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Automaticity and Control in Stereotyping

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Interest in the nature of the more or less intentional or rational processes in thought and behavior has a long and rich tradition in psychology. It formed, for example, the cornerstone of Freud's classic theorizing about the nature of personality. But interest in the fundamental nature of human thought was also of central concern to classic philosophers, whose continuing impact on modern-day psychological theorists is considerable (see Gilbert, 1991). Empirical efforts to examine the less intentional (unconscious) components of thought and behavior were often frustrated by the absence of methodologies that could reveal such influences. In the 1970s, however, great strides were made in cognitive psychology in terms of both theory and methods that made it possible to explore independently the influence of intentional (conscious) and unintentional (unconscious) components of human thought and behavior (Posner & Snyder, 1975; Shiffrin & Schneider, 1977; Neely, 1977). These efforts gave birth to dual-processing theories that distinguished between automatic and controlled information processing.

"Automatic processes" were initially defined as processes that occur without intention, effort, or awareness, and without interfering with other concurrent cognitive processes (Posner & Snyder, 1975; Shiffrin & Schneider, 1977; Jacoby, Lindsay, & Toth, 1992; Johnson & Hasher, 1987; Logan & Cowan, 1984). In short, they were thought to be involuntary and inescapable. "Controlled processes," in contrast, were defined as possessing the opposite qualities. Thus, they were considered to be intentional, to be under the individual's control, to be effortful, and to entail conscious awareness. Although controlled processes were thought to be capacity-limited, they were considered to be more flexible than automatic processes. Their intentionality and flexibility were believed to make them useful for decision making and the initiation of new behaviors.

Dual-processing theories led to important advances in the understanding of information processing generally, and had a major impact on cognitive psychologists. However, their impact was much more widespread, also influencing theory and research that were emerging at the interface of social and cognitive psychology. The insights of dual-process theories were quickly applied to a wide array of social-psychological phenomena that had previously been difficult to explain fully. Specifically, various aspects of social thought or behavior appeared to have unintended or automatic influences that extant theories were not equipped to explain. For example, the conditions under which highly credible

sources influenced the persuasion process became clearer under the illumination of dual-process reasoning (Chaiken, 1987; Petty & Cacioppo, 1986). Similarly, the tendency to make dispositional attributions quickly and to correct later for possible situational influences has also been accounted for in terms of automatic processes that can be controlled only when sufficient cognitive capacity is available for the correction process (Gilbert, 1989; Trope & Alfieri, 1997). Indeed, the present volume provides strong testimony to the widespread and productive impact of conceptualizing many social-psychological phenomena in terms of their automatic and controlled components.

In the present chapter, we consider the distinction between automatic and controlled processes as it has been applied to stereotyping. It has long been assumed in the stereotyping literature that stereotypes play a central and pervasive role in social perception (Allport, 1954; Lippman, 1922). Stereotypes, it is frequently argued, ease the burden of the social perceiver in responding to a potentially overwhelming and complex social environment (see Hamilton & Sherman, 1994, for a review). Allport (1954, p. 21) suggested that "the mind tends to categorize environmental events in the 'grossest' manner compatible with action." The rationale for this suggestion is that such categorizations take little effort and facilitate adjustment to the environment. More contemporarily, Macrae, Milne, and Bodenhausen (1994, p. 37) have suggested that stereotypes "serve to simplify perception, judgment, and action. As energy saving devices, they spare perceivers the ordeal of responding to an almost incomprehensively complex social world." As such, stereotypes came to be viewed as cognitive structures that were automatically applied to members of stigmatized groups.

As early as 1954, Allport suggested that "It seems a safe generalization to say that an ethnic label arouses a stereotype which in turn leads to rejective behavior" (p. 333). Following in the tradition of Allport's (1954) classic writings, many theorists have assumed that stereotype activation automatically and inevitably follows when one comes in contact with a member of the stereotyped group (Brewer, 1988; Devine, 1989; Dovidio, Evans, & Tyler, 1986; Fiske & Neuberg, 1990). Emerging from this type of analysis was the discouraging possibility that stereotype activation ultimately results in biased and prejudiced responses that are not amenable to control. That is, stereotype application was also assumed to be rather automatic. This type of reasoning led some to argue that prejudice is an inevitable consequence of these normal, even adaptive, categorization processes (Fox, 1992; cf. Billig, 1985). And, indeed, the research literature is replete with evidence that stereotypes often result in biased judgments of and behaviors toward targets of stereotypes (see Hamilton & Sherman, 1994, for a review).

