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When internalization leads to automatization: The role of self-determination in automatic stereotype suppression and implicit prejudice regulation

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Abstract Recent evidence suggests that self-determined prejudice regulation is negatively related to both self-reported prejudice and automatic racial bias. However, the social-cognitive processes involved in this association have not yet been examined. Thus, the current project sought to test the 'internalization-automatization hypothesis', that is, to assess the extent to which prejudice regulation is automatic for those high and low in self-determined motivation to regulate prejudice. To this end, two different experimental paradigms were used. In Experiment 1 ($N = 84$), differences in the automatic activation and application of stereotypes were assessed for those high and low in self-determined prejudice regulation. As expected, both types of prejudice regulators showed similar stereotype activation. However, only self-determined individuals inhibited the application of stereotypes following a prime. Experiment 2 ($N = 134$), assessed the impact of self-regulatory depletion on the regulation of implicit prejudice. As anticipated, for the self-determined regulators, prejudice regulation did not vary between depleted and non-depleted individuals. However, when non-self-determined prejudice regulators were depleted, prejudice increased, relative to non-depleted controls. Results are discussed in terms of an increased understanding of prejudice regulation through self-determination. Evidence of the automatization of self-determined prejudice regulation offers promising implications for the reduction of prejudice.

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The consequences of prejudice can be devastating and far-reaching. For various interpersonal, social, cultural, and economic reasons, the understanding of prejudice is, and always has been, an important goal for social psychologists. And, within prejudice research, self-regulation comes into play as a focal topic (e.g., Allport 1954; Monteith et al. 2002; Plant and Devine 1998). Given our necessary human cognitive inclination toward categorization of the social world, stereotypes and prejudice are bound to influence behaviour toward outgroup categories in various ways. The role of self-regulation is thus crucial in diminishing the negative effects of social categorization. As we approach an understanding of those factors responsible for the effective self-regulation of prejudice, we come closer to reducing, and even eliminating, prejudice and discrimination.

Of course, self-regulation is not a simple process. From personal experience, we know that it often eludes and fails us—whether it be in the forgetting of a birthday, or the inadvertent but derogatory remark made about a member of another cultural group. Indeed, the relationship between self-regulation and prejudice reduction has yet to be fully understood. What motivational mechanisms account for successful prejudice regulation? How can the effective self-regulation of bias be facilitated—or better yet, automatized? Recent evidence suggests that being self-determined in the regulation of prejudice yields lower levels of prejudice than being non-self-determined (Legault et al. 2007). Thus, we aim to explain some of the implicit social-cognitive processes that facilitate this trend.

Specifically, we intend to determine whether the relative effectiveness of self-determined prejudice regulation, compared to non-self-determined regulation, lies in its automatization.

Motivation to be nonprejudiced

Current evidence suggests that motivation plays a role in the control of prejudice (e.g., Devine et al. 2002; Plant and Devine 1998) and even in the automatic activation of stereotypes (e.g., Moskowitz et al. 1999). For instance, Dunton and Fazio (1997) found that individuals scoring high in motivation to control prejudice demonstrated lower racism on a self-reported measure of attitudes toward Black people, and Devine and her colleagues went a step further by identifying distinct internal and external sources of motivation underlying the desire to control prejudiced responses (Plant and Devine 1998; Devine et al. 2002). Indeed, the source or type of motivation matters; internal motivation to respond without prejudice was associated with less explicit and implicit racism than was external motivation. In an attempt to further understand the link between type of self-regulation and prejudice reduction, our recent work (i.e., Legault et al. 2007) has adopted a more comprehensive theoretical perspective on motivation to regulate prejudice.

Prejudice regulation from a self-determination theory perspective

Compared to previous research that dichotomizes motivation as high-low or internal-external (e.g., Devine et al. 2002; Dunton and Fazio 1997; Fazio and Hilden 2001; Klonis et al. 2005; Plant and Devine 1998; Ratcliff et al. 2006), we have recently used a self-determination theory (SDT; Deci and Ryan 1985, 2002) framework to suggest that motivation to regulate prejudice ranges greatly in the extent to which it is self-determined or internalized (although this framework is briefly summarized below, a more complete description can be found in Legault et al. 2007).

Self-determination theory proposes a broad taxonomy of the types of regulation involved in motivated behaviors. The degree to which goals and behaviors are internalized—that is, they are initiated and regulated through autonomous choice, as an expression of the self—has a substantive impact on their experiential, behavioral, and cognitive characteristics. Thus, the more a goal, value, or behavior is self-chosen or internalized, the more it will be autonomously self-regulated through time and across situations. Similarly, to the extent that the regulation of prejudice is self-determined, that is, it is done with choice, volition, and a sense of autonomy, it will be relatively effective and effortless (Legault et al. 2007). If motivation to regulate prejudice is self-determined, it may be: *intrinsic*—such that prejudice regulation is inherently satisfying and egalitarian goals are pursued out of interest; *integrated*—wherein the regulation of prejudice is integrated within the self and core value system, and behaving in nonprejudiced ways constitutes an expression of self or a reflection of one's innermost intentions; or *identified*—meaning that goals to be nonprejudiced are seen as important, and egalitarianism is valued or personally-endorsed.

Conversely, prejudice regulation can also be determined by controls in the social context (e.g., for the purpose of social inclusion or to avoid ostracism; to appease standards of political correctness; or to acquiesce to self- imposed constraints regarding the expression of prejudice), and thus reflect low levels of self-determination. *Introjected* prejudice regulation is performed out of obligation and internal pressure; *external* prejudice regulation represents wholly external motivation and involves acting to satisfy an external demand or a social contingency. Finally, *amotivation* describes the absence or devaluation of prejudice regulation, or the sensation of helplessness in pursuing egalitarian ideals.

Evidence suggests that more self-determined forms of prejudice regulation predict lower prejudice scores than the less self-determined forms (Legault et al. 2007). This trend holds at both the explicit and implicit level of measurement. It seems that when people are self-determined in prejudice regulation, prejudice is curtailed more frequently and reliably, and with greater ease and effectiveness. SDT's process of internalization offers a motivational account for this finding—self-determined prejudice regulators have grasped the personal significance of motivation to be nonprejudiced; prejudice regulation that is autonomous and orthogonal to external contingencies is representative of personal values and easy to implement. However, an additional consideration may be that, in contrast to non-self-determined prejudice regulation, self-determined prejudice regulation is automatic.

