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Journal of Experimental Social Psychology 40 (2004) 401–408
Journal of Experimental Social Psychology
www.elsevier.com/locate/jesp

Deflecting negative self-relevant stereotype activation: The effects of individuation☆

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Received 18 March 2002; revised 28 July 2003

Abstract

Under stereotype threat, when an individual risks confirming a negative self-relevant stereotype, activation of the stereotype can inhibit performance on a subsequent, related task. Although a significant amount of research has been devoted to examining the effects of stereotype activation on performance, relatively little is known about successful methods of intervention. Two experiments tested the hypothesis that individuation prior to performance would eliminate impairment due to stereotype activation. In both studies, Caucasian female participants in either a gender-prime or no-prime condition were administered a mathematics test. Gender primed, individuated participants outperformed gender primed, non-individuated participants and performed as well as unprimed, non-individuated (i.e., control) participants, supporting individuation as a protective measure against the detrimental effects of negative stereotype activation.

Keywords: Individuation; Intervention; Stereotype threat; Stereotype activation; Social identity

Introduction

Much of the existing stereotype literature focuses on examining underlying processes and motivations with respect to the perceiver. However, recent work has begun to focus on the stigmatized *targets* and the ways in which they are affected by stereotypes about themselves. For targets, negative, self-relevant stereotypes are particularly dangerous in light of the automatic activation of stereotypes and their consequent self-fulfillment (Bargh, Chen, & Burrows, 1996; Chen & Bargh, 1997; Wheeler & Petty, 2001). Unintentional fulfillment of the stereotype by a targeted member reinforces it, setting off a dangerous cycle of self-perpetuation.

For instance, Steele and Aronson (1995) found that activating a negative, self-relevant stereotype had detrimental effects on its targets. Black participants who were asked to indicate their race on a demographic questionnaire prior to completing challenging GRE questions performed significantly worse than both White and Black participants who were not asked for their race prior to the test. Steele and Aronson concluded that the subtle activation of a negative stereotype led to underperformance in a relevant domain by the targeted group. Their finding has been replicated with Latinos stereotyped as poor students (Aronson, Quinn, & Spencer, 1998), with women stereotyped as poor quantitative problem-solvers (Spencer, Steele, & Quinn, 1999), and with Whites stereotyped as poor athletes (Stone, Lynch, Sjomeling, & Darley, 1999; see Wheeler & Petty, 2001, for a review).

Despite the many replications of this phenomenon, an important yet unanswered question is whether the behavioral effects of negative stereotype activation are inevitable once set in motion or whether these effects can be counteracted. Few have succeeded in finding an effective solution. For example, a confidence-manipulation study by Stangor, Carr, and Kiang (1998) failed to yield conclusive results: participants who were led to believe that they had high ability on a word-finding puzzle and who expected to perform better on future

☆ This research was supported, in part, by an NSF Award (BCS-0112541) and by the Harvard College Research Fund. The first study was part of Sue Paik's undergraduate thesis conducted under the supervision of Nalini Ambady.
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doi:10.1016/j.jesp.2003.08.003

attempts did not perform significantly better after stereotype activation. Similarly, in a study by Aronson, Fried, and Good (2002), African American students who were encouraged to view intelligence as malleable, as opposed to fixed, through repeated intervention sessions subsequently had higher GPAs; however it was unclear whether this effect was actually mediated by a changed theory of intelligence.

Individuation research: Perceiver effects

Many studies, some of which are summarized below, on the impact of individuation on perceiver stereotyping suggest individuation as one possible means of reducing stereotypical judgments and their potentially harmful consequences (Brewer & Miller, 1984; Fiske & Neuberg, 1990). Virtually no research, however, has investigated the effects of individuation on the target, a question that becomes important for phenomena such as stereotype threat. What is known of the beneficial perceiver effects of individuation may nevertheless be useful in surmising a countermeasure to negative stereotype activation, more generally. When negative self-relevant stereotypes are activated, individuals act as both target *and* perceiver: targets, because the stereotype is directed against them, but perceivers as well, because they recognize the application of the stereotype to their situation. Because threatened targets are also perceivers of a self-stereotype, the documented success of individuation in reducing *perceiver* stereotyping suggests that individuation may play a potential role in deflecting the effects of negative self-relevant stereotypes.

