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Breaking the prejudice habit:

Automaticity and control in the context of a long-term goal

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### Breaking the prejudice habit:

#### Automaticity and control in the context of a long-term goal

The past two decades have witnessed an explosion of work on automaticity and control. This work has led to the creation of so-called “dual-process theories”, which argue that people’s behavior can be driven by either relatively automatic or relatively controlled processes. By focusing on the various factors that influence the type of processes activated in any given situation, dual process theories have productively advanced our understanding of behavior, both in general (Strack & Deutsch, 2004; Smith & DeCoster, 2000), and in specific domains, like person perception (e.g., Fiske & Neuberg, 1990; Brewer, 1988), attributional inference (Gilbert, 1989), and persuasion (Chaiken, 1980; Petty & Cacioppo, 1986).

One dual process theory that stands out as unique from the others is the prejudice habit model (Devine, 1989; Devine & Monteith, 1993). The prejudice habit model differentiates itself from other dual process theories in two primary ways. First, rather than describing a particular class of behavior, the prejudice habit model develops a theoretical analysis of a particular social problem, that of lingering discrimination despite increasingly positive beliefs about out-groups. Second, because of its concern with a social problem, the prejudice habit model concerns itself not only with the interplay between automatic and controlled processes within a single moment, but also with how this interplay is guided and structured by a person’s long-term goals. Because of these two characteristics, the prejudice habit model is less specific than other dual process theories in its assumptions about both the precise means through which automatic processes influence behavior (e.g., the activation of stereotypes versus the activation of evaluations) and the precise controlled processes that oppose the influence of the automatic processes (e.g., inhibition, suppression, correction, or other control mechanisms). Instead, the model trades

theoretical specificity for the ability to ground automaticity and control within a broad societal and temporal context.

In what follows, we will describe the problem that motivated the development of the prejudice habit model, namely, that even people who report beliefs and attitudes that are opposed to prejudice can act in discriminatory ways. We will then review the prejudice habit model and how the model uses the distinction between controlled and automatic processes to understand lingering group disparities. We will end our discussion with a review of topics for further research and the implications of the prejudice habit model for other dual process theories.

#### *Automaticity and the prejudice paradox*

To understand the prejudice habit model, one must first understand the paradox the model was developed to explain. The Civil Rights Movement gave birth to dramatic changes in laws and personal norms that, in combination, made overt discrimination illegal and socially taboo. In wake of these legal and normative changes, national surveys have revealed both increasingly positive attitudes towards minorities and decreasing endorsement of minority stereotypes (Schuman, Steeh, Bobo, & Krysan, 1997; Elliot & Devine, 1995). Despite these improvements, minorities continue to have more adverse outcomes than majority group members in domains ranging from education (Steele, 1997), to employment (Bertrand & Malainathan, 2004), to health and well-being (e.g., Williams, Neighbors, & Jackson, 2003).

The societal-level paradox has been accompanied by a personal-level paradox. When people perform tasks that unambiguously measure prejudice, such as self-report measures of racial attitudes, their responses are, consistent with the national survey data, generally positive and nonprejudiced. However, when many people perform tasks on which the nonprejudiced response is ambiguous, their responses subtly favor majority group members over minority

group members (Crosby, Bromley, & Saxe, 1980). This pattern of results occurs even among people who report that they believe that prejudice is wrong (Devine, 1989).

The contradiction that people who disavow prejudice can still act with bias has presented scholars with a difficult problem, both theoretically and practically. Theoretically, the contradiction has led to ambiguity how to interpret responses on tasks on which participants are able to monitor their behavior, such self-report measures. Some theorists have gone so far as to conclude that self-report measures are irrevocably contaminated by strategic self-presentation concerns (Gaertner & Dovidio, 1986), and that the apparent improvement in people's self-reported attitudes masks underlying negative "true attitudes" (Crandall, Eshleman, & O'Brien, 2002; Crosby et al., 1980). This type of reasoning leads to the pessimistic conclusion that the normative changes wrought by Civil Rights legislation are illusory in the sense that they have not create genuine intentions to act without prejudice.

If responses on measures permitting conscious monitoring are taken to reflect nonprejudiced intentions, an open theoretical question remains about the psychological process(es) that are responsible for the disparity between overt and subtle indicators of bias. In order to operate despite people's intentions, these processes must satisfy at least some of the formal criteria for automaticity (i.e., operate below the threshold of awareness, become activated quickly and unintentionally, and be difficult to control; Bargh, 1994).

