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## Further ironies of suppression: Stereotype *and* counterstereotype accessibility <sup>☆</sup>

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### Abstract

Three experiments explored the accessibility of stereotypes and counterstereotypes following stereotype suppression. Using a lexical decision task, experiment 1 demonstrated that the counterstereotype showed greater accessibility following stereotype suppression compared to stereotype expressers and no prime control participants. Using a person perception task, experiment 2 revealed that suppression can make *both* the stereotype and the counterstereotype more accessible. Experiment 3 manipulated cognitive load and found evidence that the stereotype and counterstereotype are made accessible through two different processes associated with suppression: The stereotype is made accessible through the more automatic monitoring system, whereas the counterstereotype is made accessible through the resource-dependent operating system. The three experiments demonstrate a novel lack of inhibition of the counterstereotype by the stereotype, provide a clear demonstration of hyperaccessibility of suppressed stereotypes by comparing stereotype suppression to a stereotype expression condition, and contribute to the priming literature by demonstrating the interactive effects of accessibility, applicability, and judgment order on person perception evaluations.

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If only we could more effectively regulate our thoughts, behavior, and social interactions, we and those around us would be better off. However, we are often trapped by our best intentions; the very act of controlling impulses and motivations seems to increase a compulsive devotion to one's most disturbing thoughts. The more one tries not to think about a thought, the more prevalent that thought becomes (Wegner & Erber, 1992). This finding has particular importance for unwanted thoughts that have social implications such as stereotyping and engaging in discriminatory behavior. Indeed, Wegner (1994, p. 47), discredited suppression as a strategy for exerting control over stereotypic thoughts: "The very attempt to control prejudice may initiate ironic automatic processes that promote prejudice."

The present research, in contrast, supports recent theorizing that places the deleterious effects of suppression in a more defined and limited context. Monteith, Sherman, and Devine (1998) detailed the array of situational and individual variables that can promote the effective utilization of suppression in the service of stereotype control. We posit that, in addition to the undesirable side effect of increased stereotype accessibility, suppression can also increase the accessibility of the counterstereotype.

The current studies extend theory and research in a number of important ways. First, we show a novel effect of suppression that runs counter to much of the social categorization and stereotyping literatures: The stereotype and counterstereotype, rather than inhibiting each other, are both made accessible following suppression. Second, we demonstrate that the stereotype and the counterstereotype achieve their accessibility via two different cognitive processes involved in suppression: The resource-independent monitoring system and the resource-dependent operating

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system respectively. Third, we provide a clear demonstration of hyperaccessibility of suppressed stereotypes by comparing stereotype suppression to a stereotype expression condition. Finally, we contribute to the priming literature by demonstrating the interactive effects of accessibility, applicability, and judgment order on person perception evaluations.

### Thought suppression

According to Wegner (1994), thought suppression inspires ironic effects because it activates two concurrent systems: an intentional operating system and an automatic (i.e., proceeds efficiently and without awareness) monitoring system. The operating system engages in a controlled search for useful distractors (i.e., any thought other than the one being suppressed) whereas the monitoring system searches for failures of suppression (i.e., attention to the suppressed thought). When one is avoiding a mental state, the monitoring system's task is simpler than the operator's task in that the monitor is "passively" engaged in a feature-positive search, simply checking for references to the unwanted thoughts. The operator, on the other hand, is "actively" engaged in bringing distractor thoughts into consciousness. Therefore, the operating system requires cognitive resources, whereas the monitoring system does not.

Because of this differential reliance on cognitive resources, attempts at suppression are particularly vulnerable to reductions in cognitive capacity. When the more resource-dependent operating process is disabled, the monitor runs unchecked, creating heightened accessibility of the unwanted thoughts over and above the level exhibited by participants instructed to actually think about the topic (Wegner & Erber, 1992). The ironic effects of thought suppression also emerge once the intention to suppress a thought is removed or relaxed: The suppressed construct "rebounds", displaying increased activation (Galinsky & Moskowitz, 2000; Macrae, Milne, & Bodenhausen, 1994; Wegner, Schneider, Carter, & White, 1987). Not only can the operating system be disabled when cognitive resources are in scarce supply, but the act of suppression itself is an effortful, resource-demanding mental process (Macrae, Bodenhausen, Milne, & Wheeler, 1996; Sherman, Stroessner, Loftus, & Deguzman, 1997), leading suppressors to show a memory bias in favor of stereotypic material relative to non-stereotypic material. Thus, the act of suppressing a stereotype will typically lead that stereotype to become more rather than less accessible.