In the case of perceiver effects, Wilder (1981) suggested that individuation of targets reduces bias by focusing attention on the person rather than any larger category. He proposed that the disclosure of personal information accentuating one's unique qualities encourages a more multi-faceted view that may distinguish a person from his or her ingroup and counteract stereotyping. To this effect, Langer, Bashner, and Chanowitz (1985) investigated the consequences of active distinction-making on the perception of handicapped children. When grade-school participants were encouraged to develop a more complex and distinctive (i.e. individuated) view of handicapped children, they saw them as more differentiated and were less likely to discriminate and avoid a handicapped peer. Langer et al. proposed increased differentiation as one possible means of reducing stereotyping and prejudice.

In support of this view, it has frequently been reported that providing diagnostic information about an individual—such as appearance, traits, and behaviors—can attenuate or even completely eradicate the effects of stereotypes on judgments about him or her (Rajecki, Graaf-Kaser, & Rasmussen, 1992). For example, Tversky and Kahneman (1974) demonstrated that when personality descriptions about a target are available, base rates are neglected in making inferences about the target, who is then judged solely on the basis of the individuating information. Base rate neglect occurs even when the information provided is nondiagnostic of the judgment in question. If stereotypes behave like base rates, then they too should be neglected in the presence of individuating information. Under this assumption, Locksley, Borgida, Brekke, and Hepburn (1980) asked participants to make assertiveness judgments about a male or female based on a description of each. A minimal amount of diagnostic individuating information proved enough to override the influence of gender stereotypes.

Stereotype activation and individuation

The research on stereotyping and target individuation seems to suggest that in many instances, individuating information can effectively combat stereotypical judgments of other people. Could similar benefits be obtained for negative self-stereotype activation if targets were able to individuate themselves—extricate themselves from ties binding them to their ingroup and thus to negative, ingroup-related stereotypes? The stereotype in question could become less relevant to their sense of self, losing its hold over targets' subsequent behavior.

A variety of research has suggested different ways to cope with the activation of negative self-relevant stereotypes and the risk of them, including: (a) disidentifying with the stereotype, rendering it irrelevant (Crocker & Major, 1989; Steele, 1997), (b) activating other salient identities that can change the self-relevance of a stereotype and how people respond to it (Shih, Pittinsky, & Ambady, 1999; Stapel, Koomen, & Spears, 1999), and (c) adopting a more focused, personal identity as opposed to a broader group-based identity (Turner & Onorato, 1999). Taking these three findings together, if the salience of group identity is replaced by the salience of individual identity, the risk associated with negative stereotype activation might be attenuated and performance altered to reflect more accurately the unique capabilities of the *individual* rather than the stereotypes of the group.

Indeed Shih et al. (1999) found that performance on a quantitative task depended on the particular social identity (Asian or female) that was made salient to participants through priming. Consistent with stereotypic expectations, activating ethnicity improved performance, while activating gender impaired performance. If one's behavior selectively conforms to the expectations of whatever identity is made salient, perhaps stereotype-activated individuals with a focus on individual rather than group identity will perform in accordance with their individual abilities, freed from the influence of any group stereotypes that hold them to a lower standard.

The present research

In two studies, we examined the effect of individuation, defined here as the "disclosure of personal information, which makes the person more identifiable" (Maslach, Stapp, & Santee, 1985, p. 731) on the test performance of stereotype-activated individuals. We hypothesized that individuation would eradicate performance inhibition due to the activation of a stereotyped identity. More specifically, we investigated the stereotype that women have inferior quantitative skills by examining the performance of Caucasian females on a quantitative test under various conditions. Half of the women in each study performed a computer task that subliminally primed them with the female construct, while the other half performed a similar task that did not prime them with any particular identity. In each of these groups, half of the participants subsequently answered an individuation questionnaire while the other half answered a comparable but neutral questionnaire. For each study, performance on the ensuing quantitative test was assessed and compared for each of the four groups.