The available evidence suggests that the processes leading to unintentional bias are not perfectly automatic (see Devine, 2001; Devine & Monteith, 1999). However, the biases are acquired easily, often after as little as a single exposure to negative evaluative information (Olsson, Ebert, Banaji, & Phelps, 2005), and early, perhaps as young as age 6 (Baron & Banaji, 2006). Once acquired, the biases are also frequently activated due to the saturation of stereotypic

information within the social environment (Gerbner, 1998). These biases then become overlearned to the point that, even if they are not perfectly automatic, they are activated as fast as between 300 ms and 600 ms after cue onset (Bartholow, Dickter, & Sestir, 2006; Ito, Thompson, & Cacioppo, 2004). Likewise, on tasks that occur quickly enough to preclude deliberative responding, merely instructing people to avoid bias appears to do little to prevent biases from occurring, suggesting that the processes leading to bias are difficult to control (e.g., Kim, 2003).

Thus, the debate about whether the processes leading to unintentional bias are “truly” automatic is in some ways unimportant, at least from the perspective of people concerned about the consequences of these processes. What is important is that these processes bias peoples’ behavior, and that these biased behaviors can have dramatic consequences for outgroup members, such as false recognition of Black faces in crime contexts (Eberhardt, Goff, Purdie, & Davies, 2004), poorer quality interactions with majority group members (Richeson & Shelton, 2003), and disparate allocation of health and economic resources (Green et al., 2007; Amodio & Devine, 2006) resources. Furthermore, these biased behaviors are ones that – were the perpetrators aware of them – most would find both immoral and unacceptable.

The existence of lingering bias that is to some extent automatic leaves open the practical problem of whether the biases can be eliminated, and, if so, how. Some theorists have argued that no methods will effectively reduce subtle biases, and that subtle biases are inevitable due to the natural constraints of human cognition (see Billig, 1985; Bargh, 1999). The prejudice habit model challenges arguments about both the inevitability of prejudice and the interpretation of self-report measures as merely reflecting strategic self-presentation (Devine, 1989; Devine & Monteith, 1993). The model draws on dual-process theory logic to argue that, like unwanted habits, relatively automatic implicit stereotypes and evaluations can cause otherwise well-

intentioned people to unwittingly perpetuate discrimination. However, rather than concluding that the existence of automatic bias inevitably leads people to discriminate against outgroups, the prejudice habit model argues that, if people have sufficient personal motivation to overcome bias and awareness of their bias, they can exert effort by deploying controlled processes to “break the prejudice habit”. Even if this effort is not sufficient to disrupt the automatic processes leading to discrimination within a single moment, the effort can lead to increased efficiency in the regulation of prejudice in future situations, thereby increasing the probability that people will bring behavior in line with intention in situations where they might once have failed.

The importance of the prejudice habit model stems from both theoretical and practical concerns. Theoretically, the model allows a more nuanced understanding of the apparent paradox of so-called “modern” forms of prejudice. Although many people have genuinely renounced prejudice, lingering stereotypic and evaluative associations can still cause people to fail to live up to their intentions in ambiguous or time-pressured situations, leading to negative outcomes for out-group members. The model thus highlights the internal struggle of a person attempting to overcome prejudice (Allport, 1954), and understands that person’s actions in any one moment as only one snapshot of a person’s overall self-regulatory process. Practically, the model outlines the necessary conditions for breaking the prejudice habit, both over a short and a long timescale. By outlining these conditions, the habit model offers a practical potential roadmap for eliminating lingering disparities linked to automatic bias.

In the following sections, we outline the conditions the prejudice habit model argues are necessary to overcome prejudice – personal motivation to rid oneself of automatic bias, awareness of the bias, and efforts in deploying controlled processes to reduce the bias. All of

these components are discussed in the context of a regulatory process to achieve the long-term goal of prejudice reduction.

*The components of control*

*The internal struggle: Personal motivation to respond without prejudice*

The personal motivation to reduce prejudice stems from a long-term goal to reduce one's bias. Thus, before people can develop a personal motivation to reduce bias, they must establish an identity that is opposed to prejudice and thereby adopt a long-term goal to reduce prejudice. On the basis of this logic, Devine and Monteith (1993) argued that the establishment of an egalitarian self-concept is a necessary precondition for personally motivated self-regulation of prejudice-related bias to occur.

Once a long-term goal to reduce prejudice has been adopted, this goal, and the motivation that stems from it, structures peoples' orientations to their environment, changing how people interprets the situations they encounters and their reactions to those situations. By changing peoples' orientations towards their environments, personal motivation to respond without bias is important to the self-regulatory process in three primary ways. First, this motivation generates intentions consistent with the long-term goal of overcoming bias. Second, the motivation leads to the establishment of self-regulatory standards that are used to monitor and evaluate progress towards the long-term goal. Third, the motivation heightens the affective consequences of acting in ways that are inconsistent with the long-term goal.