### Counterstereotypic distractors in thought suppression

The above review suggests that suppression is a particularly inefficient means of achieving control over cognitive processes. However, under certain conditions, suppression has been shown to be highly effective (see Monteith et al., 1998, for a review). An important determinant of suppression success is the availability of useful distractors. Thought suppression is more effective when there are readily avail-

able distractors to take the place of the suppressed thought (Kelly & Kahn, 1994; Wegner et al., 1987). For example, giving individuals a single distractor (a red Volkswagen) while suppressing white bears eliminates post-suppression rebound effects (Wegner et al., 1987). Additionally, practice at suppression leads one to achieve a rich yet focused tapestry of distractors (Kelly & Kahn, 1994), allowing the mind to take on a state of concentration.

The role of distractors and the paradigms used also highlight the differences between suppressing stereotypes (e.g., Macrae et al., 1994) vs. suppressing thoughts about white bears (e.g., Wegner et al., 1987). In Wegner's experiments, participants are simply given the goal of suppressing thoughts about a white bear, with no further instructions. Distractors, therefore, can be completely unrelated to white bears. However, when suppressing stereotypes, an individual might replace stereotypic items that spring to mind (e.g., hostile, criminal for African Americans), not with irrelevant, unrelated thoughts, but with the opposite construct or the antonym of the stereotypic item (e.g., kind, honest). In addition, the methodology used by Macrae et al. (1994) asked participants to suppress stereotypes while writing a narrative essay about the typical day in the life of a stereotyped target. This particular suppression paradigm should promote the process of replacement with the counterstereotype, and the constant process of replacing stereotypic thoughts with counterstereotypic ones could serve to make the counterstereotype as accessible as the stereotype.

Finding that both the stereotype and the counterstereotype are more accessible for stereotype suppressors would stand in sharp contrast to much of the stereotyping and categorization literature. Social categorization—the elegant and efficient simplifying and structuring of the social environment—is driven by the interplay of both excitatory and inhibitory mechanisms (Andersen, Moskowitz, Blair, & Nosek, in press; Bruner, 1957; Macrae, Bodenhausen, & Milne, 1995). The active inhibition of competing but relevant constructs is particularly pronounced in the context of stereotypes. For instance, priming a stereotype facilitates access to stereotype-consistent traits and inhibits access to stereotype-inconsistent traits, with the size of the inhibition effect equivalent to that of the facilitation effect (Dijksterhuis & van Knippenberg, 1996). Similarly, category label primes increase the ability to retrieve typical category members, while simultaneously limiting access to atypical members (Rothbart, Sriram, & Davis-Stitt, 1996).

Stereotype suppression may be one case in which the normal inhibition of the counterstereotype might be surmounted. By focusing on the counterstereotype as a distractor, suppression may lead to an ironic state in which both the stereotype and the counterstereotype are simultaneously accessible.

### Experiment 1: Counterstereotype accessibility following suppression

The first experiment investigated whether the counterstereotype of African Americans would be hyperaccessible

following stereotype suppression. After participants completed a narrative essay task—a standard procedure for manipulating suppression (Galinsky & Moskowitz, 2000; Macrae et al., 1994; Monteith, Spicer, & Tooman, 1998)—they completed a lexical decision task that included counterstereotypic and stereotype-irrelevant words.

## Method

### Participants and design

Participants were 37 undergraduates who received credit for participation as part of a course requirement. The design of the study was a 3 (experimental condition: stereotype suppression vs. stereotype expression vs. no prime control)  $\times$  2 (word type: counterstereotypic vs. stereotype-irrelevant) mixed design with repeated measures on the second factor<sup>1</sup>.

### Procedure

When participants arrived in the laboratory, the experimenter explained that the study concerned language abilities and that the first task investigated their ability to construct life event details from visual information. Participants were then shown a black and white photograph (presented on a computer screen) of a middle-aged, African American male and spent five minutes writing a short narrative essay about a typical day in the life of the individual.