We expected participants in the gender-primed, individuated condition to exhibit superior performance on the quantitative test compared to gender-primed participants who were not individuated; we did not expect the performance of gender-primed, individuated participants to differ significantly from participants in the unprimed, non-individuated (control) condition. Additionally, we anticipated that women in the gender-primed, non-individuated condition would perform significantly worse than those in the unprimed, non-individuated condition, replicating previous stereotype threat and identity activation findings.

Study 1a

Method

Design and participants

This experiment took the form of a 2 (prime: gender or neutral) × 2 (questionnaire: individuated or non-individuated) factorial design. The dependent variable was performance (percentage correct) on a challenging quantitative test, defined by the number of correctly answered questions out of the total number of questions.

Forty-four Caucasian female undergraduates and one graduate student at Harvard University, between the ages of 17 and 25, participated in exchange for course credit or $8 for 45 min of participation. The data for 5 of the 45 participants were excluded from analysis because post-experimental questionnaire responses indicated that they had been aware either of the priming manipulation, the aims of the study, or both. The mean age of the remaining 40 participants was 19.25 years ($SD = 1.51$). These women were randomly assigned to condition with the exception of ensuring an equal number of participants per condition.

Materials

Priming manipulation. To manipulate gender priming, participants performed a vigilance task on a PC that was a close variant of a procedure used by Bargh and Pietromonaco (1982). Instructions on the screen informed participants that they would be presented with a series of flashes and that after each flash, their task was to indicate whether it had occurred on the left or right side of the screen by pressing one of two designated keys. This decision was to be made as quickly and as accurately as possible, and to "facilitate" the task, participants were asked to fixate on the "+" in the middle of the screen for every trial.

Unbeknownst to them, each "flash" that appeared on the screen actually consisted of a word in capital letters followed immediately by a string of Xs, implemented to act as a mask and prevent conscious detection of the subliminally presented word. All participants first performed the same 10 practice trials, each of which contained neutral words such as *animal*, *before*, and *example*, followed by 20 experimental trials, intended either to prime gender (threatened condition) or simply to act as filler (non-threatened condition). Women in the gender-prime (i.e., threatened) condition were shown a series of words based on lists used by Dijksterhuis and Corneille (2003) and Steele, Ambady, and Cole (2002) consisting of the following: *aunt*, *doll*, *dress*, *earring*, *flower*, *girl*, *grandma*, *her*, *jewelry*, *lady*, *lipstick*, *miss*, *mother*, *pink*, *purse*, *she*, *sister*, *skirt*, *sweet*, and *woman*. Women in the unprimed (i.e., non-threatened) condition were presented with the following 20 neutral words: *place*, *banana*, *salt*, *water*, *moat*, *pen*, *stapler*, *bag*, *table*, *jar*, *clock*, *oxygen*, *carpet*, *glue*, *umbrella*, *it*, *pancake*, *dog*, *thumb*, and *bit*. All words were presented for 80 ms, with each string of Xs also appearing for 80 ms. Data from participants who reported seeing any words during the vigilance task were omitted.

Individuation manipulation. Participants in the individuation condition were asked to answer an anonymous questionnaire inquiring about (a) their favorite food, (b) their favorite movie, (c) their favorite book, (d) any special interests or hobbies. The format of this manipulation was based on research by Maslach (1974), in which participants in the individuation condition were asked self-description questions such as their name, home, special interests or hobbies, favorite music, astrological sign, etc.