The first change, generating intentions conducive to progress towards the goal of eliminating prejudice, is a dynamic process that occurs after one has identified a situation as relevant to the regulation of prejudice (i.e., after the identification of a situation as relevant to one's long-term goals). The identification of a situation as goal-relevant generates a search for



opportunities to behave in ways that are conducive to goal progress. Thus, in interracial interactions, for example, the personal motivation to respond without prejudice is linked to intentions to treat the interaction partner fairly (Plant & Devine, 2009; Plant, Devine, & Peruche, 2010). After a perceived self-regulatory failure, such as the rejection of a qualified job candidate on the basis of the candidate's sexual orientation (Monteith, 1993), personal motivation is linked to interest in and attention to materials perceived to be useful in eliminating subtle bias. By generating intentions to act in ways that are consistent with long-term goals, motivation orients a person to the situational affordances that further long-term goals.

The second change, the establishment of personally endorsed self-regulatory standards, allows people to effectively monitor goal progress. Standards define the behaviors that are considered violations of a goal. By comparing their standards to current behavior, people can determine whether their behavior is different from what they believe is appropriate (Devine, Monteith, Zuwerink, & Elliot, 1991). This comparison between standards and behavior provides information about the current rate of change towards or away from the long-term goal of eliminating bias (Carver & Scheier, 1990). Greater personal motivation is related to stricter, better internalized, and more well-defined standards; thus, motivation helps determine the behaviors that are considered goal-relevant (Devine et al., 1991; Monteith, Devine, & Zuwerink, 1993).

The final change, heightening the affective consequences of behaving in goal-inconsistent ways, is interrelated with the establishment of standards to monitor goal progress. Once people establish well-defined standards to regulate bias, these standards engage an ongoing monitoring process that orients people's attention to violations of the standards. To the extent that people perceive the long-term goal of regulating bias as personally relevant, violations of the standards are interpreted as moral failures, generating guilt (Devine et al., 1991). Combined with

the aforementioned intentions to eliminate prejudice, the guilt generated by violations of a person's standards motivates later efforts to bring behavior in line with that person's goals (Monteith, 1993; Monteith et al., 2002; Amodio, Devine, & Harmon-Jones, 2007).

Thus, personal motivation to respond without prejudice engages a dynamic self-regulatory process; when situations are perceived to be relevant to the long-term goal of eliminating prejudice, motivation generates situation-specific intentions to act consistently with those goals. Motivation also leads to the establishment of standards useful in monitoring goal progress, and leads to the interpretation of behaviors inconsistent with those standards as moral failures, leading to guilt and efforts to bring future behavior more in line with one's standards.

*The external struggle: Being motivated for social reasons*

A personally held goal is not the only reason people might be motivated to respond without prejudice. The establishment of strong anti-prejudiced norms has created compelling external reasons to respond without prejudice. The establishment of anti-prejudiced norms and anti-discriminatory legislation was motivated at least in part by the hope that the creation of these external reasons to respond without prejudice would eventually create internally endorsed intentions to respond without prejudice. An important question arising from these changes is whether external motivation spurred by anti-prejudiced norms creates self-regulatory processes similar to those created by internal motivation. This question assumes both theoretical and practical importance, as answering this question would enable social scientists to evaluate whether external motivation can fulfill similar self-regulatory functions as internal motivation and thereby judge whether anti-discriminatory legislation has succeeded in its goal of generating internally endorsed intentions to respond without prejudice.

To help address questions about the potentially different implications of internal (i.e., value and / or goal-driven) and external (i.e., social) motivations to respond without prejudice, Plant and Devine (1998) created separate measures of these motivations, namely the Internal Motivation Scale (IMS) and the External Motivation Scale (EMS). Interestingly, despite the hopes on the part of activists and legislatures that external motivation would eventually lead to internal motivation, both Plant and Devine (1998) and subsequent researchers have consistently found that the internal and external scales are only mildly correlated, if at all (e.g.,  $r = -.15$ , Plant & Devine, 1998;  $r = -.05$  to  $-.01$ , Klonis, Plant, & Devine, 2005;  $r = .14$ , Ratcliff, Lassiter, Markman, & Snyder, 2006). This suggests that the two sources of motivation operate somewhat independently of each other. Subsequent research has found that external motivation also has very different self-regulatory implications than internal motivation.