The automatization of prejudice regulation through internalization

Why, exactly, should the self-regulation of prejudice be more efficient among self-determined prejudice regulators? Moving beyond nonprejudice as a consequence of self-determined prejudice regulation, it is of central importance to explore the notion that self-determined motivation to be nonprejudiced may be internalized to the point that prejudice regulation becomes automatic. Thanks to their

self-originating nature, the chronicity and stamina of self-determined goals make them prime candidates for automatization (e.g., Moskowitz et al. 1999). The more a goal is rehearsed, the more likely it is to become automatic, and indeed automatic motives inhabit a substantial portion of our motivational system (Bargh and Chartrand 1999; Hassin et al. 2005). In Bargh's Auto-Motive model (1990, 1999), motivation is purported to become automatic when it is well-learned; Associative environmental cues can unconsciously activate goal pursuit and go on to influence intentions and behaviour. This does not imply that those with self-determined motivation to regulate prejudice are unaware of their nonprejudiced goals. Quite the contrary, motivation toward nonprejudice is consciously self-endorsed, but once it becomes effectively rehearsed and integrated, it is also theorized to operate harmoniously and preconsciously, without the expenditure of effort. Thus, such spontaneous prejudice regulation may remain intact when distracted, tired, or when not actively using self-control. Such automaticity in self-regulation, in turn, is liable to help explain why self-determined prejudice regulation is so much more effective and consistent in reducing prejudice, especially given the toll and disruption of our everyday cognitive life.

In line with the proposed *internalization-automatization hypothesis*, it is theorized that entrenched, rehearsed, and personally-important self-determined goals to be nonprejudiced will be made chronically accessible to the point of automaticity. Thus, self-determined prejudice regulators are expected to demonstrate automatic self-control over stereotypes and prejudice, whereas non-self-determined prejudice regulators are not. In the present article, the automaticity of prejudice regulation will be explored from two distinct but converging angles: automatic stereotype activation and application (Experiment 1) and; self-regulatory depletion (Experiment 2).

Automatic stereotype activation and application: the intervening role of self-determination

An important way to ascertain whether self-determined prejudice regulators automatically self-regulate prejudice is to examine the implicit process of stereotyping, which involves stereotype activation (i.e., "turning on" the stereotype in memory) and application (using the activated stereotype to make a judgment about a target). An abundance of research has underscored the high probability that stereotypes are well-rehearsed sets of associations which are activated unconsciously, unintentionally, and effortlessly by the mere presence of category primes, and go on to influence social thought and behaviour in the form of prejudice or stereotype application (e.g., Chen and Bargh 1997; Devine 1989; Gilbert and Hixon 1991; Kunda and Spencer 2003). In order to prevent the application of an automatically activated stereotype, research suggests that one must have the motivation and opportunity to do so (Devine 1989; Fazio and Olson 2003). In other words, people require the time and energy to exercise their goals to be nonprejudiced in order to effectively regulate bias.

We argue, however, that when motivation to regulate prejudice is self-determined, the control of stereotyping and prejudice may not require the time and deliberation previously suggested (e.g., Devine 1989). Indeed, if prejudice regulation among those with a self-determined motivation to be nonprejudiced has been deeply internalized to the point of becoming automatic, *the application of stereotypes should be implicitly inhibited*. In contrast, because non-self-determined motivation to regulate prejudice has not been internalized, but rather proceeds through pressure, it is not likely to operate implicitly in reducing stereotype application. It should be noted here that, as a result of the basic cognitive need and tendency to categorize social information, we expect *both* self-determined and non-self-determined prejudice regulators to demonstrate stereotype activation. After all, in order to establish that self-determined prejudice regulation is a relatively more effective and automatic form of prejudice *regulation* per se, we must be certain that the relevant stereotypes exist in memory in the first place.

Whereas it may not be particularly surprising that self-determined prejudice regulation should predict relatively less stereotype application when the opportunity for deliberation is high (e.g., on explicit measures), we underscore that this trend is expected even when stereotype application is automatic. This assertion is supported by the previous finding that self-determined individuals demonstrate less prejudice than their non-self-determined counterparts on automatic measures (Legault et al. 2007), but also on the reasoning that a self-determined regulatory style is theorized to operate implicitly through highly valued and chronically rehearsed goals to be nonprejudiced. Furthermore, spontaneous stereotype application has been shown to be high among those who feel that stereotype suppression is an unimportant goal (Gordijn et al. 2004), and having an egalitarian goal-orientation has been shown to operate unconsciously to prevent stereotyping (Moskowitz et al. 1999).

Impact of self-regulatory depletion on prejudice

Another way to assess the automaticity of prejudice regulation is to measure the extent to which it is affected by self-regulatory depletion. Indeed, if prejudice regulation is automatic among self-determined individuals, then it should not drain self-regulatory resources, and should not

be influenced by prior depletion of self-control. According to the strength model of self-regulation (Baumeister 2002; Baumeister et al. 1998; Muraven et al. 1998), the self is a limited resource that is used for all acts of controlled processing, self-regulation, and overriding dominant responses (e.g., stereotype inhibition). Exercising self-regulation seems to produce a psychic cost, in the sense that subsequent acts of self-regulation are more apt to fail. This phenomenon of *self-regulatory depletion*, also known as ego-depletion (e.g., Baumeister et al. 1998), has been demonstrated in a wide variety of situations (Baumeister et al. 1998; Moller et al. 2006; Muraven et al. 1998; Stucke and Baumeister 2006; Vohs and Faber 2007). For example, people who refrained from eating tempting chocolates were less persistent at a subsequent problem-solving task compared to people who had not exercised impulse control (Baumeister et al. 1998). Depleted resources have also been shown to increase impulse buying (Vohs and Faber 2007) aggression (Stucke and Baumeister 2006), and vulnerability to persuasion (Wheeler et al. 2006) by impairing self-regulatory strength. In general, this extensive line of work reasons that the ability to override pre-existing patterns of response, or to exercise self-control in general, constitutes a limited resource that can become temporarily depleted after use. As a result, the depleted self is less able to carry out further acts of self-regulation.

Of course, the effects of depletion are said to apply only to behaviors and self-regulation that require controlled and effortful processing. Automatic behaviors and goals that do not tax the self's limited resource should not be affected by depletion (Muraven et al. 1998; Muraven and Slessareva 2003). Applied to prejudice regulation, it has been demonstrated that exertion of limited self-control resources leads to increased stereotyping and prejudice by limiting ability to control racial biases (Govorun and Payne 2006; Muraven 2008), and that interracial interactions are depleting such that they impair executive functioning (Richeson and Trawalter 2005).

The moderating effect of self-determined motivation on the depletion-prejudice link

Successful prejudice regulation is dependent on the availability of self-control resources. Thus, prejudice increases as a function of self-regulation failure (e.g., Muraven 2008). SDT emphasizes, however, that different regulatory approaches have differential relations to psychological energy and vitality, and therefore to depletion as well (Moller et al. 2006). In other words, the experience of self-determination is less depleting than is non self-determination (Ryan and Deci 2008; Muraven et al. 2008). Self-determined motivation is initiated and sustained by one's agentic self, whereas non-self-determined motivation involves feeling pressured by internal or external forces. When people feel autonomous in their goal pursuits, depletion effects are reduced (Moller et al. 2006; Muraven et al. 2008). In fact, according to SDT, self-determined regulation should be energizing rather than depleting (Ryan and Deci 2008). Because self-determined goals and processing objectives are important, salient, and self-congruent, it is likely they are sought and regulated with greater cognitive ease and effectiveness, and thus their motivational steering is likely to be automatic. As a result, prejudice should not be affected by depletion. In contrast, non-self-determined prejudice regulation is expected to drain self-regulatory capacity, and prejudice is hypothesized to increase when such individuals are depleted.

