Prejudice as Self-Control Failure[1]

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Research has suggested that whereas stereotypical attitudes may be automatically activated, the response to these stereotypes can be controlled. Anything that interferes with self-control may result in more biased behavior. The ego strength model hypothesizes that after exerting self-control, subsequent self-control performance will suffer. Hence, depletion of ego strength may lead to increased prejudice. In 2 studies, depletion was found only to affect individuals who normally try to control their prejudicial responses. Participants who do not normally try to control their use of stereotypes were equally prejudiced, regardless of their level of ego strength. The results have implications for prejudice and stereotyping, as well as models of self-control.

What does it take to be not prejudiced? Obviously, the individual must subscribe to egalitarian views (Devine, 1989; Fazio, Jackson, Dunton, & Williams, 1995; Monteith, 1993). However, recent research has suggested that merely wanting to be not racist is not enough. Instead, the person must actively try to not be prejudiced (Conrey, Sherman, Gawronski, Hugenberg, & Groom, 2005; Payne, 2005). Even so, such regulation of unwanted thoughts requires a great deal of cognitive effort, and all too often fails (Gilbert & Hixon, 1991; Macrae, Bodenhausen, & Milne, 1995; Macrae, Bodenhausen, Milne, & Jetten, 1994; von Hippel, Silver, & Lynch, 2000). Therefore, better understanding of the role of inhibition in controlling stereotypes is critical to the eventual eradication of prejudice.

In particular, researchers have found that stereotypical attitudes come to mind unintentionally (i.e., automatically) in the presence of a symbolic reminder of a member of a target (i.e., potentially stereotypical) group (Conrey et al., 2005; Devine, 1989; Fazio et al., 1995; Lepore & Brown, 1997). Stereotypical cognitions are difficult to control once they are learned and come to mind unbidden for most individuals. Based on motivation, learning history, and the situation, individuals can decide whether to act on

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or to believe these stereotypes (Fazio et al., 1995; Monteith, 1993). In other words, their actual response to the person is controllable, if they are willing and able to suppress the effects of the cognitions on their behaviors. These dual-process models (Devine & Monteith, 1999; Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997; Fazio, 1990) posit a central role for self-control in understanding prejudice.

Self-Control

Self-control is the overriding, inhibiting, or stopping of behaviors, urges, thoughts, or desires that would otherwise impede progress toward a goal (Barkley, 1997; Baumeister, Heatherton, & Tice, 1994; Shallice & Burgess, 1993). People exert self-control to follow a rule (either externally or internally determined), adhere to standards for appropriate or desired actions, or delay gratification (Barkley, 1997; Mischel, Shoda, & Rodriguez, 1989). Hence, it is likely that successful self-control is necessary for individuals to inhibit inappropriate or unwanted thoughts like stereotypes and to have smooth social interactions (Gordijn, Hindriks, Koomen, Dijksterhuis, & Van Knippenberg, 2004; Richeson & Shelton, 2003; Vohs, Baumeister, & Ciarocco, 2005).

Although some people may be better at self-control than others (Tangney, Baumeister, & Boone, 2004), self-control is, most likely, subject to moment-to-moment fluctuations in effectiveness as well. Some situations may lead to poorer self-control than others. Most notably, research has found that individuals who exert self-control performed more poorly on a subsequent unrelated test of self-control, compared with individuals who do not exert self-control (Baumeister, Bratslavsky, Muraven, & Tice, 1998; Muraven, Tice, & Baumeister, 1998). These researchers have argued that exerting self-control depletes a limited resource (i.e., ego strength) that is needed whenever the person overrides, changes, or inhibits an ongoing or well-established pattern of acting. Because ego strength is critical to the success of self-control, individuals who are lower in strength (i.e., depleted) should perform more poorly on tasks that require self-control. Depletion should have no effect on tasks that do not require self-control, however (Muraven & Slessareva, 2003).

Hence, individuals who exerted self-control may be lower in ego strength and, therefore, perform more poorly on a test of self-control, compared to individuals who did not just exert self-control (Muraven & Baumeister, 2000). For example, participants who had to suppress the thought of a white bear laughed, smiled, and showed more overall amusement while watching a humorous film clip, despite instructions to express no emotions, as compared

to participants who had previously solved difficult math problems (Muraven et al., 1998, Study 3). The groups did not differ in mood, arousal, frustration, or difficulty of the initial task; the only difference between the two conditions was the amount of self-control required by the first task. Solving math problems requires much less self-control than does suppressing the thought of a white bear; therefore, suppressing thoughts is more depleting than is solving math problems. In short, participants who used up a limited resource that is needed for self-control were less successful at a subsequent self-control attempt than were participants who did not use this resource.