First, in contrast to the intentions to eliminate prejudice that are associated with internal motivation, external motivation is associated with intentions serving the long-term goal of hiding prejudice from others (Plant & Devine, 2009). This subtle difference in intention can have dramatic consequences for behavior. Because externally motivated people are primarily concerned with how they appear to others, their behavior is strategic; if a given situation does not provide the proper affordances to hide prejudice from others, externally motivated people do not attempt to regulate their prejudice. Thus, external motivation is associated with interest in and attention to materials perceived to prevent detectable (overt) forms of prejudice, but not necessarily undetectable (subtle) forms of prejudice (Plant & Devine, 2009). In interracial interactions, externally motivated people adopt intentions to hide their prejudice from their interaction partner, an intention that, because it does not lead to strategies that create a smooth interaction, is ironically associated with greater perceived expressions of prejudice by the

interaction partner (Plant, Devine, & Peruche, 2010). Overall, because internal and external motivations serve different long-term goals, internally and externally motivated people are oriented to different kinds of situational affordances. These differences in orientation lead to differences in which aspects of a particular situation are perceptually salient and, consequently, in the situational intentions that differently motivated people adopt.

Internal and external motivations to respond without prejudice also have different implications for the standards used to regulate prejudiced behavior. Whereas the standards of internally motivated people serve as a basis for determining whether their behavior is consistent with the long-term goal of eliminating bias, the standards of externally motivated people are functionally different, serving the long-term goal of hiding bias (Plant & Devine, 1998). Instead of using their own standards to regulate their behavior, externally motivated people use what they perceive to be the standards of others, and they only use these standards in the presence of a perceived audience that is thought to disapprove of prejudice. Thus, while both internally and externally motivated people may regulate their prejudice in the presence of a perceived audience known to disapprove of prejudice, externally motivated people relax their regulatory standards outside the presence of this perceived audience (Plant & Devine, 1998; 2001; 2009).

Finally, external motivation is related to different interpretations of violations of self-regulatory standards. Because externally motivated people use the perceived standards of others to regulate their behavior, violations of the standards are interpreted as signals of imminent social sanctions, and thus generate feelings of threat and anger directed at the perceived source of the social sanctions (Higgins, 1987; Plant & Devine, 1998). The implications of the threat and anger are that, when social pressure to respond without prejudice is lifted, externally motivated people experience backlash at the curtailment of their psychological freedom, attempting to

restore this freedom by responding with greater prejudice than if pressure had not been applied in the first place (Plant & Devine, 2001). Though not tested to date, one provocative interpretation of this backlash is that at least some externally motivated people react to external pressure to conform with anti-prejudiced norms by establishing self-concepts defined by the expression of prejudice despite external pressure, thus developing a motivation to express prejudice.

Thus, accumulating evidence suggests that the changes in norms have not been uniformly successful in generating internally endorsed intentions to respond without prejudice. People who are strongly motivated to conform with these norms regulate themselves in a very different way from people who are motivated to respond without prejudice for internal reasons, experiencing an external struggle between norms and automatic bias, rather than an internal struggle between values and automatic bias. The external struggle leads to differences in the intentions that guide self-regulatory efforts, the standards used to evaluate goal progress, and the interpretation of instances of goal failure. Overall, the external struggle may even lead to resentment and behavioral backlash, and, to the extent that people come to define their self-concepts by resisting social pressure through covert expressions of prejudice, perhaps even the development of a motivation to express prejudice.

#### *The role of awareness in the bias reduction process*

Regardless of whether people are motivated to respond without prejudice for internal or external reasons, motivation seems to structure the intentions people adopt and the way they monitor and evaluate progress towards their goals. However, motivation by itself will not spur self-regulatory efforts unless people notice that they are succeeding or failing at their goals. This logic forms the basis of the awareness component of the prejudice habit model.

The prejudice habit model has generally distinguished between two types of awareness. The first type of awareness is *chronic* awareness, or the extent to which a person is chronically sensitive to one's level of bias (Devine & Monteith, 1993). The second type of awareness is *momentary* awareness, or the extent to which, within a given situation, one is aware of one's bias. Momentary awareness has been further subdivided into *prospective* awareness, or awareness that one has the potential to act with bias, and *retrospective* awareness, or awareness that one has already acted with bias (Monteith et al., 2002).

Both situational and chronic awareness are important to the regulation of prejudice. Chronic awareness generates a monitoring process that increases the likelihood that self-regulation will occur in any given situation (Monteith et al., 2002). However, this monitoring process must be triggered within a given situation for self-regulation to occur.<sup>1</sup> Thus, successful self-regulation will occur when people translate chronic awareness into situational awareness, resulting in the exertion of self-regulatory effort (Monteith & Mark, 2005).

Chronic awareness is closely linked to the standards that people have for regulating their bias. As people monitor the extent to which their actual responses differ from their standards, they develop a set of relatively enduring beliefs about the level of bias present in their ongoing behavior (Devine et al., 1991). Chronic awareness has been conceptualized as the extent to which peoples' beliefs about the degree of bias in their behavior differ from their standards (Devine et al., 1991). The close linkage in the conceptualization of motivation and chronic awareness illustrates the theorized reciprocal relationships between motivation and chronic awareness. Because motivation generates standards to help evaluate and monitor goal progress, it also eventually generates beliefs about one's level of bias and, to the extent that these beliefs are accurate, chronic sensitivity to one's level of bias. To the extent that people believes that

their actual level of bias differs from their standards, chronic awareness can also spur increased motivation; the discrepancy between the standard and the believed level of actual bias generates guilt, which spurs future motivated tendencies to bring behavior in line with standards.