In addition to asking participants for this information, the questionnaire also asked them to list three positive as well as three negative qualities/personality

traits about themselves, and for each trait to provide a brief example of a time in which they demonstrated this trait. Participants were asked to indicate traits because previous research has documented the efficacy of traits in distinguishing individuals from each other (Bodenhausen, Macrae, & Sherman, 1999; Kunda & Thagard, 1996); they were asked to provide good *and* bad qualities in order to distinguish the individuation manipulation from simple self-affirmation; and they were asked to provide a background or context for each trait to avoid stereotype-driven construals of these traits as described by Kunda and Thagard (1996).

In the non-individuated condition, participants were asked to fill out a comparably formatted questionnaire in order to see "how different Harvard undergraduates respond to the same set of broad or specific questions". This filler questionnaire included following questions: (a) What do lions eat? (b) What is the name for a group of lions? (c) Where can lions be found? (d) What kind of animal is a lion? (e) What are three positive and three negative characteristics/traits that describe lions? Both manipulations were pre-tested prior to the study to confirm that they had comparable effects on mood, self-esteem, and self-focus.

Mathematics test. The quantitative task chosen for this study consisted of 12 math questions from the Canadian Math Competition, as used by Shih et al. (1999).

Post-experimental questionnaires. Upon completion of the quantitative test, participants completed a final set of questionnaires (also used by Shih et al., 1999), indicating, among other things, their score on the quantitative section of the Scholastic Aptitude Test (SAT), how much they enjoyed participating in the study, how talented they were at mathematics, and their thoughts about the goals of the research.

Procedure

Participants were greeted and run individually by an Asian American female experimenter. Participants were informed that the study would consist of a short computer vigilance task, followed by a set of questionnaires and a quantitative test. To disguise the true aims of the study, the experimenter explained that the tasks were unrelated and simply constituted measures that were being pre-tested for a variety of studies to be run in the near future. Each participant first completed one of two versions (gender or neutral prime) of the computer vigilance task. The experimenter remained in the room only during the 10 practice trials to ensure that participants understood the task and were sufficiently quick in responding. After completing the vigilance task, participants were given five minutes to complete one of two questionnaires (individuation or non-individuation), under the guise that the experimenter was collecting "some demographic data on Harvard undergraduates." The experimenter then explained that the next task was a set of quantitative questions that were being piloted for difficulty and adequacy of time limit (20 min). Participants were given the "cover sheet" to the quantitative test, which (a) explained that the questions were meant to be challenging, (b) provided an example problem to indicate their level of difficulty, and (c) asked participants to predict how many of the 12 questions they would answer correctly. After 20 min, the experimenter re-entered the room to administer the set of post-experimental questionnaires. Finally, all participants were paid, thanked, and fully debriefed. The experimenter ensured that participants understood the reasons for any deception and bore no ill feelings before leaving the laboratory.

Results and discussion

Pretests. Because the individuation questionnaire was only loosely based on previous experimental work, it was first necessary to confirm that the individuation questionnaire induced no significant changes in mood, self-esteem, or self-focus. While self-focus refers simply to a state in which attention is directed inward, individuation was defined in this study as the disclosure of personal, identifying information for the purposes of making an individual feel more unique (Maslach, 1974; Maslach et al., 1985). It was likewise necessary to pretest the filler questionnaire for its effects on mood, self-esteem, and self-focus. Both questionnaires were pre-tested on a sample of 24 Harvard students who were asked to complete versions of Fenigstein, Scheier, and Buss's (1975) Self-consciousness Scale, the Rosenberg Self-Esteem Scale (Rosenberg, 1965), and the Positive and Negative Affect Schedule (PANAS) developed by Watson, Clark, and Tellegen (1988) both before and after completing one of the questionnaires. Pre- and post-manipulation data were compared and no significant differences were found (all p's were >.25).