The present project

To summarize, the internalization-automatization hypothesis states that the more motivation to regulate prejudice is self-determined, the more it is automatic. Self-determined prejudice regulation is liable to elicit greater nonprejudice than is non-self-determined prejudice regulation because its goals to be nonprejudiced have been deeply internalized, and made chronically accessible, to the point of automatization. Non-self-determined prejudice regulation, however, is marked by a sense of self-discrepancy and motivational complexity. Because this type of self-regulation is not driven by inner volition, it is more likely to be an effortful and demanding process. We use two paradigms to assess the extent to which motivation to control prejudice is automatic. Using an automatic stereotyping paradigm, we hypothesize that automatic stereotype activation will not differ as a function of self-determined motivation to be nonprejudiced because both groups are theorized to posses the cognitive potential for making stereotypical evaluations. However, we expect that when making automatic evaluations of a target after being primed with a stereotype, self-determined prejudice regulators will display less stereotype application than non-self-determined regulators. Using a depletion framework, self-determined prejudice regulation is expected to operate without depletion of self-regulatory resources because it springs from autonomous and authentic functioning. Conversely, non-self-determined prejudice regulation is theorized to drain regulatory strength. By this logic, subjecting non-self-determined prejudice regulators to a depleting task should further thwart successful control over prejudice. However, depletion should not impair prejudice regulation among self-determined regulators. It is anticipated that the joint implementation of these two paradigms will prove

convincing in demonstrating the automatization of prejudice regulation through self-determination.

Experiment 1: The role of self-determined prejudice regulation in the automatic activation and application of stereotypes

The role of motivation to regulate prejudice in the process of automatic stereotyping was assessed. More specifically, the objective was to determine whether self-determined and non-self-determined prejudice regulators simply possess different levels of stereotype accessibility or, rather, differences in the ability to control the application of stereotypes. It was anticipated that those high and low in self-determined motivation to regulate prejudice would experience similar levels of stereotype activation, for the following reasons: Evidence suggests that people have stereotypic knowledge structures regardless of their motivational orientation or level of prejudice (e.g., Devine 1989), and; self-determination in prejudice regulation is theorized to operate implicitly in controlling the expression of racial bias rather than be a reflection of variance in the accessibility of stereotypes and prejudice. Thus, level of self-determination was not expected to moderate stereotype activation.

In contrast, we hypothesized that the automatic application of stereotypes would differ between those high and low in self-determined prejudice regulation. That is, in response to Black stereotype primes, we expected those with a non-self-determined motivation to control prejudice would demonstrate greater stereotype application than those with a self-determined orientation—in the form of increased attributions of *hostility* toward a target. As has been noted in previous work, hostility is a key component of the Black stereotype; Devine 1989; Devine et al. 2002). In addition, we expected that an interaction between level of self-determination and prime condition would reveal that self-determined prejudice regulators who were primed with the Black stereotype would not make significantly more stereotype applications than their non-primed controls. On the other hand, because non-self-determined prejudice regulators are theorized to be ineffective at controlling racial bias, it was expected that they would apply more stereotypes when primed than when not primed.

The present study was divided into two experimental tasks. Thus, the experiment consisted of an initial *activation* phase and a subsequent but methodologically unrelated *application* phase. In the activation phase, Asian stereotypes were automatically activated. In a discrete application phase, a different set of stereotypes (Black stereotypes) were *primed*, and then participants were given the opportunity to apply them or not.

Method

Participants and design

Participants were 84 Caucasian undergraduates at the University of Ottawa participating for partial course credit (58 females; 26 males). The *Motivation to be Nonprejudiced Scale* (Legault et al. 2007) was administered to students 4 weeks prior to testing. A global self-determined regulation of prejudice index (SDRPI) was calculated using a standard formula that gives a weight to each dimension according to its position on the continuum (and thus its relative level of self-determination). Thus, as per previous studies using this technique (e.g., Ryan and Connell 1989), self-determined forms of motivation to regulate prejudice were assigned weights of +3, +2, and +1, while weights for the non-self-determined forms were specified as −1, −2, −3. Weighted scores were then summed and divided by the number of variables in the equation. This relative index was divided at the median in order to contrast those high and low in self-determined prejudice regulation. This method has the advantage of considering the weighted value of each motivational dimension, as well as allowing the parsimonious assessment of associations between level of self-determination and prejudice using two motivational constructs rather than six.

Participants scoring above and below the SDRPI median were separately but randomly assigned to experimental (i.e., prime) and control (i.e., no-prime) conditions. Two between-subjects factorial ANOVAs were employed (one for each experimental task); 2 (motivation: self-determined vs. non-self-determined) × 2 (prime vs. none).

Procedure

Upon arrival at the laboratory, participants were informed that they would complete two separate studies assessing language ability. The first study was a fill-in-the-blank task lasting 10 min, and the second was a sentence-unscrambling task lasting 15 min. Between studies participants were given a 10 min break in order to reduce any effect the first task might have had on the second.

"Task A": Stereotype activation phase

Adapted from Gilbert and Hixon (1991), participants were instructed to watch a DVD clip of either an Asian or a Caucasian confederate (the independent variable or prime) who displayed a sequence of 12 word fragments. In both conditions, there were 6 neutral word fragments and 6 word fragments that could be completed in such a way that either confirmed or disconfirmed an Asian stereotype. For instance POLI___E could be competed as "polite" or

"police"; S__ORT could be completed as either "short" or "sport" (or some other non-stereotyped word). The on-screen confederate displayed the word fragments for 3 s. Participants were instructed to write their responses as quickly as possible, as soon as the word came to mind, on the sheet provided.

In word-fragment completion tasks (Gilbert and Hixon 1991), an automatic stereotype is assumed to be operating if participants provide more stereotypic word completions in the presence of the stereotype target. Automatic stereotype activation is thought to be occurring because participants are unlikely to be aware that the target's group membership had any influence on their responses (Kunda and Spencer 2003). Thus, this method relies on unawareness of the link between the stimuli (prime) and the required response.