Before constructing their narrative essay, one-third of the participants were randomly assigned to the *stereotype suppression condition* and were instructed that “previous research has demonstrated that thoughts and impressions are consistently influenced by stereotypic preconceptions, and therefore you should actively try to avoid thinking about the photographed target in such a manner.” One-third of the participants were in the *stereotype expression condition* and were told the narrative essay task was also a means of stereotype assessment and were asked to rely on the cultural stereotype (and not on their personal beliefs) of the social group represented in the photograph while writing the narrative essay. This condition was also included in an effort to prevent people from engaging in spontaneous suppression strategies (Wyer, Sherman, & Stroessner, 1998). A final one-third of the participants simply performed the lexical decision task and served as a *no prime control* group.

To separate the lexical decision task from the narrative essay task, all participants were given a set of math filler tasks (e.g., counting backwards by 3) that took approximately five minutes to complete. When finished, participants were placed in front of a computer screen and told that their job was to determine, as quickly and as accurately as possible (Fazio, 1990), whether a string of letters flashed

briefly on the computer screen comprised a word in the English language. Participants were given a practice session of 9 trials to acquaint them with the task; the practice trial did not include any words related to the African American stereotype. The experimental block was presented in a fixed, random order. For each trial, the string of letters appeared on the screen for 180 ms. After participants responded by hitting one of two keys representing “word” and “non-word”, a plus sign accompanied by a beep appeared on the screen to focus the participants’ attention and let them know the next trial was about to appear. Half of the string of letters represented words and half were non-words. Participants did not receive any performance feedback during or after the task.

Counterstereotypic and stereotype-irrelevant words were matched on word length. The *counterstereotype* words were cultured, industrious, smart, dependable, and wealthy. The *stereotype-irrelevant words* were calm, observant, romantic, boring, lonely, and obsessive. After completing the lexical decision task, participants were debriefed and thanked.

### Results and discussion

The dependent measure was the mean response latency for counterstereotypic words and stereotype-irrelevant words. Incorrect classifications (i.e., calling a letter string that was a word a non-word) and reaction times that were more than three standard deviations away from that trait’s mean were excluded from the statistical analyses (Ratcliff, 1993). Overall, there was a 4.42% error rate across the trials. A test for skewness after removing these outliers found that response latencies were normally distributed and therefore untransformed response latencies were used in all analyses. Participants’ lexical decision latencies were submitted to a 3 (experimental condition: stereotype suppression vs. stereotype expression vs. no prime control)  $\times$  2 (word type: counterstereotypic vs. stereotype-irrelevant) mixed-model ANOVA with repeated measures on the second factor.

As expected, only an experimental condition  $\times$  word type interaction emerged from the analysis,  $F(2,34) = 7.69$ ,  $p = .002$ . The one-way ANOVA conducted on the response latencies to counterstereotypic words was significant,  $F(2,34) = 4.86$ ,  $p = .01$ . As can be seen in Table 1, stereotype suppressors responded significantly faster to counterstereotypic words than stereotype expressers,  $t(34) = 2.28$ ,  $p = .03$ , and no prime control participants,  $t(34) = 2.96$ ,  $p = .006$ . Stereotype expressers and the no prime control did not differ from each other,  $t < 1$ . The one-way ANOVA conducted on the response latencies to stereotype-irrelevant words was not significant,  $F < 1$ . These findings demonstrate for the first time the increased accessibility of the counterstereotype following stereotype suppression.

### Experiment 2: Stereotype and counterstereotype accessibility

Having shown that the counterstereotype is more accessible after suppression, the next experiment investigated whether

<sup>1</sup> The data presented in experiment 1 were part of a larger study design that included a perspective-taking condition and stereotypic words. The perspective-taking condition and the stereotype words are being presented as part of another manuscript and therefore are not discussed here. For those interested in details of this other manuscript, please contact the first author.

Table 1  
Response latencies to counterstereotypic and stereotype-irrelevant words in experiment 1

	Experimental condition		
	Suppression	Expression	No prime control
Counterstereotypic	398.08 <sup>a</sup> (83.01)	476.47 <sup>b</sup> (90.40)	499.98 <sup>b</sup> (84.47)
Stereotype irrelevant	423.32 <sup>a</sup> (114.03)	443.46 <sup>a</sup> (73.04)	440.72 <sup>a</sup> (60.36)

Note. Standard deviations are in parentheses. Means with different superscripts in the same row are different from each other ( $p < .05$ ).

both the stereotype and the counterstereotype would show evidence of increased accessibility following stereotype suppression. In addition, the next experiment, by examining the effects of stereotype suppression against a stereotype expression condition, which is analogous to the original manipulations on thought suppression used by Wegner et al. (1987) (e.g., the “think about white bears” versus “suppress thoughts about white bears” instructions), would provide a strong test that suppression makes stereotypes hyperaccessible.

