton, 2003; Shelton & Richeson, 2006). Some situational cues suggest that others may treat them as an exemplar of their social group, rather than as an individual. Often, the pressure to represent one's group in such settings can cause a person to feel inauthentic and "fake."

- *Trust and fairness concerns.* Generally, people want reassurance that their social identity will not restrict their opportunities. Cues that speak to whether stigmatized individuals have fair chances for advancement and benefits are particularly important. Thus, stigmatized individuals often look for cues to interpersonal trust: "Can I trust those in my environment?" (Purdie-Vaughns et al., 2008). They also look for cues about whether the setting at large—at an institutional level—is worthy of trust: "Will the institution give my social group, and me, a fair chance?"

- *Discrimination and devaluation concerns.* Stigmatized individuals often look for evidence regarding whether they will be negatively treated, disrespected, discriminated against, or harassed on the basis of their social identity (Kaiser & Miller, 2001; Major, Quinton, & McCoy, 2002).

- *Marginalization, "ghettoization," and social exclusion concerns.* These include concerns that one's beliefs, values, and cultural practices might be seen as strange, abnormal, or not compatible with mainstream practices. Thus, stigmatized individuals are vigilant to cues about whether their group may be marginalized or pushed to the periphery of social environments—either physically or culturally segregated. Similarly, stigmatized individuals are vigilant to cues about whether their social identity is—or historically has been—excluded from particular social environments.

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Situational cues vary in the number and types of social identity concerns that they trigger. Some situational cues may speak to a single concern; however, most cues—especially subtle, ambiguous ones—are likely to speak to many concerns at once. Moreover, it is likely that different concerns have varying impacts on one's psychological, emotional, and behavioral functioning. More research into the particular concerns that situational cues raise—and their interaction with personality characteristics such as rejection sensitivity—are needed to better understand how they shape people's vigilance to other features of an environment and affect their outcomes.

Policy Box

Identity-threatening cues in environments, including subtle cues in classrooms and workplaces, initiate a vigilance process among stigmatized individuals that affects their psychological and behavioral functioning and dampens their performance. Identity-safe cues, however, reverse this process by signaling to people that their social identity is valued. Understanding how these processes may cause disparate outcomes for stigmatized groups is particularly important for educators and employers who interact with diverse populations on a daily basis. Our recommendations are threefold. First, organizational leaders should evaluate classrooms and work settings for the degree of identity threat that exists for stigmatized groups, especially in settings where disparate outcomes for stigmatized group members are apparent. Although different groups may have different concerns, anonymous climate surveys, opinion polls, and focus groups conducted by third parties will clarify these potentially multifaceted concerns and identify the organizational, physical, or ideological cues that signal identity threat. Second, organizational leaders should change these subtle, but threatening, cues in classrooms and workplaces and develop materials that utilize identity-safe cues. Finally, organizations should create and maintain committees charged with offering support, resources, and recommendations on how to sustain and reshape environments to remain identity safe as they diversify and grow. These recommendations, while not financially burdensome, will require thoughtful consideration to address the concerns of multiple social groups and diversifying organizations. The aim of these recommendations is to reverse the destructive effects of identity-threatening cues and to reshape settings so that all groups feel welcome and assured that their identity will not limit their performance or future outcomes.

▪ CREATING AND SUSTAINING IDENTITY-SAFE SETTINGS

One of the early goals of stereotype threat research was not only to reveal the cues and processes that negatively impact stigmatized group members, but to also develop strategies to remove threat from valued settings such as schools and workplaces (Steele et al., 2002). A hopeful implication of stereotype threat theory is that, by changing the situational cues in an environment, one might dampen the identity threat there. Although some settings are replete with threatening situational cues,

others contain few that indicate the potential for stereotyping, devaluation, or exclusion. Instead, these "identity-safe" settings contain identity-affirming cues—which signal to people that their social identity is affirmatively welcomed, respected, and poses no barrier for them (Davies et al., 2005; Markus, Steele, & Steele, 2000). Theoretically, situational cues should be effective in reducing stereotype threat to the extent that they adequately target people's social identity concerns and disconfirm the possibility that one's identity will impinge on one's outcomes in a setting. In what follows, we describe several identity-safe cues and discuss how the meanings ascribed to these cues set the stage for appraisals of threat or safety (see also, Cohen, Purdie-Vaughns, & Garcia, 2011, Chapter 18, this volume).

Cues to Identity Safety in Academic Settings

As with identity-threat cues, most identity-safe cues have been investigated among racial minorities in academic settings and women in math. These focus on alleviating the threat signaled by diagnosticity and stereotype relevance. Just as identity-threat cues vary in their explicitness, so do identity-safe cues. In studies of racial minorities, for example, threat in an academic setting is reduced by explicitly stating that the upcoming test is nondiagnostic of intelligence—that is, it cannot adequately predict participants' academic abilities (e.g., Ho & Sidanius, 2010; Steele & Aronson, 1995). To disarm the evaluation apprehension associated with stereotype threat, researchers might not use the label "test" at all—introducing the task instead as a "puzzle" or "problem-solving exercise" (e.g., Brown & Day, 2006). Studies also make stereotypes irrelevant to the task at hand by explicitly stating that the upcoming test has shown no racial differences or that it is an unbiased, "culturally fair" test (e.g., Blascovich, Spencer, Quinn, & Steele, 2001). Similar manipulations serve to alleviate stereotype threat among women in math settings (e.g., Spencer et al., 1999; Wout et al., 2008).