"Task B": Stereotype application phase

After a 10 min break, participants were administered either a Black stereotype prime or were presented with neutral stimuli. In addition to the rest period between studies, the racial target was changed in order to reduce the carry-over of any stereotype priming effects. Each participant completed 32 scrambled sentences. In the control condition, every scrambled sentence was unrelated to the Black stereotype. In the priming condition, 12 of the sentences contained words related to the Black stereotype, such as "black"; "poor"; "jazz"; "hip-hop"; "basketball", and so on. Participants were instructed to create a grammatically correct sentence using any four of the five words provided. They were instructed to complete the task as quickly as possible, writing down the first complete sentence that came to mind. Immediately following the sentence descrambling, participants were asked to complete an ostensibly unrelated task that assessed "the way in which people form impressions of others". In this task, all participants read a paragraph describing a day in life of a man named Mike (i.e., "The Donald Paragraph"; Devine 1989; Gilbert and Hixon 1991; Srull and Wyer 1979). The script presents a man engaging in a series of ambiguously hostile behaviours, such as refusing to pay his rent and demanding his money back from a store clerk. Mike's behaviour is presented in a neutral and non-evaluative fashion, and perceivers may or may not attribute Mike's actions to hostility. After reading the paragraph, participants were asked to rate Mike along several evaluative dimensions, most notably hostility, which is an African American stereotype (Devine 1989).

Stereotype application, while often described in research as an explicit judgment of a member of a stereotyped group, can also be automatic if the respondent is not aware of the influence of a stereotype prime on their appraisal of a target (Kunda and Spencer 2003). This is referred to as attentionless processing—as the respondent is aware of the prime, but not aware of its influence (Bargh 1999). Because participants were told that the tasks looked at different aspects of language ability and impression formation, they were not made explicitly aware that the experiment assessed racial categorization and evaluation. Nonetheless, at the end of the experiment, participants were asked whether they perceived a link between the prime (scrambled sentences) and response (evaluation of Mike). They were also questioned about whether they believed tasks A and B were related.

Instruments

Motivation to be nonprejudiced scale (Legault et al. 2007)

The MNPS assesses respondents' ultimate reasons for refraining from prejudice. Items are based on the six dimensions of motivation outlined by Self-Determination Theory, and serve to distinguish between self-determined and non-self-determined prejudice regulation. Participants were asked to rate the extent to which items corresponded to their "ultimate reasons for regulating cultural prejudice" on a 9-point Likert scale (1 = does not correspond at all; 5 = corresponds moderately; 9 = corresponds exactly). Examples from the self-determined dimensions include "Because striving to understand others is part of who I am"; "Because I value nonprejudice"; and "Because tolerance is important to me". Items representing non-self-determined prejudice regulation include "Because racist people are not well-liked"; "I don't know why; it's pointless"; and "Because I get more respect/acceptance when I act in an unprejudiced fashion". The six-factor structure of the MNPS has been validated by means of a confirmatory factor analysis, and the subscales have demonstrated high internal consistency ($\alpha = .76$ to .90), as well as construct validity, concurrent validity, and predictive validity (Legault et al.). As is comparable to previous studies, reliability of the MNPS subscales in the current study ranged from $\alpha = .80$ to $\alpha = .89$.

Stereotype activation: Word fragment completion

Number of stereotypes completed in the activation task were counted—up to a maximum of 6. Potentially stereotypic word fragments included: S__Y; POLI__E; QU_____; S__ORT; N__P; and RI__E.

Stereotype application: Hostility of Mike

(Adapted from "The Donald Paragraph, Srull and Wyer 1979). Participants were asked to read about Mike, a

character engaging in a series of ambiguously hostile actions. Participants were then asked to rate Mike's hostility on a Likert-type scale, ranging from 0 (not at all) to 10 (extremely).

Results

Preliminary analyses: Establishing automaticity

Preliminary analyses assessed whether participants were consciously aware of the presence of racial primes. For the first task, the Asian stereotype activation task, none of the participants revealed an awareness of the stereotype prime, suggesting that activation occurred automatically. For the Black stereotype application task, it was not surprising that 54% of participants in the prime condition reported that they detected Black stereotypes in the scrambled sentences. Indeed, the scrambled sentence task was designed to activate the Black stereotype—making it accessible for application. However, none of the participants suspected that their subsequent evaluation of "Mike" was related to the sentence descrambling task. Participants' lack of awareness of the links between the priming stimuli and their response suggested attentionless processing, a feature of automaticity. These results suggest that both stereotype activation (in Task A) and application (in Task B) were automatic.

Main analyses

Automatic stereotype activation

Main effects of motivation and priming were examined, as was the motivation x priming interaction. Thus, the frequency of stereotypic word completions were entered into a 2 × 2 between-subjects ANOVA based on participants' motivational orientation (self-determined versus non-self-determined) and the presence of Asian priming stimulus (Asian versus Caucasian confederate). All means and standard deviations used in this analysis are presented in Table 1. A main effect of prime condition indicated that those presented with the Asian prime demonstrated greater stereotype activation than those presented with the Caucasian prime, $F = 11.68$, $p = .001$, partial $\eta^2 = .13$. This finding suggests that the prime manipulation was successful in activating the Asian stereotype. In line with expectations, level of motivation did not reveal a significant main effect; differences in stereotype activation between self-determined and non-self-determined prejudice regulators were negligible, $F < 1$. Not surprisingly, the motivation × prime interaction was not significant, $F < 1$.

Table 1 Experiment 1: impact of self-determination and stereotype prime on Asian stereotype activation and black stereotype application ($N = 84$)

	Self-determined	Non-self-determined	Total
Stereotype activation			
Prime	**2.61**	**2.61**	**2.61**
	1.41	*1.59*	*1.48*
	($n = 23$)	($n = 23$)	($n = 46$)
No Prime	**1.65**	**1.56**	**1.61**
	1.18	*1.04*	*1.10*
	($n = 20$)	($n = 18$)	($n = 38$)
Total	**2.16**	**2.15**	
	1.38	*1.46*	
	($n = 43$)	($n = 41$)	
Stereotype application			
Prime	**4.45**	**8.23**	**6.34**
	1.76	*.97*	*2.37*
	($n = 22$)	($n = 22$)	($n = 44$)
No Prime	**5.38**	**6.37**	**5.85**
	1.39	*1.64*	*1.58*
	($n = 21$)	($n = 19$)	($n = 40$)
Total	**4.91**	**7.37**	
	1.64	1.61	
	($n = 43$)	($n = 41$)	

Note: Standard Deviations are presented in italics, below the bolded means

Automatic stereotype application

Participants' hostility ratings of Mike were entered in a 2 (self-determined vs. non-self-determined) × 2 (prime vs. none) between-subjects ANOVA. Main effects of motivation and priming were once again examined, as was the motivation × prime interaction. Planned contrasts of priming were computed for self-determined and non-self-determined groups separately. All means and standard deviations used in these analyses are presented in Table 1.

A main effect of motivation was obtained, $F = 54.91$, $p < .001$, partial $\eta^2 = .41$. Thus, on average, self-determined prejudice regulators demonstrated less stereotype application than non-self-determined prejudice regulators. As expected, the main effect of prime condition was not significant, $F = 2.11$, $p = .15$. Moreover, a significant motivation × prime interaction was revealed, $F = 18.80$, $p < .001$, partial $\eta^2 = .19$. An examination of planned comparisons for this interaction demonstrated that self-determined prejudice regulators did not display

significantly greater stereotype application when they were primed compared to when they were not primed, $F = 3.62$, $p = .064$. However, non-self-determined prejudice regulators showed significantly greater stereotype application when primed, compared to their non-primed controls, $F = 20.12$, $p < .001$, partial $\eta^2 = .34$.