Main results. The two-way analysis of variance (ANOVA) performed on the percentage of correctly answered mathematics problems yielded a significant Priming × Individuation interaction, $F(1, 36) = 4.27$, $p < .05$. As predicted, women who were gender-primed but subsequently individuated performed much better ($M = 52.5$, see Table 1 for treatment means and standard deviations) than non-individuated, gender-primed participants ($M = 40.8$) and about as well as unprimed, non-individuated participants ($M = 54.2$). The original stereotype threat effect was successfully replicated in this

Table 1
Mean mathematics scores by condition (% correct) for Study 1a

	Individuated	Non-individuated
Primed	52.5 (18.4)	40.8 (9.17)
Unprimed	45.0 (15.3)	54.2 (18.9)

study, with unprimed, non-individuated participants performing significantly better than gender-primed, non-individuated participants $t(18) = 2.00$, $p < .05$, one-tailed. Moreover, gender-primed, individuated participants performed better than the gender-primed, non-individuated participants, $t(18) = 1.79$, $p < .05$, one-tailed. No significant differences were found between the unprimed, individuated and gender-primed, individuated conditions, $t(18) = 0.99$, $p > .33$, and, unprimed, individuated and unprimed, non-individuated conditions, $t(18) = 1.19$, $p > .24$. Thus, the predicted effect was attained.

Across conditions, there were no significant differences in scores on the quantitative section of the Scholastic Aptitude Test, which ranged from 640 to 800 ($F(3, 36) = 0.699$, $p < .56$), ruling out the possibility that the significant Priming × Individuation interaction was due to differences in mathematical ability between conditions. Additionally, one-way analyses of variance (ANOVA) showed no significant differences across conditions in participants' (a) liking of the test, (b) assessment of how well they did on the test, (c) assessment of the test's difficulty, (d) reported enjoyment the experiment, (e) interest in math, (f) reported importance of doing well on the test, and (g) reported talent in math (all p's $< .25$). Thus, participants seemed equally motivated and confident in their abilities across conditions.

This study reveals that once triggered, the course of maladaptive, stereotype-congruent behavior due to stereotype activation can be combated. Individuation of negative stereotype-activated participants effectively undermined the effects of stereotype activation. Female participants primed with gender but subsequently individuated performed better on a quantitative test compared to primed, non-individuated participants. Primed, individuated participants also performed as well as control (unprimed, non-individuated) participants. Ostensibly, this occurred because individuation allowed primed participants to associate themselves with more than just the female category and female-related stereotypes, making the possibility of stereotype confirmation less threatening.

Alternative explanations for these findings exist, however. It is possible that the individuation manipulation produced the desired effects not because of individuation, per se, but rather because answering the questions about positive aspects of the self (such as a favorite movie or positive trait) was self-affirming. According to Steele's (1998) theory of self-affirmation, a person might overcome a self-threat by affirming "the broader self-concept or of an equally important, yet different, aspect of the self-concept..." (p. 268). In line with this possibility, Croizet, Desert, Dutrevis, and Leyens (2001) found that an affirmation manipulation did, in fact, help to alleviate stereotype threat. Specifically, when stereotype threatened women were given a questionnaire affirming that they were good students just before completing a challenging math task, they did not underperform relative to women taking the test under non-threatening conditions. A critical difference with our procedure, however, was that it did not create a *conscious* self-relevant threat, as the prime was presented outside of the participants' awareness. Nevertheless, this is a possibility that we wanted to more fully address.

In addition, because the individuation questionnaire was generally more challenging to complete than the control questionnaire, it is possible that the effects found in Study 1a were simply the result of additional mental distraction instead of the individuating manipulation that we intended. In order to eliminate the potential alternative explanation of self-affirmation and/or distraction, in Study 1b we changed the individuation manipulation (and corresponding control questionnaire) to be more in line with our previously stated definition of individuation.

Study 1b

Method

Design and participants

The design and participant recruitment of the present study were the same as in Study 1a. Forty-one Caucasian female undergraduates at Harvard University were run in the experiment; however, two participants were excluded because both were aware that they had been primed. Therefore, 39 participants with a mean age of 19.50 ($SD = 1.73$) were included in the final analyses.