Within a specific situation, awareness can be triggered either prior to a biased response (prospective awareness) or after a biased response has already occurred (retrospective awareness). Most of the research on awareness has focused on the consequences of retrospective awareness. As described in the motivation section, this work has revealed that retrospectively becoming aware of bias generates guilt, at least among people who are personally (i.e., internally) motivated to respond without bias (Devine et al., 1991). Although retrospective awareness has typically been portrayed as the product of a relatively effortful introspective process (e.g., see Monteith et al., 2002), attention can be recruited to bias-relevant errors very quickly and efficiently, particularly among people who are highly internally motivated to respond without bias (Amodio, Devine, & Harmon-Jones, 2008).<sup>2</sup>

Repeated retrospective awareness should also trigger increased chronic awareness, increasing overall sensitivity to future instances of bias. Monteith and her colleagues (2002) argue that the chronic awareness generated through retrospective reflection may be somewhat situation-specific; the guilt generated by the retrospective reflection becomes associated with the characteristics of that situation, which later become “cues for control” that help trigger future prospective awareness. Cues for control provide a warning that a person is at risk of acting in a biased way, recruiting attention to a given situation so that the person can deploy controlled processes to inhibit stereotypic responses.

*Bringing the components together: Effort*

In many ways, the deployment of effort to exercise control over stereotypic responses is the culmination of the regulation of a person's biased responses. Although both motivation and awareness may be necessary for the successful regulation of bias, Devine and colleagues have argued forcefully that they are insufficient to produce enduring reductions in bias (see Devine, Forscher, Austin, & Cox, 2012). Indeed, they have argued that overcoming bias is likely to be a protracted process requiring considerable effort over time (Devine, 1989; Devine et al., 1991).

Accordingly, Devine and colleagues have found that, when people who are motivated to reduce their bias are made situationally aware of their bias, they feel guilty, and the guilt motivates efforts to reduce bias. For example, people made aware of their bias report more interest in and spend more time studying information that they believe will help reduce their bias (Amodio, Devine, & Harmon-Jones, 2007; Monteith, 1993), and immediately after the guilt-evoking experience, these same people regulate their prejudice by attending to and slowing their responses and by putting effort into tasks that they believe will reduce their bias (Monteith, 1993; Monteith et al., 2002; Monteith, Mark, & Ashburn-Nardo, 2010).

In arguing that these experiences will be effective in reducing bias, these theorists have made two assumptions. First, they have assumed that, to the extent that people exert effort intended to reduce their implicit bias immediately after a regulatory failure, they will be more efficient in regulating their bias in future situations. In effect, the theorists have overlooked the question of whether effort exerted in one situation will actually be successful in reducing implicit bias in future situations by either decreasing the strength of future activation of bias or increasing the efficiency with which people deploy controlled processes. Second, the theorists have assumed that people will know the proper strategies that, when deployed, will successfully



reduce implicit bias. Effectively, participants have been left to their own devices to discover the strategies permitting successful regulation of bias.

Although little work has directly addressed the assumptions that effort will improve long-term self-regulatory attempts, some recent work has identified a promising set of strategies that may successfully help regulate implicit bias. These strategies have typically been tested by simply asking participants to perform the strategy as part of an experimental task; thus, the participants in these experiments were not regulating their prejudice, but rather merely complying with the instructions of the experimenter. Despite the fact that the participants in these studies were not actively attempting to regulate their prejudice, many of these strategies, such as such as taking the perspective of stigmatized others (Galinsky & Moskowitz, 2000) and imagining counter-stereotypic examples (Blair, Ma, & Lenton, 2001; Dasgupta & Greenwald, 2001), lead to substantial reductions in implicit bias, at least for a short time (i.e., up to 24 hours). However, investigators have typically not tested whether the beneficial effects of these strategies on implicit bias endure beyond a single lab session. Additionally, the prejudice habit model, along with a few other dual-process theories in psychology (e.g., Smith & DeCoster, 2000; Strack & Deutsch, 2004), predicts that, because the processes supporting automatic bias have developed through repeated activation from a lifetime's exposure to biasing information in the social environment (Devine, 1989), these processes are only likely to change in an enduring way after considerable time, effort, and / or intensity of experience. Thus, because one-shot interventions must counteract a large accretion of associative learning, they are unlikely to produce enduring change in automatic responses. Such change is likely only after the application of considerable goal-directed effort over time.