Brief discussion

It was hypothesized that self-determined and non self-determined prejudice regulators would show similar stereotype accessibility. However, we expected that differences would be revealed in the extent to which stereotypes were automatically applied in making hostile evaluations of a target. These hypotheses were supported using two separate experimental priming tasks. Thus, it appears that, despite the stereotypic associations that are activated in working memory to provide the knowledge and capacity for prejudiced responding, self-determined prejudice regulation (but not non-self-determined prejudice regulation) effectively intervenes before these stereotypes are applied. In other words, self-determined prejudice regulators are able to automatically inhibit stereotypes before they are used in making negative evaluations. This finding sheds important supplementary light on the nature of prejudice regulation among self-determined individuals by establishing that their superior prejudice regulation is not simply an artifact of an absence of stereotypic associations in memory, but rather a result of automatized prejudice regulation. In fact, these individuals inhibited stereotype application so effectively that they displayed slightly fewer stereotype applications than their non-primed controls. Results offer support for the internalization-automatization hypothesis by demonstrating that self-determined prejudice regulators implicitly suppress the application of stereotypes, whereas non-self-determined prejudice regulators do not.

Although not yet linked to SDT, previous work has demonstrated that motivation can alter stereotype activation and application (Gilbert and Hixon 1991; Kawakami et al. 2000; Moskowitz et al. 1999; Sinclair and Kunda 1999). An interesting contribution of the current study, however, resides in refining the unconscious location of self-determined prejudice regulation; self-determined prejudice regulation is thought to occur somewhere between the activation of stereotypes in the mind, and the *automatic* use of those stereotypes in making prejudiced judgments. So, unlike what Devine (1989) suggests, having an internalized motivation to suppress prejudice is expected to do more than just reduce controlled and deliberative judgment—it is expected to operate implicitly in the evaluation of stereotype targets. Indeed, Experiment 2 is expected to offer further evidence of this assertion.

Experiment 2: The moderating role of self-determined prejudice regulation in the link between depletion and prejudice

Despite evidence of the influence of self-determined prejudice regulation on prejudice (Legault et al. 2007), as well as the finding in Experiment 1 that self-determined prejudice regulation appears to operate automatically to prevent the application of stereotypes, the reasons why self-determined regulation is effective at the implicit level require further clarification. In Experiment 2, supplementary evidence was sought to corroborate the proposition that self-determination facilitates automatic prejudice regulation. Thus, the automaticity of prejudice regulation was assessed from an alternate angle. Namely, the moderating effect of self-determined prejudice regulation in the association between self-regulatory depletion and prejudice was examined.

If prejudice regulation is automatic, it should not demand self-regulatory resources. Accordingly, the regulation of biased responses on the Race Implicit Association Test (IAT) should not require controlled processing.[1] Individuals are required to override dominant prejudiced responses on the Race IAT, which requires effort, and which manifests in elevated response latencies on prejudiced-incongruent trials. But, because people with a self-determined prejudice regulation have deeply internalized their nonprejudiced standards and experience a sense of autonomy in being egalitarian, we hypothesized that their prejudice regulation would occur automatically, requiring minimal cognitive effort. As such, self-determined prejudice regulators should not demonstrate lapses in prejudice regulation as a consequence of depletion. *Thus, for those with a self-determined regulation of prejudice, no differences in implicit prejudice were expected between depleted and non-depleted groups.*

Conversely, non-self-determined prejudice regulation is presumed to require more effortful control since it does not

[1] The Race IAT, used in the current research, measures implicit race bias by assessing people's tendency to associate positive evaluations with White people and negative evaluations with Black people, and vice versa. Caucasians tend to categorize stereotype congruent concepts (e.g. White-Good) more quickly than stereotype-incongruent concepts (e.g. Black-Good). What is particularly relevant for the issue of depletion is that the IAT contains both an automatic and a controlled component. The automatic association is made in the stereotype-congruent pairing task, while controlled processes are required to override the dominant (i.e., stereotyped or prejudiced) response on the stereotype-inconsistent pairing task. Because respondents are required to make non-stereotypical responses, cognitive resources and control are said to be required. Presumably, performance on the stereotype-inconsistent task, for which self-regulation is required, will deteriorate when individuals are depleted, resulting in longer response latencies and greater automatic racial bias. Thus, to the extent that prejudice regulation taxes regulatory strength, self-regulation will fall short when it is depleted.

stem from a self-chosen value orientation. As such, it should be more adversely affected by regulatory depletion. *Thus, individuals with non-self-determined regulation were expected to display heightened prejudice when their resources were depleted, compared to when they were not depleted.* Vitality was also measured as a supplementary indicator of depletion. We expected that prejudice regulation on the IAT would be less draining of vitality among highly self-determined prejudice regulators than among those with a low self-determined motivation to control prejudice.

Method

Participants, design, and procedure

Introductory psychology students attending the University of Ottawa participated in the experiment in exchange for partial course credit. As in Experiment 1, undergraduates completed the MNPS and a global self-determined regulation of prejudice index (SDRPI) was calculated. In order to further manipulate the independent variable of motivation prior to the lab study, a tercile split was performed on SDRPI scores before those high and low in self-determined prejudice regulation were invited to complete the IAT ($N = 135$; 99 female; 36 male). Members of cultural minorities were excluded in order to focus the investigation on Caucasian people's attitudes toward Black people. Moreover, only participants indicating that they were motivated to regulate prejudice were retained (however, 95% of respondents favoured this intention). To examine the effect of depletion, participants were randomly assigned to either a task designed to deplete self-regulatory capacity, or a non-depleting control task. Thus the experimental design was a 2 (high self-determined vs. low self-determined) $\times$ 2 (depletion vs. control) factorial.

Upon arrival at the lab, participants reported their baseline vitality before undergoing the depletion manipulation, followed by a series of manipulation verification measures (described below). They were then instructed to complete the IAT as quickly and accurately as possible. After the IAT, participants again rated their level of vitality, task depletion, self-regulation, mood, and intrinsic motivation. Participants were then debriefed, thanked for their participation, and dismissed.

Independent measures

Motivation to be nonprejudiced scale (MNPS; Legault et al. 2007)

The MNPS was once again administered to assess respondents' ultimate reasons for refraining from prejudice. In the current study, subscale reliability (i.e., Cronbach's alpha) ranged from .80 to .85.