Self-Control of Prejudicial Cognitions

Individuals' level of ego strength may be important in the regulation of stereotypes and prejudice. In particular, because stereotypes are well-learned associations between a target group and a set of attitudes, stereotyping is an automatic process, regardless of individuals' actual level of prejudice (Conrey et al., 2005; Devine, 1989; Fazio et al., 1995; Macrae et al., 1995). Upon contact with a member of the target group, the stereotype regarding this group often springs to mind automatically, much like the concept of disease comes to mind unbidden upon contact with a rat. For example, high- and low-prejudice individuals are equally aware of the cultural stereotypes of African American individuals (Devine, 1989; Lepore & Brown, 1997). What differentiates high- and low-prejudice individuals is their motivation for not applying and acting on these stereotypical thoughts (Dunton & Fazio, 1997; Fazio et al., 1995; Monteith, 1993).

Such debiasing obviously requires cognitive control. For example, individuals with good executive control exhibited the same automatic race bias as did individuals with poorer executive control. However, these automatically activated stereotypes were much more likely to influence the behavior of individuals low in executive control than those high in executive control (Payne, 2005). Similar research has found that a decline in executive control may explain increased prejudice among the elderly (von Hippel et al., 2000). Individuals who were cognitively busy were more prejudiced than were individuals who had greater cognitive resources (Gilbert & Hixon, 1991). Even neurological evidence in the form of activation of the amygdala and frontal cortex suggests that individuals' initial emotional response to different races can be moderated by higher order functioning, if given time (Cunningham et al., 2004).

These studies suggest that people can control the influence the stereotype has on their behavior, providing that both the ability and the motivation to do so are present (Fazio, 1990; Wilson & Brekke, 1994). From these models,

it is clear that even if an individual is highly motivated not to be prejudiced, he or she must have the ability to limit the impact of the stereotypical information on his or her thoughts, feelings, and behaviors. If, for some reason, his or her ability or motivation to limit prejudice is compromised or reduced, he or she is likely to engage in stereotype-consistent acts. At high levels of motivation to control prejudice, the ability to debias is critical; at low levels of motivation, ability should matter far less.

Depletion and Prejudice

Hence, inhibition or self-control is likely critical to controlling prejudice (Gilbert & Hixon, 1991; Macrae et al., 1995; von Hippel et al., 2000). This inhibition should deplete ego strength. Indeed, White individuals who interacted with a Black confederate performed more poorly on a subsequent test of self-control, as compared to White individuals who interacted with a White confederate (Richeson & Shelton, 2003; Richeson & Trawalter, 2005). The same appears to be true for Black individuals who are interacting with White confederates (Richeson, Trawalter, & Shelton, 2005). Similarly, individuals who had to override their prejudicial thoughts performed more poorly on subsequent tests of self-control, as compared to individuals who did not regulate their prejudicial cognitions (Gordijn et al., 2004). Thus, acting in a nonprejudicial way appears to deplete ego strength.

More in line with the present arguments, the elderly, whose ability to exert self-control is diminished, seem to be more prejudiced because they lack the ability to inhibit prejudicial attitudes (von Hippel et al., 2000). These results suggest that differences in self-control capacity are significant predictors of prejudicial behavior. Likewise, in Gordijn et al.'s (2004) experiments, participants who regulated their thoughts about stereotypes subsequently had more stereotypical thoughts. Although this could be a result of the rebound of the thoughts after suppression, it could also be a result of the depletion of ego strength.

The present research is an extension of Gordijn et al.'s (2004) research, using a cleaner test of depletion. I predict that among individuals who make attempts to regulate their stereotypical cognitions, their level of ego strength is likely to play an important role in determining whether they will succeed at removing the biasing efforts of their automatically activated stereotypes. Individuals whose ego strength is depleted as a result of previous self-control demands should appear more prejudiced than individuals who are not depleted. These effects should be limited to stereotypical cognitions: Depletion of ego strength should not affect nonstereotyped cognitions, such as ratings of majority groups.

Moreover, effects of depletion should be limited to individuals who are exerting self-control (Muraven & Slessareva, 2003). Individuals low in motivation to control prejudice should not be exerting control over their thoughts (Monteith, 1993) and hence never draw on their reserves of ego strength to control their prejudices. For this reason, individuals low in the motivation to control prejudice should rate African American targets the same, regardless of their level of ego strength. The effects of depletion should be limited to individuals high in motivation to control prejudice.