Others, however, were more reluctant to accept the fatalism implied by the inevitability-of-prejudice conclusions. The inevitability-of-prejudice perspective functionally eliminates the possibility that the potentially destructive and biasing effects of stereotypes on social perception and behavior can be controlled or otherwise avoided. A review of the stereotyping literature reveals an ongoing tension between stereotypes' apparently adaptive functions in simplifying social perception and their potentially destructive and biasing effects. That is, however easily stereotypes are activated, there are many circumstances under which, and some social perceivers for whom, stereotype application is considered unacceptable.

Allport (1954) also anticipated that such quick categorizations may not always be compatible with a perceiver's goals, and thus anticipated more contemporary concerns over whether and how control over automatically activated stereotypes can be accomplished. According to Allport, perceivers will sometimes "put the brakes on their prejudices" (1954, p. 332). Increasing concern over the potentially destructive and biasing effects of stereotypes has motivated interest in identifying strategies to reduce or eliminate the pernicious impact of stereotypes on social thought and behavior. Indeed, a central assumption made by several theorists is that stereotypic thinking can be overridden under favorable conditions (i.e., that perceivers have the motivation and ability to "apply the brakes") (Devine, 1989; Fiske, 1989; Higgins & King, 1981; Kruglanski & Freund, 1983; Jamieson & Zanna, 1989; but see Bargh, Chapter 18, this volume; Wilson & Brekke, 1994).

Fiske (1989, p. 277) noted, for example, that "The idea that categorization is a natural and adaptive, even dominant, way of understanding other people does not mean that it is the only option available." Concern over assumptions that prejudice may be an inevitable consequence of ordinary thought processes is a key component of the contemporary leading models of person perception processing (Brewer, 1988; Brewer & Harasty, Chapter 12, this volume; Fiske & Neuberg, 1990; Fiske, Lin, & Neuberg, Chapter 11, this volume). These models contend that social perceivers categorize or stereotype others initially, but *can* avoid stereotypic biases by replacing such categorical processing with more individuated processing. This more controlled, intentional type of processing is only likely to occur, however, when sufficient motivation and ability are present. Thus, in such models, stereotyping is the quickly and effortlessly applied default process, which precedes any conscious, goal-driven processes. Such efficient processing can only be corrected or nullified, according to these models, by more careful, elaborated processing. These types of conceptualizations paved the way for social psychologists to think of stereotype activation and the use of stereotypes in terms of their automatic and controlled components (e.g., Devine, 1989). Specifically, in the stereotyping context, these dual processes have been conceptualized as involving relatively nonthoughtful, effortless categorization processes on the one hand, and relatively thoughtful, effortful correction processes on the other.

The importance of exploring the role of automatic and controlled processes in stereotyping stems from both theoretical and practical considerations. Theoretically, it is of interest to understand the conditions under which stereotypes are and are not activated, and the ways in which control over stereotype activation and application can be achieved. Practically, understanding the possible controllability of stereotype activation and use has implications for a variety of social and interpersonal settings in which stereotypes can have serious and pernicious consequences, particularly for those who are the objects of stereotypes (Fiske, 1989; Jones, Farina, Hastorf, Markus, & Scott, 1984). Dual-process conceptions of stereotype activation and use (or control over use) have witnessed an explosion of research activity in the recent years (e.g., Blair & Banaji, 1996; Devine, 1989; Devine & Elliot, 1995; Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997; Fazio, Jackson, Dunton, & Williams, 1995; Gilbert & Hixon, 1991; Sinclair & Kunda, 1997). There is little doubt that the research investigating automatic and controlled processes related to stereotype activation and use has been productive. Indeed, in the last decade progress has been made quickly. In reviewing this progress, we believe that the time is ripe for reflecting on what has been learned, as well as for considering issues in need of additional theoretical and empirical attention.

Our main goal in this chapter is to review what has been learned about the automatic and controlled processes involved in stereotype activation and use. In addition, we hope to identify areas in which our knowledge is still rather preliminary, and thus to highlight some productive avenues for future research. As reflected in what follows, the dual-process approach to the study of stereotypes has been guided by several important and interrelated questions: Is stereotype activation unconditionally automatic? When will activated stereotypes be applied in the context of social judgment and behavior? When activated, can stereotype application be controlled or otherwise avoided? Can stereotype activation be inhibited or prevented? What are the mechanisms underlying the control of stereotyping? The chapter is organized around two companion themes: the automaticity of stereotype activation and use and the controllability of stereotype use and activation.