The next experiment used a person perception task, which is an ideal measure because it contains elements of both construct accessibility and construct application. Many studies use more extreme judgments about a person perception target who ambiguously possesses a stereotypic consistent trait as evidence of increased construct and stereotype accessibility (e.g., Devine, 1989; Higgins, Rholes, & Jones, 1977; Wyer, Sherman, & Stroessner, 2000). Therefore, the person perception paradigm can serve as a test of whether both stereotypic and counterstereotypic constructs are more accessible following attempts at suppression. However, the person perception task also allowed us to explore the judgmental consequences of stereotype suppression, investigating which construct, the stereotype or the counterstereotype, would be dominant in forming impressions of a subsequent target.

The priming literature suggests that the accessibility and applicability of a construct determine whether it will be used to categorize and make sense of an object (Bruner, 1957; Higgins, 1996; Stapel & Koomen, 2001). But there is ambiguity in the literature about which of two equally applicable and equally accessible constructs (e.g., the stereotype and counterstereotype following suppression) will be used to categorize and form an impression of an individual. After suppression, whether the counterstereotype or the stereotype is used to categorize a subsequent target might depend on the trait on which participants are asked to make judgments. Individuals asked to suppress the stereotype of African Americans and then asked to make evaluations of a target person along a stereotype-consistent dimension (e.g., hostility) might judge that person in a stereotype-consistent fashion. However, those individuals asked to rate the same person performing the same behaviors along a different, applicable dimension that was counterstereotypic (e.g., honesty), might judge the target person in a counterstereotypic manner.

Certainly, there is also the possibility that suppressors may come to see the target individual as possessing both stereotypic and counterstereotypic traits—e.g., hostile and honest. However, Moskowitz and Roman (1992) found that when participants had two evaluatively inconsistent

traits accessible, priming effects were only found on the first trait that participants were asked to make a judgment. In their experiment, participants were primed with both a positive (e.g. confident) and negative trait (e.g. stubborn). Only the construct that was presented first showed an effect; on the second encountered trait, no significant difference emerged because participants’ judgments were influenced by both the accessible trait and by their prior evaluation of the target on the first rating, with these two influences working in opposition to each other.

We adapted an ambiguous person perception passage from Erdley and D’Agostino (1988), in which the central character (Donald) is ambiguous on a stereotypic trait (hostility) and a counterstereotypic trait (honesty) with regard to African Americans. We asked participants to rate Donald on both the counterstereotypic and stereotypic traits, but we counterbalanced the order of judgment. We hypothesized that stereotype suppressors would see the ambiguous target as more extreme on both the stereotypic and counterstereotypic trait, but that this effect would only emerge on the first trait encountered by participants.

In addition, we also had half the participants make judgments on traits that were relevant to the stereotype (lazy) and counterstereotype (intelligent) of African Americans, but not applicable to the person perception paragraph. When participants are primed with a construct that is inapplicable to the person perception paragraph, no effects are typically found (Higgins et al., 1977; for a review, see Stapel & Koomen, 2001). Thus, we tested whether there would be an effect of suppression when participants made judgments on traits relevant to the stereotype or counterstereotype of African American but inapplicable to Donald.

## Method

### Participants and design

Participants were 73 undergraduates who received credit for participation as part of a course requirement. The design of the study was a 2 (experimental condition: stereotype suppression vs. stereotype expression)  $\times$  2 (first trait presented: stereotypic vs. counterstereotypic)  $\times$  2 (applicability of trait judgments to the Donald paragraph: applicable vs. inapplicable)  $\times$  2 (order: first trait vs. second trait) mixed design with repeated measures on the last factor.

### Pretest

To pretest that honest is a counterstereotypic trait for African Americans, 17 participants rated a number of attributes

on seven-point scale anchored at (1) “counterstereotypic of African Americans” and (7) “stereotypic of African Americans”. Honest was rated significantly below the mid-point of the scale ( $M = 3.06$ ,  $SD = 1.2$ ),  $t(16) = 3.2$ ,  $p < .005$ , demonstrating that it was considered to be counterstereotypic of African Americans (see Galinsky & Moskowitz, 2000).