Experiment 1

Method

Participants

Participants were 56 students (9 males, 41 females, and 6 participants who declined to indicate their sex) attending a community college in a large metropolitan city who were recruited for the experiment. They were given extra credit for their participation. All participants were European American, with a mean age of 29 years ($SD = 9.3$). To help reduce demand characteristics, the experimenter told participants that the purpose of the experiment was to look at how individual differences in concentration affect individuals' perception of others.

Procedure

Depletion phase. Participants first undertook a task that required them to inhibit a behavior. In keeping with the cover story of testing the role of concentration on impression formation, the inhibition task was presented as a test of concentration. Specifically, participants were given a sheet of a paper with text on it (a page from an advanced statistics book that should be relatively meaningless to participants). The experimenter told participants to cross off the letter "e" on the page, as quickly and as accurately as they could. Half of the participants were given easy instructions that should not require much inhibiting or self-control (i.e., easy instruction condition). They just crossed off every "e" on the piece of paper. Because this task did not require inhibiting or overriding a well established behavior, it should deplete a minimal amount of ego strength. The other half of the participants worked on a similar task that required considerably more self-stopping and, hence, self-control (i.e., difficult instruction condition). These

participants crossed off any "e" that was not next to or one letter away from a vowel. Hence, participants in the difficult instruction condition had to override the urge to cross off every "e." Overriding an urge requires self-control and should deplete a person's level of ego strength. Prior research has found that following difficult instructions requires self-control and is indeed more depleting than easy instructions (Baumeister et al., 1998).

Measure of stereotyping. Participants then took a test of stereotyping and prejudice. Participants read three different newspaper articles and rated the protagonist on eight different dimensions: four negative (i.e., hostile, aggressive, reckless, and dangerous) and four positive (i.e., intelligent, responsible, careful, and sensitive). Each item was rated on a 25-point scale ranging from 1 (*not at all*) to 25 (*very much*). Hence, each participant made a total of 24 ratings (8 ratings of 3 protagonists).

A photograph of either an African American or a European American individual accompanied each newspaper article. The photographs were matched for attractiveness; the only difference between the two pictures was the race of the person. Thus, although all participants read the same newspaper articles, half believed the protagonists were European American, while the other half believed that the protagonists were African American. That is, each participant saw three newspaper articles with three different African American pictures or three different European American pictures.

Motivation to control prejudice. Finally, participants completed the Motivation to Control Prejudiced Reaction (MCPR) scale (Dunton & Fazio, 1997) to determine their motivation to regulate their expression of prejudice. Participants who score high on the MCPR typically make greater efforts to regulate their prejudicial responses than do individuals lower in motivation to control prejudice (Dunton & Fazio, 1997). In the present experiment, the overall scale had adequate reliability (coefficient $\alpha = .74$).

Results

A factor analysis of participants' ratings found that their perceptions of the protagonist loaded onto two separate and orthogonal factors: positive and negative perception scales (there were two eigenvalues greater than 1, and the scree plot indicated a sharp bend at two factors). These two scales were consistent across stories and targets' race. The positive trait scale was the sum of participants' ratings of the target on intelligent, responsible, careful, and sensitive traits across all three articles ($\alpha = .81$). The negative trait scale was the sum of participants' ratings of the target on hostile, aggressive, reckless, and dangerous traits across all three articles ($\alpha = .83$).

For European American targets, the correlation (r) between these two factors was .33 ($p = .10$); while for African American targets, the correlation was .29 ($p = .14$). In other words, these two factors are not significantly related. The score on the MCPR scale did not differ across conditions, $t(54) = 0.49$, *ns*.

The results were initially analyzed using a 2 (Depleted: yes or no) × 2 (MCPR: high vs. low) × 2 (Target: White vs. Black) × 2 (Traits: positive vs. negative) ANOVA, with the last factor within-subjects. The four-way interaction was significant, $F(1, 48) = 5.01$, $p < .05$. For ease of interpretation and maximum statistical power, I examined positive and negative ratings separately. In particular, participants' ratings of the target were analyzed using multiple regression, with a particular interest in the three-way interaction between prior self-control effort, race of the target, and MCPR.

For positive traits, this three-way interaction was not significant, nor were any of the lower order effects. In other words, rating of positive traits was unrelated to prior self-control exertion, motivation to control prejudice, or the race of the target. This provides evidence that the effects of exerting self-control on the perception of others are selective.