Self-regulatory depletion

Participants in the depletion condition completed the two-step self-regulation task designed by Baumeister and his colleagues (1998), and recently validated by Wheeler et al. (2006). This task has been shown to deplete self-regulatory resources, leaving less energy for subsequent acts of self-control (Baumeister et al. 1998; Wheeler et al. 2006). All participants were given a page of type-written text and asked to spend 2 min circling every instance of the letter *e*.[2] To enact self-regulatory behavior, participants in the experimental condition were then instructed to circle every instance of the letter *e* with several exceptions (e.g., if it was one-letter removed from a vowel, if it preceded an *l* or an *r,* etc.). The control group was not given any regulatory instructions for the *e*-circling task. Thus, in the experimental condition, the *e*-circling task required participants to carefully monitor their decisions and override their baseline response of circling every single *e*.

It is important to underscore that the depletion task used in the current study represents a substantive methodological departure from the cognitive busyness task used in Devine et al. (2002). In Devine et al., participants were required to listen to a tape recording whilst completing the IAT, and call out all instances of the letter *t*. Although the current methodology aims to extend that of Devine et al., our depletion task follows the methods and rationale of Baumeister and his colleagues, in that it is designed to deplete self-regulation prior to a subsequent act of self-regulation, rather than simply to serve as a distraction from proper IAT responding.

Manipulation verification measures

Subjective vitality scale (Ryan and Frederick 1997)

To verify whether the experimental manipulation of depletion was effective, participants were asked to complete the Subjective Vitality Scale at the beginning of the study and after each task. The eight items on the Subjective Vitality Scale reflect a phenomenological sense of vitality and aliveness. Participants were asked to rate each statement (e.g., "I feel energized") on a 7-point Likert scale ranging from "not at all" to "completely." The scale's psychometric properties have been validated in two large

[2] The text used in the depletion manipulation was a page from a statistics textbook, whose content was unrelated to the goals and parameters of the present study.

college samples (Bostic et al. 2000). In the current sample, Cronbach's alpha was $\alpha = .79$.

Self-reported depletion and self-regulation exerted on depletion task

Using a Likert scale from 1 to 11 (1 = Not at all; 11 = Extremely/All the time), a manipulation check was developed for the purpose of the present study to assess the extent to which the *e*-task depleted self-regulatory resources (3 items; e.g., "Did you find the task to be draining?"). Participants also reported how much self-regulation the task required (3 items; e.g., "How much were you fighting against an urge while completing the task?").

Brief mood introspection scale (BMIS; Mayer and Gashke 1988)

The BMIS measures mood valence and arousal. Participants rated the extent to which 11 adjectives (e.g., happy, tense) described their current mood. Responses were given on a 9-point scale (1 = Very much; 9 = Not at all). The BMIS was included to confirm that any effects resulting from the experimental manipulation could not be attributed to differences in mood induced by the *e*-task.

Intrinsic motivation

Participants were asked to rate the extent to which they felt intrinsically motivated toward the *e*-task and the IAT. Intrinsic motivation was thus measured twice (3 items; $\alpha = .85$; e.g., "How interesting was the task?"). Responses were given on an 11-point scale (1 = Not at all; 11 = Extremely). The purpose of these items was to address the concern that variability in depletion throughout the experiment may actually be a function of differences in participants' motivation toward the tasks. Thus, this measure was used to ensure that variations in responses between high and low self-determined groups could not be attributed to differences in their intrinsic motivation for the activities designed to manipulate depletion.

Dependent measures

Implicit association test (Greenwald et al. 1998)

The Race face IAT was used to measure the evaluative associations that underlie White participants' implicit prejudice toward Black people. The IAT program was run using Inquisit 2.0 software.

Subjective vitality scale (Ryan and Frederick 1997)

The vitality measure that was previously described as a manipulation check measure was also used as a complementary measure of depletion, to help elucidate the interaction of motivation and depletion on racial prejudice. Therefore, it was administered thrice—at the start, after the e-task, and after the IAT.

Results

Preliminary analyses

Manipulation check of the depletion task: Vitality, depletion, self-regulation, and mood

We reasoned that if the experimental manipulation was successful, then participants in the depletion condition would show a significantly greater decrease in vitality compared to participants in the control condition. As can be seen in Table 2, this was indeed found to be the case. It should be noted that changes in vitality scores were first calculated within-subjects, as the difference in vitality from baseline to post-depletion. Compared to controls, participants in the experimental condition also found the *e*-circling task to be more tiring, and to require greater self-regulation. These analyses indicated that the depletion manipulation had the intended effect of taxing self-regulatory resources. On the mood valence factor of the BMIS, depleted and non-depleted participants did not differ, indicating that effects of the self-regulation task cannot be

Table 2 Experiment 2: depletion induction on the self-regulation task ($N = 134$)

Manipulation check	Low depletion task *M* (*SD*)	High depletion task *M* (*SD*)	*F*	*df*
Drop in vitality	−2.73 (6.13)	−5.47 (6.32)	6.36*	1,134
Fatigue	3.56 (2.44)	6.46 (1.88)	49.06***	1,134
Self-regulation	3.45 (2.31)	6.11 (2.09)	49.06***	1,134
Mood				
Pleasantness	2.68 (1.21)	2.96 (1.16)	1.16	1,134
Arousal	3.27 (1.07)	3.44 (1.02)	<1	1,134

Note: Theoretically, scores range from 1 to 10; * $p < .05$; *** $p < .0001$

attributed to differences in affect. Likewise, no differences in arousal were found.

Controlling for intrinsic motivation

We anticipated that variability in depletion and vitality throughout the experiment would not be attributable to participants' varying levels of motivation toward the tasks (i.e., the e-task and the IAT). As predicted, participants high ($M = 6.06$; $SD = 1.98$) and low ($M = 5.66$; $SD = 2.41$) in self-determined prejudice regulation did not display significantly different levels of intrinsic motivation toward the *e* task, $F(1, 132) = 1.11$, $p = .29$. With respect to the IAT, the high self-determined group ($M = 8.41$; $SD = 1.82$) and the low self-determined group ($M = 7.95$; $SD = 1.83$) again showed no significant differences in intrinsic motivation, $F(1, 132) = 2.15$, $p = .15$. Since both groups completed the tasks with comparable levels of intrinsic motivation, we can be reasonably certain that the depletion effect on IAT scores is not an artefact of apathy toward the experimental tasks among those with non-self-determined prejudice regulation.

Main analyses

Main effect and interaction

A 2 × 2 analysis of variance (ANOVA) was conducted to evaluate the effects of motivation and depletion on implicit prejudice. IAT *D* scores were calculated according the scoring algorithm recommended by Greenwald et al. (2003). Results indicated a significant main effect of motivation, $F(1, 134) = 22.25$, $p < .001$, partial $\eta^2 = .15$. Thus, those with a highly self-determined prejudice regulation showed significantly less prejudice ($M_{\text{DScore}} = .34$; $SD = .32$) than those with less self-determined prejudice regulation ($M = .64$; $SD = .37$). Moreover, a significant interaction between motivation and depletion was obtained, $F(1, 134) = 4.50$, $p < .05$, partial $\eta^2 = .03$, supporting the hypothesis that motivation to regulate prejudice moderates the relationship between depletion and prejudice (see *main comparisons*, next). Not surprisingly, the main effect of depletion was not significant.