### Procedure

Participants were given the same narrative essay task as in Experiment 1, except we used a different photograph (a college-aged African-American male). After working on a number of filler items for approximately 20 minutes, participants read about a target individual who was ambiguous on the dimensions of hostility and honesty; we adapted this person perception paragraph from Erdley and D’Agostino (1988). Although their original vignette described the activities of a woman named Donna, we altered it to describe Donald to keep the gender consistent between the photograph task and the person perception task (see Appendix A for the full passage). For those participants who rated the target individual on traits that were applicable to the Donald paragraph, nine-point scales on the trait dimensions *hostile* (stereotypic) and *honest* (counterstereotypic) were used. For those participants who rated the target individual on traits that were inapplicable to the Donald paragraph, nine-point scales on the trait dimensions *lazy* (stereotypic) and *intelligent* (counterstereotypic) were used. Thus participants saw either the two applicable traits or the two inapplicable traits. In both the applicable and inapplicable conditions the *order* of the trait judgments was counterbalanced.

### Results

#### Person perception judgments

We predicted that both the stereotype and counterstereotype would be used to categorize the ambiguous target. However, evidence of increased accessibility should only occur when (a) it was the first trait encountered and (b) when both the stereotype and the counterstereotype were applicable to the target person’s behavior. The ratings of Donald were submitted to a 2 (experimental condition: stereotype suppression vs. stereotype expression)  $\times$  2 (first trait presented: stereotypic vs. counterstereotypic)  $\times$  2 (applicability of trait judgments to the Donald paragraph: applicable vs. inapplicable)  $\times$  2 (order: first trait vs. second trait) mixed model ANOVA with repeated measures on the last factor. A number of significant lower order effects were qualified by a significant condition  $\times$  applicability  $\times$  order three-way interaction,  $F(1,65) = 4.9$ ,  $p = .03$ . The four-way interaction was not significant,  $F < 1$ , demonstrating that the same pattern occurred regardless of whether the stereotype or counterstereotype trait came first.

For the applicable judgments, the condition  $\times$  order interaction was significant,  $F(1,38) = 8.9$ ,  $p < .01$ . On the first trait, stereotype suppressors ( $M = 7.4$ ,  $SD = 1.1$ ) rated

Table 2  
Ratings of Donald across conditions in experiment 2

	Experimental condition	
	Stereotype suppression	Stereotype expression
<i>First trait encountered</i>		
Applicable to Donald paragraph		
Hostile (stereotypic)	6.9 <sup>b</sup> (.83)	4.8 <sup>a</sup> (2.4)
Honest (counterstereotypic)	8.0 <sup>b</sup> (1.2)	5.9 <sup>a</sup> (2.1)
Inapplicable to Donald paragraph		
Lazy (stereotypic)	4.4 <sup>a</sup> (1.8)	4.4 <sup>a</sup> (2.4)
Intelligent (counterstereotypic)	5.7 <sup>a</sup> (1.7)	5.8 <sup>a</sup> (2.2)
<i>Second trait encountered</i>		
Applicable to Donald paragraph		
Hostile (stereotypic)	6.0 <sup>a</sup> (2.0)	5.9 <sup>a</sup> (1.2)
Honest (counterstereotypic)	5.5 <sup>a</sup> (2.4)	6.5 <sup>a</sup> (2.0)
Inapplicable to Donald paragraph		
Lazy (stereotypic)	5.3 <sup>a</sup> (1.4)	5.6 <sup>a</sup> (1.4)
Intelligent (counterstereotypic)	7.0 <sup>a</sup> (.76)	6.4 <sup>a</sup> (1.3)

Note. Standard deviations are in parentheses. Means with different superscripts in the same row are different from each other ( $p < .05$ ).

Donald more extremely than stereotype expressers ( $M = 5.3$ ,  $SD = 2.3$ ),  $t(40) = 3.8$ ,  $p < .001$ . This occurred for both the stereotype-consistent word and the counterstereotype word (see Table 2). Stereotype suppressors rated Donald as more *hostile* than stereotype expressers,  $t(18) = 2.8$ ,  $p = .01$ . In addition, stereotype suppressors rated Donald as more *honest* than participants in the stereotype expression condition,  $t(20) = 2.7$ ,  $p = .01$ . On the second applicable trait that participants rated Donald, there was no significant difference,  $t < 1$ .

For the inapplicable judgments, the condition by order interaction was not significant,  $F < 1$ . Suppressors were not becoming more extreme in their judgments when the traits, although relevant to the activated stereotypic and counterstereotypic constructs, were not applicable to the Donald paragraph.