For negative traits, the three-way interaction among condition, MCPR, and race of the target was significant (see Table 1). As shown in Table 2, the interaction between MCPR and prior self-control instructions was not significant for European American targets. Individuals' perceptions of European American targets were not related to prejudice. It is particularly noteworthy that participants' perceptions of European American targets were not related to self-control demands, which suggests that self-control demands alone are not making individuals view people more negatively.

A different pattern of results was observed for participants' perceptions of negative traits among African American targets. Most noteworthy, the combination of high MCPR and prior exertion of self-control was significantly related to negative ratings of African American targets. In particular, an examination of the simple slopes found that for participants low in MCPR (1 *SD* below the mean), there was no difference between depleted and not-depleted participants in their negative perceptions of African American targets ($B = 16.38$, $SE = 20.49$), $t(27) = 0.80$, *ns*. There was a significant difference between depleted and not-depleted participants among those high in MCPR (1 *SD* above the mean; $B = 69.80$, $SE = 30.83$), $t(27) = 2.26$, $p < .05$. Put another way, individuals who were not regulating their use of stereotypes rated the African American target the same, regardless of whether they recently exerted self-control. Individuals who were trying to control their use of stereotypes rated African Americans less negatively when they were not depleted than when they were (see Figure 1).

Table 1

Regression Equations for Ratings of Negative Traits: Experiment 1

	Variable	*B*	*SE*	Beta	*t*
Model 1	(Constant)	142.508	13.49	—	10.57***
	Depletion condition	–13.007	11.42	–0.156	–1.14
	Race of target	9.942	11.30	0.121	0.88
	Motivation	–0.063	0.43	–0.020	–0.15
Model 2	(Constant)	143.850	22.13	—	6.50***
	Depletion condition	–44.764	25.87	–0.537	–1.73
	Race of target	27.066	26.04	0.330	1.04
	Motivation	–0.303	0.89	–0.096	–0.34
	Race × Condition	–20.250	22.64	–0.189	–0.90
	Race × Motivation	–0.400	0.97	–0.161	–0.41
	Condition × Motivation	1.889	0.93	0.587	2.04*
Model 3	(Constant)	124.288	24.07	—	5.16***
	Depletion condition	15.067	41.09	0.181	0.37
	Race of target	53.807	29.26	0.655	1.84
	Motivation	0.601	1.00	0.190	0.60
	Race × Condition	–105.274	51.09	–0.983	–2.06*
	Race × Motivation	–1.598	1.15	–0.644	–1.39
	Condition × Motivation	–0.920	1.72	–0.302	–0.53
	Condition × Motivation × Race	3.938	1.93	1.013	2.05*

*$p < .05$. ***$p < .001$.

Discussion

The results of Experiment 1 indicate that, as compared to people who have not recently exerted self-control, people high in motivation to control prejudice who have exerted self-control rated African American targets, but not European American targets, more negatively. That is, individuals who typically try to regulate their prejudicial thoughts rated African American targets less negatively when their ego strength was not depleted. However, if their strength was depleted, these normally tolerant individuals rated the African American targets more negatively. Their inability to regulate their thoughts apparently led to greater expressions of prejudice. As would be

Table 2

Regression Equations for Ratings of Negative Traits, Split by Target's Race: Experiment 1

Race of target		Variable	*B*	*SE*	Beta	*t*
European American	Model 1	(Constant)	130.931	17.09	—	7.66***
		Depletion condition	–5.250	12.82	–0.083	–0.41
		Motivation	0.294	0.68	0.088	0.44
	Model 2	(Constant)	124.288	20.23	—	6.15***
		Depletion condition	15.067	34.53	0.238	0.44
		Motivation	0.601	0.84	0.181	0.72
		Condition × Motivation	–0.920	1.45	–0.362	–0.64
African American	Model 1	(Constant)	158.437	18.20	—	8.71***
		Depletion condition	–21.222	19.12	–0.212	–1.11
		Motivation	–0.192	0.59	–0.063	–0.33
	Model 2	(Constant)	178.095	18.76	—	9.50***
		Depletion condition	–90.207	34.22	–0.902	–2.64**
		Motivation	–0.997	0.64	–0.325	–1.56
		Condition × Motivation	2.818	1.20	0.847	2.35*

*$p < .05$. **$p < .01$. ***$p < .001$.