A series of stereotype threat meta-analyses demonstrated that the manner in which stereotypes are made relevant or irrelevant to performance influences people's perceptions of threat or safety (Walton & Cohen, 2003), and that the effectiveness of identity-safe cues varies by social group (Nguyen & Ryan, 2008). Among studies that manipulate stereotype relevance in testing settings, those that explicitly refute the link between the test and the stereotype show the most reduction in stereotype threat compared to those that do not. Thus, it seems that people link evaluative tests to negative group stereotypes more or less automatically and that it takes an explicit rebuttal of the stereotype's relevance to eliminate stereotype threat (Walton & Cohen, 2003). Complementing this work, a second meta-analysis (Nguyen & Ryan, 2008) revealed even more fine-grained results. Among women in math, explicit stereotype threat reduction strategies—such as telling participants that a test is not gender-biased—were more effective than were subtle ones, such as showing women in nonstereotypical roles (i.e., exposure to female role models). However, among minority students, subtle strategies to reduce stereotype

threat—such as describing a standardized test as a problem-solving exercise—were more effective than explicit strategies, such as stating that blacks outperform whites. More research that investigates the potential differences between social identity concerns that arise for women and racial minorities is needed so that we may understand these different responses to identity-threat and identity-safe cues.

Adding Identity-safe Cues to a Setting

Rather than reframing tests as nondiagnostic of ability or irrelevant to one's performance, it is possible to introduce additional (identity-safe) cues to neutralize an otherwise threatening environment. "Critical mass"—or the number of identity mates that it takes for individuals to feel they will not be judged according to their social identity (Steele, 2010)—is a potent identity-safe cue. If stigmatized individuals perceive a critical mass of their identities, identity threat is put to rest. For example, adding more female students to a math test setting reduces the concerns that solo women have about representing their group (Inzlicht & Ben-Zeev, 2000). Likewise, including a black experimenter in a study reduces African American students' concerns that they will be negatively stereotyped while taking an intelligence test (e.g., Danso & Esses, 2001; Marx & Goff, 2005; Wout et al., 2009). Thus, sharing group membership with key individuals in a setting—such as a professor in a classroom—is yet another powerful situational cue that limits the perceived likelihood that these individuals will apply stereotypes to fellow ingroup members (Wout et al., 2009).

Like the cues above, most successful stereotype threat interventions focus on disconfirming stigmatized individuals' social identity concerns. For example, black students may not only be concerned that their intellectual abilities will be negatively stereotyped; they may also be concerned about not "fitting in" due to the low numbers of black students on college campuses. To target such belonging uncertainty, Walton and Cohen (2007) provided an alternative attribution for the social and academic hardships that students may experience in their freshman year. They manipulated situational cues aimed at helping students realize that the concerns they had about fitting in at college were normal, widely experienced, and decreased with time. This short, 1-hour intervention protected black students' academic outcomes in their freshman year and buffered their grades through their senior year (Walton & Carr, 2011, Chapter 6, this volume). Thus, brief exposures to cues that directly target people's social identity concerns by decoupling their identity from their negative experiences in a setting protect them from the pernicious effects of stereotype threat.

Some Limits and Caveats to Creating Identity-safe Settings

In this chapter, we propose that to effectively reduce stereotype and social identity threat, situational cues must address the concerns of stigmatized individuals in

a particular setting. Certain cues, then, are likely to be more effective in reducing threat than others. Researchers must pay attention to how cues operate in concert to create an environment of safety. When people are appraising identity threat, one cue can shape the interpretation of another.

A few studies have examined this interactive nature of situational cues. In one experiment, black professionals were asked to evaluate a company based on a brochure in which two cues (numeric representation and a diversity policy) were manipulated (Purdie-Vaughns et al., 2008). A policy that explicitly valued diversity led black participants to overlook the low number of minorities in the company, a cue that otherwise troubled them. Similarly, depicting large numbers of minorities in the company led them to overlook concerns they would otherwise have had about a color-blind diversity policy. The meaning of one cue, then, depended on what other cues were also present. This interactive nature of situational cues makes it imperative that researchers assess the full range of cues in a setting, as changes in one cue may not alleviate the threat associated with another cue (Purdie-Vaughns et al., 2008.

▓ FUTURE DIRECTIONS

Stereotype threat theory suggests that to understand an individual's psychology and behavior, researchers must pay attention to context. Understanding the situational cues in a setting and the meaning(s) ascribed to them is foundational to understanding stigmatized groups' outcomes. The exact same situation—by virtue of the different meanings implied by situational cues—can be experienced in completely different ways by different groups of people. Threatening situational cues induce a vigilance process that directs attention to other features of a setting, so that people can determine whether a setting is aligned against their social identity. The appraisals that result from an assessment of situational cues crucially shape people's sense of belonging, trust, motivation, and performance. Although stereotype threat research has investigated many identity-threat and identity-safe cues within academic environments, stereotypes and broader social identity threats are relevant to many more settings. Additional work is needed to examine how identity-threatening cues affect people's particular social identity concerns. Similarly, investigations of how stereotype threat concerns are similar to, and different from, broader social identity threats such as concerns for belonging or marginalization are needed.

▓ CONCLUSION

Stereotype threat research has illuminated why certain social groups underperform relative to their talents. By locating the problem in the situation, stereotype threat theory offers the hope that, by understanding the cues that trigger and diffuse identity threat, we might create and reshape environments that are welcoming and comfortable to all groups.

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