Materials and procedure

Individuation manipulation. In keeping with our current definition of individuation and in an attempt to eliminate the possibility that participants in Study 1 were engaging in self-affirmation when listing their favorite foods, movies, books, interests, and hobbies, the current individuation measure *only* asked participants to list and provide a brief example of when they demonstrated 3 positive and 4 negative traits about themselves. As stated previously, past research has indicated that the listing of traits is a successful way to distinguish individuals from one another (Bodenhausen et al., 1999; Kunda & Thagard, 1996). Furthermore, participants were asked to list one more negative than positive trait, and to complete the negative traits following the positive traits as additional means by which to avoid the possibility of self-affirmation rather than individuation.

In the non-individuated condition, participants were asked to complete a questionnaire concerning "The Big Dig," described as "a project funded by the city of Boston [in which] the central goal is to ultimately move the city's main highway system underground." As a

more comparable control condition, participants in this study were asked to list three potential benefits and four potential detriments of the "Big Dig" using 2–3 complete sentences for each. Pre-testing showed that this measure was more similar to the individuation questions, in terms of content and length of time required to complete than the control questionnaire in Study 1a.

The priming manipulation, math test, and post-experimental questionnaire were identical to the ones used in Study 1a with one exception. In order to ensure that the "Big Dig" questionnaire was not individuating, each participant was asked if they had any personal connection to this project. None of the participants indicated that they did. The procedure was also identical to that of Study 1 except that participants were greeted and run individually by a Caucasian American female experimenter.

Results and discussion

The two-way analysis of variance (ANOVA) performed on the percentage of correctly answered mathematics problems again yielded a significant Priming × Individuation interaction, $F(1, 35) = 4.17$, $p < .05$. As in Study 1a, women who were primed with gender and were subsequently individuated performed significantly better ($M = 66.6$, see Table 2 for treatment means and standard deviations) than gender-primed but non-individuated women ($M = 44.5$), $t(18) = 2.111$, $p < .05$. This study also replicated the stereotype threat effect, with unprimed, non-individuated women performing better than gender-primed, non-individuated women $t(17) = 1.85$, $p < .05$, one-tailed. Once again, no significant differences were found between the unprimed, individuated and gender-primed individuated conditions, $t(17) = .671$, $p > .50$, and unprimed, individuated and unprimed, non-individuated conditions, $t(17) = .782$, $p > .44$. Across conditions, there were no significant differences in reported math SAT scores; therefore, the results of Study 1a were replicated using the revised individuation manipulation.

Individuation versus affirmation

In order to further ensure that the effects were due to individuation and not self-affirmation, two female judges rated participants' responses on each individuation questionnaire from Study 1a and Study 1b. Responses of each participant were rated using a nine-point scale ranging from not at all (1) to extremely (9) for how (a) likeable (self-affirming), (b) self-disclosing/revealing (individuating), and (c) positive (self-affirming) the person seemed to be, as well as (d) how much the judge felt she got to know the participant in reading her responses (individuating). The two self-affirming items were combined across the judges to create a self-affirming composite for each participant, as were the two individuating items. The effective reliability of the 2 judges for the composite for Study 1a was $r = .92$, and for Study 1b was $r = .74$. As only the participants in the individuation condition could be used for these analyses, the data from both studies were combined. These composites were then correlated with participants' math test performance in order to determine whether individuation, and not self-affirmation, was related to performance for participants in the individuation condition.

Table 2
Mean mathematics scores by condition (% correct) for Study 1b

	Individuated	Non-individuated
Primed	66.6 (26.1)	44.5 (20.3)
Unprimed	51.6 (28.0)	59.9 (15.3)

The correlational analyses supported our hypotheses. The math test performance of individuated participants was significantly positively correlated with judges ratings of individuation ($r = .62$, $p < .01$), and was not significantly correlated with judges ratings of self-affirmation ($r = -.19$, $p = .24$). This was driven by a significant correlation between performance and individuation for participants who had been gender primed ($r = .81$, $p < .01$), not participants who were unprimed ($r = .33$, $p > .05$). Furthermore, participants in both the gender primed and unprimed conditions again showed no significant correlation between self-affirmation and performance ($r = -.14$, $p = .56$, $r = -.25$, $p = .30$, respectively). These findings lend further support to the role that individuation can play in deflecting negative self-relevant stereotype activation.