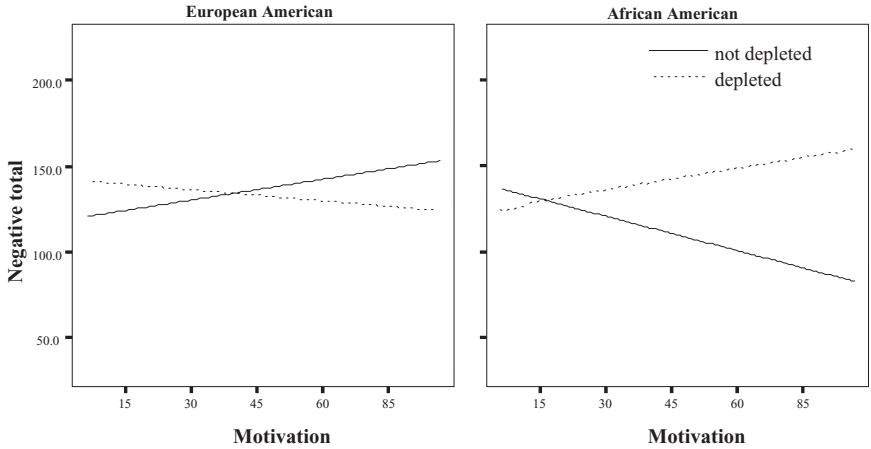

Figure 1. Negative rating of African American and European American targets, based on level of ego strength and motivation to control prejudice: Experiment 1.

expected, individuals who are not motivated to regulate their prejudices (i.e., individuals low in motivation to control prejudice) were unaffected by depletion of ego strength.

Participants' perceptions of positive traits in everyone and negative traits in European Americans were not related to their self-control efforts or their motivation to control prejudice. This means that motivation to control prejudice and previous self-control exertions do not result in a general bias to view everyone more negatively (e.g., if negative affect were driving the effect, it would presumably lead to lower ratings of both African Americans and European Americans), but instead the effects are specific to negative perceptions of African Americans. The results are consistent with the premise that individuals high in motivation to control prejudice try to inhibit their negative reactions toward African Americans. Normally they succeed, but when their ability to inhibit their reactions is diminished because of the depletion of ego strength, more negative attitudes are expressed.

The overall pattern of the results suggests that the effects are not a product of previous self-control exertions leading to negative affect that may bias the perceptions of others. Still, it would be useful to rule out negative affect or other factors, such as the difficulty of the initial task as a potential explanation. For that reason, Experiment 2 was designed to replicate and extend Experiment 1, using different means of depleting individuals' ego strength and measures of prejudiced attitudes, while measuring participants' mood, arousal, and other potential confounds.

Experiment 2

Method

Participants

Participants were 41 (22 males, 19 females) undergraduates at a large state university in the Northeast who participated in Experiment 2 in return for course credit. As in Experiment 1, all participants were European American. Their mean age was 18.8 years (SD = 1.07). Participants were tested individually in a 30-min session. Participants were told that they were participating in a study of person perception that was examining how different emotional states may affect their perceptions.

Procedure

Depletion phase. Participants began the experiment by watching a short (8-min) videotape of an Ellen DeGeneres comedy routine. Participants were randomly given one of two sets of instructions that differed in the amount of self-control required. Participants in the no-laugh condition were told that they must not let the video affect their mood. Moreover, they were instructed not to smile or laugh while watching the video. Previous research has found that having to hold back any display of humor requires a great deal of self-control and depletes individuals' ego strength (Muraven et al., 1998). The second group watched the same video. However, they were informed that the video they were going to see "May help to put you in a positive mood. Don't force yourself to feel anything, but if you feel like laughing or smiling, go right ahead." Immediately after the video, participants in both conditions completed a short manipulation check designed to assess their perception of the task.

At this point, participants also completed the Brief Mood Introspection Scale (BMIS; Mayer & Gaschke, 1988) to assess their mood and arousal. The BMIS is a well validated and reliable instrument used to assess mood valence and arousal. Participants rate their current feelings on 16 adjectives (e.g., "happy," "nervous"), using a 7-point Likert scale. The adjectives load on two mood factors: *pleasantness–unpleasantness* (i.e., valence) and *arousal–calm* (i.e., arousal). The BMIS mood factors have internal consistencies of .76 to .83 for valence and arousal, respectively, and have well established validity.

Measure of stereotyping. Participants were given a list of 12 personality characteristics (hostile, aggressive, respectful, smart, unintelligent, passive, foolish, friendly, unpleasant, likeable, intellectual, and boring) and were asked to estimate the percentage (range = 0%–100%) of African Americans

and European Americans in the general population that they felt had that characteristic. Thus, the ratings were an estimate of a population, rather than the perception of a single individual, as in Experiment 1. After they completed that task, they completed the MCPR scale (Dunton & Fazio, 1997). The overall scale had good internal reliability ($\alpha = .75$). Participants were then debriefed and excused from the experiment.