THE AUTOMATICITY OF STEREOTYPE ACTIVATION AND USE

Making the Case for Automatic Stereotype Activation: Illustrative Research

The earliest applications of the distinction between automatic and controlled processes to the study of stereotypes assumed, in line with the then prevailing cognitive theories, that stereotype activation is automatic. Devine (1989), for example, argued that stereotype activation does not require intention, atten-

tion, or capacity; thus, when the appropriate cues are present (e.g., race, gender), stereotype activation should inevitably follow. To test this assumption empirically, Devine (1989, Experiment 2) adapted a procedure for activating cognitive constructs developed by Bargh and Pietromonico (1982), in which primes related to a construct are presented in participants' parafoveal visual field. As a result, participants are not consciously aware of the content of the primes, thus establishing one key feature of automaticity. This procedure, however, should make the construct more accessible and thus more likely to be used to interpret subsequently presented behaviors that are relevant but ambiguous with respect to the primed construct.

In Devine's research, the primes were terms related to the stereotype of blacks (e.g., group membership labels, group physical and trait characteristics), and the participants varied in their self-reported level of prejudice. The level of stereotype priming was also manipulated in this study, and high levels of stereotype priming were expected to increase the accessibility of the black stereotype more than low levels of priming were. After the priming task, participants formed an impression of a target person who engaged in ambiguously hostile behaviors (Srull & Wyer, 1979). Evaluation of ambiguously hostile behaviors was examined because pretesting indicated that hostility is a core element of the stereotype of blacks, and this stereotype has guided research on intergroup perception (e.g., Duncan, 1976). Importantly, no words directly related to hostility were included in the priming phase of the study, so that any priming effects would be due to stereotype activation rather than to a direct priming of the hostility construct. Devine expected and found that the target was rated as more hostile by both low- and high-prejudice participants when priming was high than when it was low. Devine interpreted these data as suggesting that stereotype activation is automatic for both low- and high-prejudice individuals.

Studies using alternative procedures have also suggested that gender and age stereotypes can be activated automatically (e.g., Banaji & Hardin, 1996; Purdue & Gurtman, 1990). For example, Purdue and Gurtman (1990, Experiment 2), using a masked priming procedure to prevent participants from being aware of the age-related primes, provided evidence that age stereotypes are automatically activated. Specifically, the labels "old" and "young" were presented for brief intervals (55 milliseconds [ms] and followed by a pattern mask. Participants were then presented with negative and positive trait terms (e.g., "irritable," "stubborn," "logical," "clever") and were asked to make evaluative judgments of the words (i.e., "Is this generally a good or bad quality for a person to possess?"). Purdue and Gurtman found that evaluative judgments about negative traits were made more quickly when the traits were preceded by the label "old" than when they were preceded by the label "young." These findings were interpreted as a form of automatic ageism. The logic of the studies by Devine (1989) and by Purdue and Gurtman (1990) was that if participants were not aware of the priming of stereotypes, their reactions could not reflect controlled processes.

Instead of preventing conscious awareness of the primes, as was done in the studies just reviewed, Banaji and Hardin (1996) limited the possibility for controlled processing by using an extremely brief interval between the prime and targets (300-ms stimulus-onset asynchrony, or SOA). Conventional wisdom had previously held that SOAs under 500 ms were too brief to allow the operation of controlled processes (Neely, 1977, 1991). In their studies, participants were presented with a sequence of two words and were asked to make a judgment about the second word. In their first study, the first word (i.e., prime) in the sequence was related to gender (e.g., "doctor" or "father" vs. "nurse" or "mother"), and the second word (i.e., target) was a masculine or feminine pronoun (e.g., "he" or "him" vs. "she" or "her"). In the second study, the second word was a gender specific pronoun, a gender-neutral pronoun (e.g., "it," "me") or a nonpronoun (e.g., "do," "all," "is"). Participants were instructed to ignore the prime word and to judge whether the target pronoun was a male or female pronoun (Experiment 1) or a pronoun or not a pronoun (Experiment 2). Banaji and Hardin (1996) found that judgments about consistent prime–target pairings (e.g., "doctor–he") were made more quickly than inconsistent pairings (e.g., "doctor–she") in both studies. These effects were independent of participants' explicit beliefs

about gender and of their awareness of the prime–target relation. Banaji and Hardin argued that finding automatic stereotyping with a gender-irrelevant task (i.e., judgments about whether the target was a pronoun or not in Experiment 2) is particularly powerful in demonstrating the automatic activation of gender stereotypes.