General discussion

Several studies (e.g., Langer et al., 1985; Locksley et al., 1980) have suggested individuation as a countermeasure to stereotyping others. According to these accounts, building a more complex view of targets and differentiating them from larger categories has proven successful in deterring stereotype usage. In stereotype threat, where the target acts as both target *and* perceiver, individuation seems to be a useful strategy in combating self-stereotyping as well, allowing people to perform in accordance with their own capabilities rather than in accordance with stereotypically impaired abilities. But how exactly does this undermining occur—by what means or through what mechanism did performance improve upon individuation for participants in the critical (primed, individuated) condition? The efficacy of individuation may stem from the option it provides of distancing oneself from the stereotype in question, thereby reducing the criticality of the stereotype to the self-concept. As demonstrated in the literature on shifting social identities (Mussweiler, Gabriel, & Bodenhausen, 2000), protective measures against self-threat may include

strategies that separate the self from the threatening criterion.

These findings are consistent with current literature suggesting that stereotype self-involvement is associated with stereotype priming effects (Dijksterhuis & van Knippenberg, 1998; Shih, Ambady, Richeson, Fujita, & Gray, 2002; Wheeler, Jarvis, & Petty, 2001). Individuation, by contrast, lowers self-involvement. It provides the opportunity to render an activated stereotype irrelevant. By activating different aspects of identity, a stereotype applicable only to one particular social identity is no longer central and predominant. Our findings are consistent with research described by Croizet et al. (2001) on the role of self-affirmation in the reduction of stereotype threat. In one study, women were asked to complete a math task under stereotype threatening or non-threatening conditions. To determine whether "increasing the accessibility of other aspects of one's identity" could reduce the threat of confirming the stereotype, some women were asked to describe themselves in an open-ended format just prior to taking the test. According to Croizet et al., this manipulation did, in fact, increase women's math test performance. It is interesting to note, however, that in our study the means of activating the stereotype was completely outside of the participant's awareness, indicating that a focus on personal attributes or qualities can help to combat stereotypes activated at both the conscious and unconscious level.

Limitations of the study

This study was limited in testing one particular population (Caucasian females) in one particular domain (mathematical ability). Whether its efficacy generalizes to other instances of stereotype activation remains to be determined. It is possible that individuation has its limits in combating self-stereotype activation just as it does in combating perceiver stereotyping. Additionally, because participants in this study were individuated via an explicit means, it is uncertain whether a more subtle, implicit individuation manipulation would achieve the same effect. Nevertheless, this work suggests that the nature of stereotype activation is not inflexible or inevitably detrimental, and that in at least one case, individuation can serve as an effective intervention.

One question unaccounted for and raised by our study is the relationship of the individuation to the nature of the threat itself—that is, how relevant must the individuation be to the threatened domain of the self-concept? Varying this degree of specificity could conceivably vary the strength of the effect. In the current experiment, the individuation occurred at a broad level compared to the threat; no question of individual mathematical ability was asked until after the math test, in the post-experimental questionnaires, yet the manipulation still proved successful. An interesting extension of this study would be to narrow the individuation to the realm of the threat (e.g., asking participants to discuss their mathematical strengths and weaknesses) and determine any changes in the strength of its effectiveness as an intervention.

Implications

These results speak to issues that concern both our scientific and social world. Although the negative effects of self-relevant stereotype activation have been widely replicated and confirmed, intervention has received much less attention though it is arguably as important. Our research suggests that the vicious circle of stereotype fulfillment and propagation set in motion by stereotype activation can be broken. Perhaps one solution for combating and breaking down stereotypes must start with individuals working to combat negative self-relevant stereotypes, nurturing multiple identities, and recognizing their individuality.

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