Devine and her colleagues (Devine et al., 2012) recently attempted to address the above shortcomings by designing and testing longitudinally an intervention that would produce enduring reductions in implicit bias. Because the goal of the intervention was to engage a complex self-regulatory process, and because of the difficulty of knowing a priori which components of the intervention would be necessary or sufficient to produce enduring reductions in implicit bias (Prochaska & Velicer, 1997), the intervention was intentionally multi-faceted, containing components designed to engage awareness, motivation, and effort. All participants in the study first completed an implicit measure of bias and received feedback about their level of implicit bias. The completion of the implicit measure and the feedback served to make the participants situationally aware of their bias. Participants who received the intervention then watched a 45 minute narrated slideshow. The slideshow attempted to translate the situational awareness provided by the feedback into chronic awareness by educating the participants about what implicit bias is, how it is measured, and its consequences for outgroup members. The slideshow then described the situations in which implicit bias can lead to subtle discrimination.

To channel the motivation and awareness provided by the implicit bias education into effort that might have an impact on implicit bias, the slideshow next provided the participants with strategies culled from the literature that, were the participants to exert effort by practicing them in their everyday life, should lead to enduring reductions in implicit bias. These strategies were intentionally diverse, including stereotype replacement (Devine & Monteith, 1993), counter-stereotypic imaging (Blair, Ma, & Lenton, 2001), individuation (Brewer, 1988; Fiske & Neuberg, 1990), perspective taking (Galinsky & Moskowitz, 2000), and increasing opportunities for contact (Pettigrew, 1998). Devine and colleagues reasoned that presenting a wide variety of strategies would enable participants to select those that best suited their particular situations

(Prochaska & Velicer, 1997). At one and two months following the randomized intervention, Devine and colleagues measured an array of variables related to the prejudice habit model, including motivation, chronic awareness, effort, and implicit bias.

The results of the study suggested that the intervention was successful. Participants who received the intervention experienced dramatic reductions in implicit bias that endured up to two months after the intervention. Participants who received the intervention also increased in chronic awareness and concern about discrimination, which that Devine and colleagues argued was related to motivation. The participants who were most concerned about discrimination after receiving the intervention experienced the greatest reductions in implicit bias, highlighting the importance of motivation in the regulation of subtle bias. Finally, Devine and colleagues also conducted a word-frequency analysis of free-response answers the participants gave to questionnaires about their strategy use. Importantly, participants who used frequently used word stems relating to the implementation of bias-reducing strategies (e.g., *implement\**, *practic\**, *appli\**, *use\**, *tri\**) experienced the greatest reductions in implicit bias. This last finding underscores the importance of effort in the successful regulation of bias.

In developing an intervention that produces long-term reductions in implicit bias, increases in concern about discrimination, and increases in chronic awareness of one's bias, prejudice habit model researchers have come full circle. The theory was originally proposed to provide an understanding of the prejudice paradox that did not rely on arguments about the inevitability of prejudice or interpretations of all self-report measures as strategic self-presentation. Although the model proposed that implicit bias could be reduced in the long term given sufficient personal motivation, awareness, and effort, it was silent as to exactly how this

process would unfold. Although many questions remain, we now have preliminary evidence strongly supporting the original conceptualization that prejudice is a habit that can be broken.

*Unanswered questions and recommendations for future research*

Research on the prejudice habit model over the past two decades has been extremely productive. This research has demonstrated the challenges faced by people experiencing the “internal struggle” to eliminate unwanted implicit bias. The research has also forcefully argued that, though the process of overcoming bias may be arduous, people can harness controlled processes to overcome automatic biases given sufficient motivation, awareness, and effort. However, many gaps in our understanding of how people overcome bias remain. In the following sections, we will outline what we perceive to be the most pressing issues facing researchers using the habit framework. We will organize our discussion according to the various components of the model. We will finish our discussion with two methodological recommendations and a review of the implications of the model for other dual process theories.

*Developing an understanding of motivation’s development*

Although we know that motivation shapes the way a person regulates bias, we have large gaps in our knowledge about how motivation develops and how that development is affected by a person’s long-term goals and values. Devine and Monteith (1993) argued that the motivation to respond without prejudice stems from values of equality, but to date we have little understanding of precisely how values of equality lead to a personal motivation to respond without prejudice. Because of the abstract nature of values, valuing equality does not guarantee that the value is seen as relevant to prejudice towards a particular group (see Maio, Hahn, Frost, & Cheung, 2009). Thus, the issue of how values of equality come to be seen as applicable to prejudice towards a particular group may be critical to understanding the relationship between

values and motivation. Developing a more thorough understanding of the factors influencing the application of values to the regulation of prejudice might eventually enable us to develop interventions to change people's motivations.