Results

Manipulation checks. Individual manipulation-check questions were combined to increase the overall reliability of the scale. Consistent with previous research (e.g., Muraven et al., 1998), participants who were instructed not to laugh reported that the task required the same amount of effort as did participants who could laugh at the video (e.g., "How difficult did you find that task?"), $t(38) = 1.64$, *ns* (6 items; $\alpha = .86$). Likewise, the task of not laughing at the video was no more unpleasant than the task of laughing at the video (e.g., "How pleasant was that task?"), $t(38) = 1.08$, *ns* (4 items; $\alpha = .84$). Not laughing required more self-control than did laughing at the video (e.g., "How much did you have to stop yourself while working on that task?"), $t(39) = 2.24$, $p < .05$ (7 items; $\alpha = .92$). Motivation to control prejudice did not differ between groups, either, $t(39) = 0.22$, *ns*. The two tasks did not differ significantly, except in the amount of self-control required.

Perception of others. Participants estimated the percentage of African American and European American individuals in the general population with each trait. As in Experiment 1, I analyzed positive (i.e., respectful, smart, friendly, likeable, and intellectual) and negative traits (i.e., hostile, aggressive, unintelligent, passive, foolish, unpleasant, and boring) separately. Coefficient alpha for negative ratings of African Americans was .87, the alpha for positive ratings was .79, and the correlation between these factors was .52 ($p < .001$). For European Americans, the alpha of negative traits was .87, the alpha for positive traits was .78, and the correlation between these factors was .29 ($p < .10$).

Repeating the analyses of Experiment 1, the data were analyzed using multiple regression with participants' perceptions of positive and negative traits of African American and European American personality traits as the outcome variable.[3] For positive traits, the interaction between MCPR and prior exertion of self-control was not significant for African American and European American targets.

[3]Alternatively, the results could be analyzed using a 2 (Depleted: yes or no) × 2 (Motivation to Control Prejudice: high vs. low) × 2 (Target: White vs. Black) × 2 (Traits: positive vs. negative) ANOVA, with the last two factors within-subjects. The four-way interaction was significant, $F(1, 38) = 4.92$, $p < .05$. As in Experiment 1, I examined the within-subject data separately, using multiple regression.

On the other hand, there was a significant interaction between MCPR and prior exertion of self-control for negative traits for African American targets, as detailed in Table 3. In particular, an examination of the simple slopes found that for participants low in MCPR (1 *SD* below the mean), there were no differences between depleted and not-depleted participants in their negative perceptions of African American targets ($B = 61.38$, $SE = 44.57$), $t(41) = 1.38$, *ns*. There was a significant difference between depleted and not-depleted participants among those high in MCPR (1 SD above the mean; $B = 72.86$, $SE = 34.31$), $t(41) = 2.12$, $p < .05$. Put another way, individuals who were not motivated to regulate their use of stereotypes rated the African American target the same, regardless of whether they recently exerted self-control. Individuals who were more motivated to regulate their use of stereotypes rated the African Americans more negatively when they were depleted than when they were not depleted (see Figure 2). As shown in Table 3, depletion of ego strength had no effect on perceptions of European American targets, however. This suggests that depletion does not lead to a general tendency to rate others more negatively.

Mood and arousal. Several additional regression analyses were conducted to test alternative models. Most notably, although there was a main effect for mood (as assessed using the BMIS; Mayer & Gaschke, 1988) on rating of negativity of African American targets ($B = -1.41$, $SE = 0.75$), $t(41) = 1.96$, $p < .05$ (participants in a more positive mood rated the targets less negatively), the interaction between depletion condition and motivation to control prejudice remained significant ($B = 1.28$, $SE = 0.59$), $t(41) = 2.19$, $p < .05$, when mood was entered in the first step. In other words, controlling for mood had no effect on the relationship between MCPR and perceptions of African American targets. A separate analysis, examining the interaction among mood and the other variables found that the three-way interaction among mood, MCPR, and condition was not significant ($B = 0.08$, $SE = 0.05$), $t(41) = 1.62$, *ns*. This indicates that mood did not have a different effect on participants high (or low) in motivation to control prejudice.