Is Stereotype Activation Truly Automatic?

The illustrative research just summarized, as well as other studies, underscores how the possibility that stereotypes could unconsciously, effortlessly, and unintentionally be activated and influence social thought and behavior has captured the imagination of many social psychologists (Banaji & Greenwald, 1994, 1995; Banaji, Hardin, & Rothman, 1993; Bargh, Chapter 18, this volume; Bargh, Chen, & Burrows, 1996; Blair & Banaji, 1996; Chen & Bargh, 1997; Devine, 1989; Dovidio et al., 1986, 1997; Fazio et al., 1995; Gilbert & Hixon, 1991; Lepore & Brown, 1997; Macrae, Milne, & Bodenhausen, 1994; Perdue & Gurtman, 1990; Pratto & Bargh, 1991; Wittenbrink, Judd, & Park, 1997). Although many researchers have suggested that their stereotype-related findings are indicative of truly automatic processes, Bargh (1989, 1994) has cogently argued that the dichotomy between automatic and controlled processing, especially as applied in social psychology, is misleading. The initial source of the theoretical confusion was the early assumption that automatic and controlled processes were mutually exclusive and exhaustive processes. In careful examinations of the literature on automaticity, Bargh (1989, 1994) has suggested not only that the dichotomy is misleading, but that automaticity is more complex than researchers typically assume. Theoretically, to be considered truly automatic, a cognitive process has to meet all four criteria of automaticity; that is, it has to be unintentional, involuntary (uncontrollable), and effortless, and to occur outside of conscious awareness.

Bargh's (1989, 1994) reviews have clearly revealed that, in practice, researchers have not been as stringent as this in their identification of processes as automatic. In the social-cognitive literature generally, and the stereotyping literature in particular, a process has often been labeled "automatic" if it satisfies any of the four criteria. Thus, if a process is effortless and occurred without awareness (e.g., Devine, 1989; Purdue & Gurtman, 1990), or occurs without explicit intentions (e.g., Banaji & Hardin, 1996), it has been considered automatic. Because awareness, attention, intention, and control do not necessarily co-occur and may occur in various combinations, Bargh (1994) has recommended that researchers be more explicit and precise in their identification of processes as automatic.

Indeed, equating all these types of automaticity has produced some confusion concerning what is meant by "automaticity," and has led to erroneous conclusions about the likelihood that a process can be controlled. In the context of stereotyping, for example, demonstrations of the unintended and efficient activation of racial or gender stereotypes led many to conclude that stereotyping is uncontrollable (see Bargh, Chapter 18, this volume, for an argument supporting the uncontrollability of stereotyping). This type of reasoning has potentially perilous implications. For example, Fiske (1989) argued that assumptions that stereotyping is automatic (i.e., inevitable and uncontrollable) have serious implications for judgments of responsibility in legal settings such as discrimination cases. After all, people cannot be held responsible for what they cannot control.

In addressing these issues, Bargh (1989) provided an elaborated analysis of automaticity, which illustrates that all automatic processing is conditional because it is dependent on a specific set of circumstances. Specifically, Bargh identified three classes of automaticity. "Preconscious" automatic processes occur prior to conscious awareness and only require the presence of a triggering stimulus to initiate them. "Postconscious" automaticity requires some type of conscious processing of relevant stimuli, but the outcome of this processing is unintended (e.g., nonconscious consequences of conscious thought and the effects of recent construct priming). "Goal-dependent" automaticity requires intentional, goal-directed processing, the outcomes of which may or may not be intended (e.g., making trait inferences when one's goal is to memorize sentences containing behaviors; well-practiced procedures that one intentionally

employs in social judgment or as part of a complex skilled action, such as driving or typing). In the stereotyping literature, the types of automaticity most often explored in experimental settings have been of the preconscious (e.g., Chen & Bargh, 1997; Devine, 1989; Purdue & Gurtman, 1990) and postconscious (e.g., Banaji & Greenwald, 1995; Banaji & Hardin, 1996; Banaji et al., 1993; Blair & Banaji, 1996; Macrae, Milne, & Bodenhausen, 1994) varieties.