Experiment 2 produced three important findings. First, it provided direct evidence that both the stereotype and the counterstereotype are simultaneously accessible following suppression. Second, by showing that stereotype suppressors demonstrated greater stereotype accessibility compared to stereotype expressers, it produced the first strong evidence that stereotype suppression leads the stereotype to become hyperaccessible. Third, it supports the important roles of applicability and judgmental order in the effects of primed constructs. Only when the ratings were (a) applicable to the activated constructs, (b) applicable to the target of judgment, and (c) the first trait encountered did the judgmental effects of suppression emerge.

### Experiment 3: The counterstereotype buried under cognitive load

Thus far, we have demonstrated that both the counterstereotype and the stereotype show increased accessibility after suppression. The stereotype and counterstereotype,

however, may owe their increased accessibility to two different cognitive systems—the monitoring and the operating systems—that are differentially dependent on the availability of cognitive resources (Wegner, 1994). The monitoring system tends to be resource-independent whereas the operating system is likely to be disabled when cognitive resources are low or attention is divided. Although the counterstereotype has shown evidence of increased accessibility in the experiments presented thus far, its level of accessibility may depend on the availability of cognitive resources. Under conditions of full cognitive capacity, the counterstereotype and the stereotype should both be accessible. However, under conditions of limited cognitive capacity during the act of suppression, the accessibility and expression of the counterstereotype, activated through the operating system, should be impaired, and only the stereotype, made accessible through the monitoring system, should show increased accessibility. In the next experiment we placed all participants in the stereotype suppression condition but manipulated whether they were placed under cognitive load. We predicted that under cognitive resource deprivation, the counterstereotype would no longer show increased levels of accessibility following suppression. In experiment 3, participants only rated Donald on one trait that was applicable to the Donald paragraph so the order and applicability effects explored in experiment 2 were not relevant.

## Method

### Participants and design

Participants were 49 undergraduates who received \$10 for participation. The design was a 2 (cognitive load: yes vs. no)  $\times$  2 (word type: stereotype-consistent vs. counterstereotype) between participants design.

### Procedure

The procedure was similar to that of experiment 2 except that (a) all participants were in the stereotype suppression condition and (b) half of the participants were placed under cognitive load. Participants were given the narrative essay task with the same instructions, same photograph, and same person perception paragraph as in experiment 2. Prior to writing the narrative essay, half of the participants performed a task meant to place them in a state of cognitive busyness.

**Cognitive load manipulation.** The cognitive load manipulation was the same one used by Moskowitz and Skurnik (1999). Participants were given the following instructions:

Imagine that you are on your way to the library, and you meet a friend who asks you to check out certain important books as a favor. Imagine you have no way to write down the book titles—you must keep them in your head until you get to the library. **DO NOT WRITE DOWN THE TITLES** or any information from the titles before you are asked to—you should keep the information in

your head exclusively. You will have only 20 s to look at the book titles. The best way to memorize the titles is to repeat them to yourself over and over, as if you were trying to remember an important telephone number. Following the book titles you will be given a reading comprehension task.

**Person perception task:** After completing the narrative essay task and the short math filler task used in experiment 1, participants read the same Donald paragraph used in experiment 2. Half of the participants were asked to rate Donald along a trait *stereotypic* of African Americans (hostility) and the other half was asked to rate Donald along a *counterstereotypic* trait (honesty). Unlike experiment 2, participants only responded on one applicable dimension.

## Results

### Person perception judgments

The ratings of Donald were submitted to a 2 (cognitive load: yes vs. no)  $\times$  2 (word type: stereotype-consistent vs. counterstereotype) between-subjects ANOVA. A significant main effect for word type,  $F(1,45) = 4.69$ ,  $p = .04$ , was qualified by the significant two-way interaction,  $F(1,45) = 4.0$ ,  $p = .05$  (see Fig. 1). On the stereotype-consistent rating, cognitive load had no effect,  $t < 1$ : suppressors rated Donald as hostile regardless of whether they were under cognitive load ( $M = 7.5$ ,  $SD = 1.1$ ) or not ( $M = 7.1$ ,  $SD = 1.4$ ). On the counterstereotypic rating, Donald was rated as being more honest when suppressors were not under cognitive load ( $M = 7.1$ ,  $SD = .95$ ) than when they were under cognitive load ( $M = 5.7$ ,  $SD = 2.1$ ),  $t(45) = 2.29$ ,  $p = .03$ .