There was no main effect for arousal on ratings of negativity of African American targets ($B = 1.68$, $SE = 1.46$), $t(41) = 1.10$, *ns*. The three-way interaction between arousal, MCPR, and condition also was not significant ($B = 0.18$, $SE = 2.74$), $t(41) = 0.07$, *ns*. Arousal had no effect on how participants viewed the targets.

Discussion

The results of Experiment 2 are in congruence with Experiment 1, although Experiment 2 used very different means of depleting participants'

Table 3

Regression Equations for Ratings of Negative Traits (Experiment 2)

Race of target		Variable	*B*	*SE*	Beta	*t*
European American	Model 1	(Constant)	138.350	29.72	—	4.66***
		Motivation	0.532	0.39	0.212	1.38
		Depletion condition	–8.373	7.41	–0.174	–1.13
	Model 2	(Constant)	142.915	64.93	—	2.20*
		Motivation	0.556	0.50	0.222	1.11
		Depletion condition	–10.430	26.99	–0.217	–0.39
		Condition × Motivation	–0.064	0.80	–0.045	–0.08
African American	Model 1	(Constant)	106.812	23.42	—	4.56***
		Motivation	0.285	0.30	0.125	0.94
		Depletion condition	22.971	5.84	0.528	3.94***
	Model 2	(Constant)	204.103	47.97	—	4.26***
		Motivation	0.809	0.37	0.357	2.19*
		Depletion condition	–20.871	19.94	–0.480	–1.05
		Condition × Motivation	–1.359	0.59	–1.066	–2.29*

*$p < .05$. ***$p < .001$.

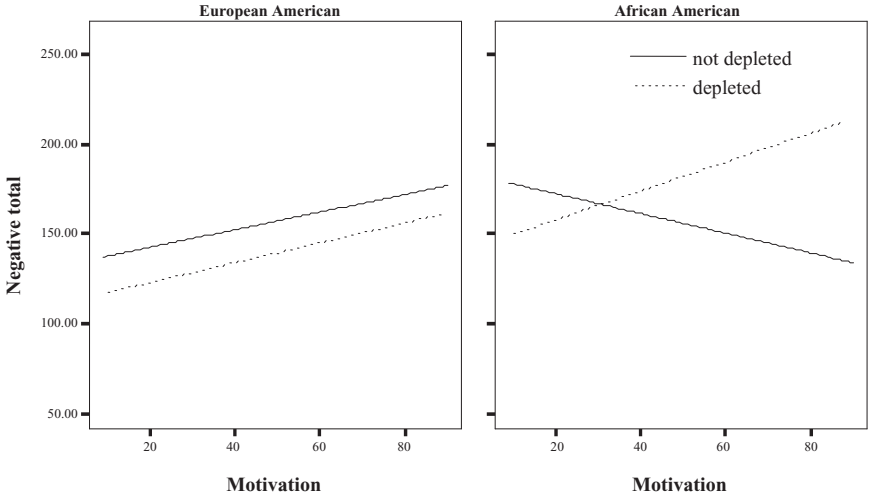

Figure 2. Negative ratings of African American and European American targets, based on level of ego strength and motivation to control prejudice: Experiment 2.

ego strength and measures of prejudicial attitudes. Most noteworthy is that participants in Experiment 1 rated an individual, whereas participants in Experiment 2 judged negative traits in the population. These are very different tasks, yet the results were markedly similar. When they were free to laugh at the video, individuals high in motivation to control prejudice rated African Americans more positively than when they were instructed not to laugh. As would be expected from individuals who are not trying to regulate themselves, the depletion of ego strength had little effect on individuals low in motivation to control prejudice.

Unlike Experiment 1, participants' mood was assessed and controlled for in Experiment 2. This lends further credence to the idea that negative ratings of African Americans were not merely a product of negative affect. Also, replicating previous research on ego strength (e.g., Muraven & Slessareva, 2003), the conditions did not differ significantly in how difficult or unpleasant they were. The only difference was the amount of self-control required.

General Discussion

The results of the two experiments indicate that, as compared to individuals who have not previously exerted self-control, participants high in motivation to control prejudice rated African American targets more negatively

after exerting self-control. Individuals who were high in motivation to control prejudice but who had to exert self-control were at least as biased (and perhaps more biased) as individuals who were low in motivation to control prejudice. They apparently had the desire, but not the means to regulate their prejudice.