Another important aspect of motivation that is currently not well-understood is how internal and external motivations develop over time. On the basis of self-determination theory (Deci & Ryan, 2000), Devine and colleagues (2002) speculated that internal and external motivations follow a developmental trajectory whereby people first become motivated for external reasons, resulting in high levels of external motivation, then gradually internalize the external motivation, resulting in high levels of both internal and external motivation, and finally fully integrate the external motivation their self-concepts, resulting in high internal motivation only (see also Crandall & Eshleman, 2003). Some evidence supports this argument; for example, compared to people who are motivated for both internal and external reasons, people who are motivated for only internal reasons have a preconscious sensitivity to bias-relevant errors (Amodio, Devine, & Harmon-Jones, 2008) and lower levels of implicit bias as assessed by both the IAT (Devine et al., 2002) and a startle eyeblink method (Amodio, Harmon-Jones, & Devine, 2003). This suggests that people who are motivated to respond without prejudice for only internal reasons are more efficient in their self-regulation than people who are both internally and externally motivated.

However, the evidence does not uniformly support a self-determination perspective on the development of internal and external motivations. For example, people who are primarily externally motivated have higher levels of explicit bias than people who are not motivated for either internal or external reasons (Devine et al., 2002; Plant & Devine, 1998) and respond with higher levels of anger, threat, and other forms of backlash when pressured to comply with

egalitarian norms (Plant & Devine 2001). Although primarily externally motivated people do regulate their bias when doing so reduces the risk of receiving social sanctions, they appear to resent the external pressure to regulate their bias, and therefore seem to have internalized egalitarian norms to an even lesser extent than people who are neither internally nor externally motivated to respond without prejudice. Studying the developmental sequence of motivation will allow us to better understand the interplay between internal and external motivations, which will provide us with more tools for developing interventions to increase internal motivation.

*Broadening our understanding of awareness*

Although researchers studying awareness have made a key distinction between momentary and chronic awareness, our knowledge of how chronic awareness becomes translated into momentary awareness (and how momentary awareness may lead to increased chronic awareness) is just emerging. Part of the reason for this lack of knowledge is methodological; neither chronic nor momentary awareness have typically been used as outcome variables in experimental studies, with the result that we have little knowledge of the factors that causally influence either variable (but see Devine et al., 2012). However, another potential reason for this lack of knowledge is that current researchers may have overlooked some of the complexities inherent in becoming aware of one's bias.

Developing awareness of one's bias, either momentary or chronic, requires the application of knowledge about bias to both a specific situation and to oneself. The specific content of this knowledge (i.e., a person's lay theory; Wilson & Brekke, 1994) may have dramatic implications for whether people develop chronic or momentary awareness in the first place. Without a lay theory of prejudice that posits that discrimination can arise unintentionally, people who consciously renounce prejudice but who still associate Black people with negative

stereotypes will mistake their good intentions for unbiased behavior, and thus will not engage controlled processes to regulate their prejudice.

Lay theories of prejudice may also have important consequences for how people interpret biases that they do notice. For example, if person believe that biases arise from intentions, those people may be more likely to make dispositional attributions from actions based on stereotypes (Devine, Evett, & Vasquez-Suson, 1996). These dispositional attributions may have dramatic inter- and intrapersonal consequences; a dispositional inference about another person may lead to avoidance of that person, while a dispositional inference about oneself may lead to avoidance of self-regulatory behavior (for similar arguments, see Carr, Rattan, & Dweck, 2012).

Another way in which the beliefs people have about bias may be important is in whether and how people calibrate their beliefs about their own bias to their actual level of bias. Accuracy in the beliefs people have about their bias are important because these beliefs determine when and by how much people deploy effort in correcting their behavior. Thus, having inaccurate beliefs may cause people to undercorrect their behavior in some situations and, perhaps, overcorrect in others. Accurately attuning beliefs to actual bias is not a trivial task; because discrimination can happen unintentionally and without awareness, merely reflecting about past experiences with bias is unlikely to give an accurate estimate of actual vulnerability to bias. The fact that beliefs about bias and actual levels of implicit bias are only modestly correlated ( $r = .17$ ; Monteith, Voils, & Ashburn-Nardo, 2001) is consistent with the argument that most people's beliefs are not well-attuned with their actual levels of bias.

One final way in which general knowledge about bias might be important is in the application of general knowledge into a specific situation. Although in some situations, there is a clear potential for discrimination and the non-prejudiced response is obvious, other situations

are more ambiguous in these respects (Gaertner & Dovidio, 1986; see also Maio, 2010). Thus, whether people interpret a specific situation as relevant to the regulation of bias may be a key factor in triggering momentary awareness. One promising avenue for research on this component of awareness is investigating how knowledge of bias is represented in memory; to the extent that knowledge of bias is connected to specific types of situations (such as job interviews), encountering those situations should be more likely trigger awareness of the potential for bias and subsequent self-regulatory efforts.