Regardless of cognitive resource deprivation, the stereotype showed the same level of accessibility following suppression. On the other hand, the counterstereotype showed less accessibility under conditions of divided attention. These results support our notion that suppression makes both the stereotype and the counterstereotype accessible through two different cognitive systems that are differentially dependent on cognitive resources: the stereotype is

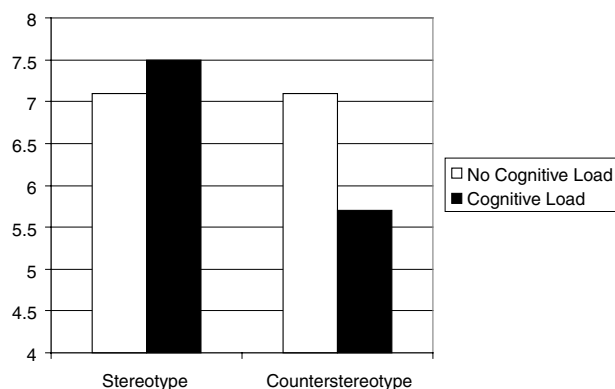


Fig. 1. Ratings of Donald along either a stereotype or counterstereotype trait. All participants were in the suppression condition and half were under cognitive load.

made accessible through the resource-independent monitoring system, whereas the counterstereotype is made accessible through the resource-dependent operating system.

## General discussion

The current experiments demonstrated a number of important consequences of stereotype suppression. First, the experiments demonstrated that stereotype suppressors displayed greater stereotype accessibility than stereotype expressers, providing a strong demonstration that stereotype suppression leads stereotypes to become hyperaccessible (see Galinsky & Moskowitz, 2000; Macrae et al., 1994; Wyer et al., 2000). The results replicate Moskowitz and Boman (1992) and extend their effect to the domain of stereotypes by demonstrating the interactive effects of accessibility, applicability, and judgment order on person perception evaluations. Only when an accessible construct is applicable to a target person and it is not evaluatively inconsistent with previous judgments will it influence later judgments.

More importantly, stereotype suppression was shown to have a previously undocumented effect: The heightened accessibility of the counterstereotype. The simultaneous accessibility of the stereotype and counterstereotype runs counter to research that has found the active inhibition of counterstereotypic traits (Dijksterhuis & van Knippenberg, 1996) and exemplars (Rothbart et al., 1996) following stereotype activation. In fact, inhibition is said to be a crucial driver of efficient categorization and social perception. Stereotype suppression broke down this system of inhibition. Wegner (1994) has pointed out the often ironic and paradoxical effects that emerge from attempts to control the contents of consciousness. The present results add another irony of suppression: The simultaneous accessibility of the stereotype and the counterstereotype.

It is important to note that the effects observed here may have resulted from the specific procedures we employed: Participants were instructed to avoid the stereotype of African Americans while writing their narrative essays, naturally leading individuals to draw on the counterstereotype as a useful and relevant distractor. Instances of suppression that do not mirror this procedure may not lead the counterstereotype to become accessible. However, we feel that this procedure corresponds with many real-life instances. Take the example of a Caucasian interviewing an African American for a job. While suppressing the African American stereotype, the person is likely to focus his/her attention on those attributes of the interviewee that are counterstereotypic of African Americans. When one suppresses stereotypes and is in a position of having to describe, evaluate, or form an impression of a member of a stereotyped group, the processes that we have documented here will likely be in play.

Despite the finding that the counterstereotype is made accessible following suppression, we also demonstrated that this potential benefit of suppression is limited. Experiment

3 provided evidence that the stereotype and the counterstereotype owe their increased accessibility to two different processes. The stereotype is made accessible through the resource-independent monitoring system, whereas the counterstereotype is made accessible through the operating system, which is dependent on an abundance of cognitive resources. When cognitive resources were scarce in the third experiment, the novel effect of simultaneous accessibility of both the stereotype and the counterstereotype disappeared, with only the stereotype showing suppression-induced hyperaccessibility. Further complicating the effects of suppression is the fact that suppression itself is often an effortful, resource-demanding mental process (Macrae et al., 1996; Sherman et al., 1997).