Indeed, the present research is consistent with previous evidence suggesting that overcoming stereotypes requires executive control over one's thoughts (Gilbert & Hixon, 1991; Payne, 2005; von Hippel et al., 2000). Individuals high in motivation to control prejudice appear less prejudiced when their capacity to exert self-control is undiminished. However, when their ego strength is depleted, they are less able to suppress or control their thoughts of stereotypes and, hence, act in a prejudicial manner.

On the other hand, because individuals low in the motivation to control prejudice do not typically try to control their use of stereotypes (Monteith, 1993), their levels of ego strength are likely irrelevant to their levels of prejudice after the stereotype has been primed. This is consistent with previous research that has found that the depletion of ego strength has no effect on performance of tasks that do not require self-control (Muraven & Slessareva, 2003).

Under certain circumstances, the loss of the normal suppression may even lead to a rebound effect (Wegner, 1994) and produce more expressed prejudice than in individuals who normally are not trying to regulate prejudicial attitudes (e.g., see Macrae et al., 1994). This may explain the greater prejudice among depleted individuals who are high in motivation to control prejudice that was observed in the present experiments. Indeed, researchers have argued that suppressing stereotypes may deplete ego strength, which can contribute to the subsequent hyperaccessibility of the suppressed information and greater stereotyping overall (Gordijn et al., 2004).

The results of the present studies are in agreement with previous research that has found that individuals lower in self-control capacity (either permanent or temporary) are more likely to express negative attitudes about groups (Gilbert & Hixon, 1991; Gordijn et al., 2004; von Hippel et al., 2000). Gordijn et al. found that overriding prejudice requires self-control. Moreover, they found that the resulting depletion of ego strength when individuals try to prevent themselves from acting in a prejudicial manner can lead to more stereotype-consistent thoughts. The present research extends those findings to show that any depletion of ego strength (e.g., not laughing) can lead to greater discrimination.

Moreover, the present research demonstrates that the effects of depletion are limited to regulation of prejudice, as exerting self-control has no effects on attitudes toward groups that are not typically discriminated against (e.g., European Americans). Thus, it is not a general bias to rate

everyone negatively. The effects also seem to be limited to negative traits only, which suggests that individuals are being selective in their ratings of targets.

Although not much research has focused on differences between stereotyping on positive versus negative traits, these findings are consistent with other findings that have suggested that negative perceptions are more affected by stereotypes than are positive perceptions (Dovidio et al., 1997). More broadly, research has suggested that negative descriptions carry more weight than do positive descriptions (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001). Hence, in the present experiments, participants may have considered the rating of negative traits more meaningful than the rating of positive traits.

Several limitations regarding this research must be kept in mind, however. As argued previously, participants low in motivation to control prejudice, as assessed with Dunton and Fazio's (1997) MCPR scale, likely were not affected by the manipulation of ego strength because they may not have wanted to (or were unaware of the need to) inhibit their use of stereotypes. That is, the scale assessed their willingness to override prejudicial thoughts as they came to mind. This scale likely differs from Plant and Devine's (1998) measure of internal and external reasons to respond without prejudice. Indeed, in Plant and Devine's analyses of these scales, they found that the MCPR scale was only modestly related to internal and external reasons for not acting prejudiced. Future research should examine whether the MCPR and internal and external reasons for not acting prejudiced are differentially related to prejudice in depleted individuals.

As noted previously, the results suggest that the initial self-control tasks did not merely cause participants to become more negative in their outlooks because there was no main effect for self-control exertion and because the interaction between self-control demands and motivation to control prejudice was not related to expressed attitudes toward European Americans. Still, there could be something unique about exerting self-control that interacts with motivation to control prejudice that produced the expression of negative attitudes without the mediating agent of self-control. Development of more sensitive and less reactive measures of ego strength may assist in strengthening the results and ruling out alternatives.

More broadly, other factors (e.g., trait self-control) could be confounded with participants' motivation to control prejudice. The conclusion that they were not exerting self-control was consistent with prior research (e.g., Monteith, 1993), but was not assessed in the present experiment. Thus, the finding that people low in motivation to control prejudice were not exerting self-control and, hence, were not affected by depletion must be interpreted with caution.

In conclusion, the results imply that the control of stereotyping and prejudice may be a matter of self-control. Anything that interferes with self-control (e.g., short-term fatigue, concurrent loads, or even acquiescence) may result in greater use of stereotypical attitudes and more prejudice. A lack of ego strength increases the difficulty of controlling the influence of stereotypical thoughts and increases the probability that a person may behave in a prejudicial manner. On a similar note, anything that improves self-control should result in less stereotyping and prejudicial behaviors, provided that individuals are aware of the need to exert self-control.

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