Main comparisons

We hypothesized that depletion would increase prejudiced responding among those low in self-determined prejudice regulation, but not among self-determined individuals. A Bonferroni's correction was used to control for Type I error across the two planned comparisons. IAT *D* scores are displayed in Fig. 1. Among the low self-determined group, participants who underwent self-regulatory depletion showed significantly more implicit prejudice than those in the non-depleted condition, $F(1, 66) = 5.57$, $p < .025$. However, when motivation to regulate prejudice was self-determined, depleted and non-depleted participants showed similar IAT scores (in fact, the depleted group showed slightly less implicit prejudice—although this difference was not significant).

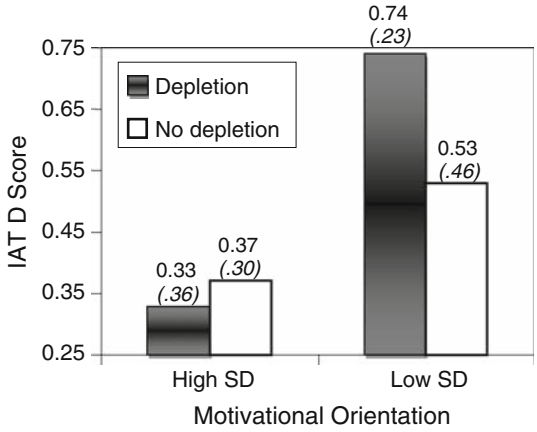

Fig. 1 Experiment 2: Moderating impact of motivation on the link between depletion and prejudice on the IAT. *Note*: Standard deviations are presented in parentheses, below the means. High SD = high self-determination to regulate prejudice; Low SD = low self-determination to regulate prejudice

Vitality

To supplement our focal analysis of the impact of self-determination on the relationship between depletion and prejudice, vitality levels were calculated within-subjects at three time points (baseline, post-depletion, and post-IAT). An association between vitality and self-determined motivation has been shown in previous research (e.g., Moller et al. 2006; Muraven et al. 2008; Ryan and Deci 2008; Ryan and Frederick 1997). Moreover, deficits in vitality are expected when individuals are depleted (Baumeister et al. 1998). Both self-determined and non-self-determined prejudice regulators displayed similar decreases in vitality when depleted (i.e., from baseline to pre-IAT; $M = -5.74$; $SD = 5.82$; $M = -5.23$; $SD = 5.56$, respectively). However, the highly self-determined prejudice regulators displayed significantly greater increases in vitality ($M = 5.21$; $SD = 7.13$) from pre-IAT to post-IAT, compared to their less self-determined counterparts ($M = 2.03$; $SD = 5.46$), $F(1, 66) = 3.70$, $p < .05$). In fact, this recovery in vitality represented a complete return to baseline ($M_D = 1.06$; $SD = 6.73$, $t < 1$) for the self-determined group, whereas the less self-determined prejudice regulators did not recover their vitality (i.e., post-IAT vitality was significantly lower than baseline; $M_D = -2.47$, $SD = 6.78$, $t(33) = 2.13$, $p < .05$). Thus, among depleted participants, the IAT appeared to have a

vitalizing effect for those with a self-determined regulation of prejudice. These results align with the additional finding that the self-determined group reported using less self-regulation on the IAT ($M = 4.53$; $SD = 1.94$) than those with less self-determined prejudice regulation ($M = 5.72$; $SD = 2.15$), $F(1, 66) = 5.76$, $p < .05$).

Brief discussion

Firstly, results of Experiment 2 support the previously documented finding that self-determined motivation to be nonprejudiced is an important factor in the reduction of racial bias (Legault et al. 2007). That is, a main effect of motivation suggests that individuals who are self-determined in the regulation of prejudice are more successful at upholding their nonprejudiced standards, compared to nonself-determined prejudice regulators. Moreover, because self-determined motivation is an autonomous expression of self, its regulation appears to be implicit and resilient to depletion. On the other hand, when the self-regulatory resources of less self-determined prejudice regulators are depleted, they reveal heightened prejudice compared to their non-depleted counterparts. This interaction finding diverges from results reported by Devine et al. (2002), who did not find that the pattern of IAT responding among internally and externally motivated participants was influenced by cognitive busyness. In their study, both motivation groups were distracted by the busyness task, as measured by longer overall response latencies. However, there was no interaction between motivation level and cognitive load on IAT scores. Our results, in contrast, suggest that non-self-determined regulatory efforts were indeed impaired by depletion, while self-determined regulation was not. In fact, self-determined regulators showed less prejudice when depleted, suggesting a spontaneous prejudice suppression. Our unique results are likely attributable to two main differences from Devine et al.'s (2002) work: (1) our depletion task was designed to drain self-regulatory strength in a sequential manner (as per the strength model of self-regulation; Baumeister et al. 1998), rather than to serve as a cognitive load/distractor *during* IAT responding, and; 2) our consideration and measurement of the full range of SDT factors in the context of prejudice control.

General discussion

The automaticity of self-determined regulation

The goal of the present research was to demonstrate that the relative success of self-determined prejudice regulation in reducing stereotyping and prejudice is the result of automatized self-regulatory processes. To this end, differences in the automatization of prejudice regulation were assessed for self-determined and nonself-determined prejudice regulators. Together, results of experiments 1 and 2 suggest that the comparatively lower level of prejudice associated with a self-determined motivation to be non-prejudiced is the result of superior automatized regulatory functioning. In other words, the lower prejudice scores found among those with highly self-determined prejudice regulation are not merely a function of the absence of stereotypes, but rather due to internalized, personalized, and efficient self-regulation that implicitly inhibits stereotype application and remains impervious to self-regulatory depletion. In contrast, non-self-determined motivation to be nonprejudiced results in greater racial bias (i.e., both stereotype application and prejudice) due to its less capable and more effortful regulatory functioning.

This research is among the very first to explore the notion that the automatization of self-regulation is facilitated by self-determination. Thus, in addition to furthering our understanding of the factors that influence prejudice and stereotyping, this work has a broad implication for the role of automatic processes in self-determination theory. That is, the current results offer new evidence of automatic self-determined regulation. From the present findings we can infer that the suppression of prejudice and inhibition of stereotypes does not require conscious attention, energy, or effort among individuals with self-determined goals to be egalitarian. The implication of this finding for SDT is the possibility that self-determined motivation (in any domain) can become internalized to the extent that its self-regulation occurs at the automatic level. The automatic operation of self-determined motives helps to explain their potent influence in daily life (i.e., self-determined motivation is not affected by cognitive fatigue or decreases in self-control).