*Effort: The understudied component*

Although effort is an integral part the prejudice habit model, it is also the least studied. Only one published study to date has investigated effort as an outcome of a self-regulatory process (Devine et al., 2012), and that study lacks a direct, precise measure of effort. Consequently, the remaining questions about how effort plays into the self-regulatory process are numerous. For example, it is unclear precisely how much and what kinds of effort are required to produce changes in the various components of the prejudice habit model. Effort in monitoring one's thoughts could produce specialized increases in chronic awareness. In contrast, effort exerted in taking the perspective of outgroup members could produce specialized increases in motivation and concern about discrimination.

In a related question, we have little knowledge about the specific psychological processes that are affected by effort in reducing relatively automatic forms of bias. The prejudice habit model predicts that repeated deployment of effort should increase the efficiency of future control of one's bias; however, it is also possible that repeated deployment of effort directly reduces the activation automatic biases. Forthcoming work suggests that the specific ways in which people overcome their bias (and maintain their bias at a low level) depend, at least in part, on the



strategies people use to overcome their bias and the amount of effort they exert in the deployment of these strategies (Monteith & Lybarger, in preparation). Recently developed multinomial modeling techniques could help shed further light on the ways in which effort relates to the reduction of implicit bias (Payne, 2001; Conrey et al., 2005).

Finally, it is unclear what factors determine whether effort exerted in one situation will translate into reductions in bias in a different situation. Answering this question will be critical in understanding how effort creates long-term changes in the outcomes related to implicit bias. Overall, investigations on effort are in their infancy, and these investigations remain some of the most exciting avenues for future research on the prejudice habit model.

*Implications for other dual-process theories and two methodological recommendations*

As we noted at the beginning of this chapter, the main points of differentiation between the prejudice habit model and other dual process models is the habit model's concern with a social problem and how, as a result, the prejudice habit model situates the interplay between automaticity and control within the context of the pursuit of a broader goal to treat people equally. This integration of dual process theory logic into a broader self-regulatory framework is its main contribution to our understanding of dual process theories generally.

However, to empirically exploit the theoretical integration of a dual process analysis with self-regulatory processes, researchers should heed two methodological recommendations. First, researchers studying prejudice and implicit bias should broaden the range of outcome variables that they study. Perhaps because prejudice researchers have often had the meta-theoretical goal of finding methods to reduce implicit bias, they have become pre-occupied with using specific implicit measures of bias (such as the IAT) as their primary outcome measures. However, implicit bias is not a unitary construct, and as a result, any one implicit measure is unlikely to

entirely capture the full range of psychological processes that lead to subtle discrimination (Amodio, 2009). Additionally, a preoccupation with implicit measures of bias for their own sake has contributed to a lack of theoretical clarity about the other psychological factors involved in the regulation and reduction of implicit bias, like motivation, awareness, and effort. As shown by Devine et al. (2012), maintaining a full theoretical appreciation of these variables is critical to developing interventions that produce long-term change in subtle bias.

The second recommendation is closely related to the first. Because of its emphasis on the development and maintenance of long-term regulatory processes, the habit model has been from its inception a developmental model. It is thus somewhat strange that researchers have until very recently not investigated the components of the model longitudinally. One-shot experiments do allow snapshot views of the regulatory process, but without longitudinal designs, we will not be able to properly appreciate people's regulatory struggles in the context of their long-term goals. A full investigation of the interplay of motivation, awareness, and effort in empowering people to control relatively automatic forms of bias demands the use of longitudinal designs.

Overall, the prejudice habit model has proved instrumental in advancing our knowledge of the process of reducing one's bias. Hopefully it will continue to prove productive in incrementally advancing its original goal of decreasing lingering disparities and empowering people to bring their behavior in line with their intentions.

## Footnotes

<sup>1</sup>It is possible that situational awareness need not be triggered in every situation for the regulation of bias to occur, at least in the sense that some people who successfully regulate their bias might not retrospectively report that they had any awareness of potential to act with bias. However, as we will note later, the processes that lead to situational awareness can themselves become efficient to the point of being triggered preconsciously (Amodio, Devine, & Harmon-Jones, 2008), suggesting that the detection of bias need not necessarily coincide with a phenomenal state of awareness. Additionally, even if a phenomenal state of situational awareness is unnecessary for self-regulation in a given situation, the prejudice habit model predicts that chronic awareness is necessary for successful long-term self-regulation.

<sup>2</sup>Note that the efficient, preconscious recruitment of attention to prejudice-relevant errors only occurs for people who are both high in internal motivation and low in external motivation to respond without prejudice. Why the fast recruitment of attention occurs for this subgroup and no other is a question we will return to later in the chapter.

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