Another issue that can affect the success of suppression concerns how individuals evaluate their suppression experience. When people experience suppressing a stereotype to be difficult and frustrating they show greater subsequent suppression-induced accessibility of that stereotype (Förster & Liberman, 2001; Kelly & Kahn, 1994; Liberman & Förster, 2000). Related to the current studies, the research by Liberman & Förster suggests that the more one struggles to produce counterstereotypic distractors during suppression, the more influential the stereotype will subsequently be. In essence, experiencing the suppression task to be difficult and frustrating should produce a similar pattern to the cognitive load effects we found in experiment 3. Under all but ideal circumstances—being asked to rate a target along a counterstereotypic dimension and armed with ample available cognitive resources during the act of suppression—the counterstereotype will control judgment and behavior.

Although the current results suggest that the counterstereotype will only influence judgments in a circumscribed set of circumstances, we believe that the focus on the counterstereotype during suppression may be the starting point towards decreased stereotyping and ultimately towards less discriminatory behavior. Indeed, the strength of stereotypic associations can be reduced by training participants to replace the stereotype with different beliefs (Kawakami, Dovidio, Moll, Hermsen, & Russin, 2000), providing evidence that practice can impact participants' proficiency in negating stereotypes. The continued practice of replacing the stereotype with the counterstereotype may help suppressors achieve such proficiency over time, reducing the likelihood of rebound effects and stereotype hyperaccessibility. In fact, individuals are able to avoid rebound effects when they have developed a rich and focused tapestry of distractors (Kelly & Kahn, 1994). Through practice, suppression of a particular stereotype will come to be seen as easy and efficient, rather than experienced as difficult and frustrating (Förster & Liberman, 2001; Liberman & Förster, 2000), further reducing the potential for rebound effects. In addition, individuals with particularly strong motivations to be egalitarian will prevent the activation of stereotypes by automatically activating egalitarian principles in the presence of stereotyped targets; for these individ-

uals, the typical stereotypic associations have been replaced with their egalitarian ideals (Moskowitz, Gollwitzer, Wasel, & Schaal, 1999; Moskowitz, Li, & Kirk, 2004). Future research should see whether continued efforts of replacing the suppressed stereotype with counterstereotype distracters will allow suppressors to achieve a state of egalitarian grace.

#### Appendix A. Donald paragraph used in experiments 2 and 3

The other day my friend Donald asked me to go to the mall with him to shop for a suit to wear to his uncle's wedding. He drove us there in his grandmother's car, which had a handicapped license plate. When we got to the mall parking lot Donald passed by the many empty handicapped parking spaces because he was afraid he would be fined for parking in one of those spaces. The rest of the parking lot was very full, however, and when Donald spotted an empty space two rows away, he butted in front of another car which was about to park in that space. We entered the mall and went into the closest clothing store. Donald chose several suits to try on. When the clerk asked if he could help him, Donald said no, he did not need the clerk's fashion advice. I looked around the store while Donald tried on suits. When Donald came out he said that he had discovered someone's wallet in his dressing room. He had heard its owner knocking on several nearby dressing room doors inquiring about the wallet, so Donald had opened up his room door and handed the wallet to the man. Just as Donald finished the story, the clerk approached us and asked Donald if he had made a selection. Donald replied that he would have to go to better store because this one just did not have the quality of suits that he wanted.

As we walked down the mall talking to each other, Donald noticed a nice bracelet lying on one of the mall benches. He went over and picked it up, talking excitedly about how much his girlfriend would like it. Just then a security man approached and asked Donald if the bracelet belonged to him Donald answered that it did not, and asked the security man to take the bracelet to the lost and found. We walked further down the mall, and Donald went into a gift shop while I went to the music store. We met about a half an hour later, and Donald showed me the vase that he had bought as a wedding gift. He suddenly noticed a scratch on it, and the next thing I knew Donald was running into the store and demanding his money back. We then walked to another clothing store, and on the way we passed by a person who was collecting money for the heart fund. I dropped some money in the bucket, but Donald kept on going. We continued walking around the mall, stopping at several stores to look for a suit. Donald suggested that we drive to the other end of the mall to go to a clothing store there because the posted 3-hour limit for his parking space was about up anyway. When we got to that store Donald was lucky, as he found three suits he liked. One cost \$150, another \$180, and the third \$200. Donald decided on the least expensive of three because he promised his mother

that he would not pay any more than \$150 for a suit. Calling the shopping trip a success, Donald drove me home, and we agreed to go out together again soon.

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