Corresponding evidence does suggest that motivation can be, at least in part, automatically activated and regulated by nonconscious processes (Gollwitzer and Bargh 2005). As described in Bargh's Auto-Motive model (Bargh 1990, Bargh and Chartrand 1999), automatic motivational processes refer to goal pursuits that are consistently and frequently engaged by the mere presence of relevant environmental cues. When goals are repeatedly associated with their related stimuli, they become automatically activated and subsequently influence behaviour. Appropriately, researchers have referred to this process as 'automatic motivation' (Gollwitzer and Bargh; Hassin et al. 2005). For instance, Glaser and Knowles (2008) have recently proposed that goals to be egalitarian may indeed operate outside conscious awareness and control, and serve to inhibit unintended and automatic prejudice and behaviour. Moskowitz et al. (1999) have demonstrated that one's commitment to egalitarian goals can lead to control over

the preconscious stages in which categorization occurs and stereotypes are activated (whereas nonegalitarians did not automatize stereotype inhibition). It has also been revealed that motivation can be unconsciously primed to influence behaviour. For instance, Levesque and Pelletier (2003) primed participants with intrinsic and extrinsic motivation and found that those primed with intrinsic motivation showed greater interest and persistence on a subsequent puzzle task. Similarly, individuals primed with intrinsic motivation have been shown to experience greater psychological well-being compared to no-prime controls (Burton et al. 2006). Burton et al. also note that identified regulation operates implicitly, which is likely to explain its powerful influence over behaviour; they found that people with implicit identified regulation experienced greater academic performance six weeks later. Indeed, research underscores the presence and power of unconscious motives, especially self-determined ones.

Self-determination theory (Deci and Ryan 1985, 2002) offers an explanation for the superior prejudice regulation among self-determined individuals: People who have internalized the regulation of prejudice have grasped the personal significance of egalitarianism, and have synthesized its meaning with other aspects of their self-concept. Nonprejudice is personally valued and congruent with their self-view. For these individuals, maintaining nonprejudiced attitudes is accompanied by a sense of choice, volition, and freedom from external demands. The more internalized and self-endorsed the motivation, the more it is effectively and reliably regulated. On the other hand, non-self-determined prejudice regulation may be focused toward external demands or contingent outcomes and is thus less reliable. In general, our findings are consistent with previous research on the relationship between motivation and the self-regulation of prejudice (Devine et al. 2002; Klonis et al. 2005; Legault et al. 2007; Moskowitz et al. 1999; Ratcliff et al. 2006).

Although it is validating that studies are beginning to show that self-determined motivation can be automatic, it is important to note that the current research goes a step further in providing an empirical explanation for how self-determined regulation facilitates automatization, whereas nonself-determined regulation does not. Indeed, the process of internalization offers an explanation for how attitudes may become automatized. Self-determined motivation is associated with more persistent adherence to one's values and goals. Regulation that is practiced more consistently is more likely to be overlearned and habitualized (Bargh and Chartrand 1999; Levesque and Pelletier 2003). The automatization of attitudes and behaviors would help to explain why self-determined regulation is more effective and efficient than non-self-determined regulation. Consequently, in contrast to the assertion made by Baumeister and his colleagues (e.g. Baumeister et al. 1998), not all acts of self-regulation are depleting. Rather, being self-determined in one's goals and attitudes may not only spare self-regulatory resources, but be vitalizing as well (e.g., Moller et al. 2006; Muraven et al. 2008; Ryan and Deci 2008). Indeed, the current findings suggest that nonprejudiced responding has a vitalizing effect for those high in self-determined motivation to be nonprejudiced.

Future research on the automaticity of self-determined regulation

Apart from the internalization process, it is of interest for future studies to consider additional factors contributing to the automatization of self-determined motivation. Indeed, it has been theorized herein that motivational pursuits are more likely to become automatized when they are chronically rehearsed, personally self-endorsed, and associated with desired outcomes or goal-objects. In line with the Auto-Motive Model (Bargh and Chartrand 1999) and classic learning theories (e.g., Hull 1943; Skinner 1969), the automatization of motivation is facilitated through successful goal attainment—when motives have been repeatedly associated with desirable end-states, they are liable to become habitualized. Self-determined motivation to be nonprejudiced is much more likely to achieve its end-state of prejudice reduction than is nonself-determined motivation to be nonprejudiced. Thus, the reinforcing properties of self-determined motivation may help to mediate its automatization. In contrast, there is no adaptive benefit to automatizing ineffective motivational strategies.

Similarly, another manner in which internalized motivation may become automatic is through its relationship with positivity. Custers and Aarts (2005) have argued that the amount of positivity in a goal determines whether that goal is nonconsciously regulated. Self-determined goals are more likely to be consistent with positive feelings, vitality, and well-being (e.g., Ryan and Deci 2008) and, as such, they may be spontaneously adopted. Because goal-seeking steeped in positivity is likely to be reinforcing, it is more likely to become a chronically accessible intention or behavior. Unconscious motivations, goals, and self-regulations are extremely relevant and useful in our daily lives. Arguably, they are more determining of our thoughts and behaviors than are conscious motives. Moreover, the automatization of self-determined motivation is highly adaptive; desired end-states are more easily achieved through automatic self-determined motivation. The current research offers improved theoretical understanding of the automatic potential of internalization, and indicates that the principles and motivational processes of self-determination theory are compatible with the theoretical tenets of automaticity. The continued advancement of self-determination

theory into automatic motivational processes is an important new direction that may warrant future investigation.

Despite the above-noted implications, there are certain limitations in the current research. Namely, because Experiment 1 used different category primes for the stereotype activation and application tasks, it is possible that the extent of stereotype activation differed in the two tasks (i.e., for Black vs. Asian primes). Thus, we cannot be certain that our findings concerning stereotype activation will hold when the category prime changes. Because of the use of two category primes, there is also a small chance that the lower stereotype application (in Task B) found among self-determined individuals was the result of not having had the stereotype activated. Nonetheless, steps were taken to reduce this possibility by affirming that participants detected stereotypes in the Black stereotype application task (most said they noticed stereotypes, suggesting that the Black stereotype was indeed activated). Furthermore, the purpose of Task A was to demonstrate that self-determined individuals experience stereotype activation to the same degree as non-self-determined regulators. Still, it may be interesting for future research to validate the current results using the same category prime in both activation and application stages.

Conclusion

Evidence that the self-regulatory demands of day-to-day life can interfere with attempts at prejudice reduction is, at first glance, rather discouraging. On a more positive note, however, our findings also suggest that when self-determination is high, people are more resilient to depleting conditions and thus closer to achieving their egalitarian ideals. The ultimate goal of prejudice research is to contribute to the development of practical strategies for prejudice reduction. From a SDT perspective, one such solution appears to rest in the process of internalization. Although many people conform to the nonprejudiced norms and standards political correctness of their social groups, these external constraints do not support consistent and effective prejudice regulation. Meanwhile, the role of social networks (i.e. parents, teachers) in fostering the *internalization*—and thus *automatization*—of egalitarian goals, attitudes, and values should not be underestimated. As we approach a better theoretical understanding of how, through self-determination, prejudice regulation can be internalized and thence automatized, we also come closer to eliminating prejudice.

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