The complex nature of automaticity and its conditional nature have been explored in studies designed to push the limits of the automaticity analysis of stereotype activation and application. These findings have begun to bear out Bargh's cautionary statements regarding the application of the label "automaticity." For example, several studies have obtained evidence suggesting that stereotype activation is not unconditionally automatic when individuals are exposed to members of stigmatized groups or the symbolic equivalent (e.g., Blair & Banaji, 1996; Fazio et al., 1995; Gilbert & Hixon, 1991; Lepore & Brown, 1997; Sinclair & Kunda, 1997; Wittenbrink et al., 1997). Such findings ultimately encourage not only careful analysis of automaticity, but careful thinking about the nature of control over stereotype activation and use.

Gilbert and Hixon (1991), for example, demonstrated that stereotype activation could be prevented when perceivers' cognitive resources were drained. This finding is important for the automaticity analysis of stereotype activation, because one of the defining features of automatic processing is that it is not limited by available capacity. In Gilbert and Hixon's study, participants completed a word fragment completion task under conditions in which half of the participants were made cognitively busy (i.e., told to remember an eight-digit number), but the others were not made busy. The word fragments were presented via videotape by an Asian assistant. Some of the words could be completed in a stereotypic manner (e.g., "s_y" could be "shy"; "r_ce" could be "rice," etc.), and hence this task was used as a measure of stereotype activation. Gilbert and Hixon reasoned that to the extent that the presence of the Asian assistant automatically activated stereotypes, the number of stereotypic completions should be equivalent for the busy and not-busy participants. In contrast with the automaticity-of-stereotype-activation analysis, Gilbert and Hixon found that cognitively busy participants generated fewer stereotypic completions than participants who were not cognitively busy during the word fragment completion task (see also Spencer, Fein, Wolfe, Hodgson, & Dunn, in press).

More recent studies continue to highlight the complexity of automaticity and control. For example, Sinclair and Kunda (1997, Study 3) showed that the tendency for stereotype activation or inhibition to occur depended on the type of feedback participants received from the target. In this research, participants were either criticized or praised by a negatively stereotyped (black) evaluator, and stereotype activation (word fragment completion task as in Gilbert & Hixon, 1991) and application (evaluative judgments of the target) were measured. Participants who had been criticized by the black evaluator showed evidence of stereotype activation (i.e., above baseline) and applied the stereotype in their judgments of the evaluator, apparently to discredit him. Participants who had been praised by the black evaluator showed an apparent motivated inhibition of stereotype activation (i.e., stereotype activation was below baseline), presumably reflecting an effort to avoid discrediting the evaluator. The point at which the inhibition or reduced accessibility of the stereotype occurs, and the exact mechanisms producing this effect, are not yet well specified. However, generally supporting their motivational account, Sinclair and Kunda found that participants' evaluative judgments of the black evaluator were mediated by the extent to which the black stereotype had been activated.

The pattern of findings, however, was different when the participants were detached observers rather than direct recipients of the criticism or praise (e.g., Study 4, in which participants observed others being praised or criticized by a black evaluator). Specifically, detached observers showed evidence of stereotype activation in both the criticism and praise conditions, but their judgments of the negatively stereotyped evaluator were not related to the activated stereotype. Apparently these participants did not use their activated stereotypes in making their judgments of the evaluator. Sinclair and Kunda suggested that the selective application and inhibition of ste-

reotypes resulted from self-protective motives of the recipients who actually received negative or positive feedback from black evaluators; the detached observers would not have had such self-protective motives engaged. These findings suggest that the activation and inhibition of stereotypes may be fairly flexible and may occur in the service of specific motives.

In other recent work, Blair and Banaji (1996) showed that intentional processes could operate at SOAs previously thought to preclude the possibility for controlled processing. More specifically, Blair and Banaji (1996) used a priming paradigm to demonstrate that the extent to which stereotypes are automatically activated can be modified by the conscious intention to replace stereotypic thoughts with counterstereotypic thoughts. In their studies, male and female names were presented on a computer screen following the presentation of a trait or nontrait word that was either stereotypically masculine or feminine (e.g., "dependent" or "nurse," followed by "Jane" or "James"). Blair and Banaji (Experiments 3 and 4) explicitly provided some participants with counterstereotypical expectancies. Participants were told that following a stereotypically male word, they should expect a female name, and following a female word, they should expect a male name. The names were presented at one of two different intervals following the trait primes. For some participants, the interval was very brief (350 ms in Experiment 3, and 250 ms in Experiment 4). For other participants, the interval was increased to 2,000 ms, which provided enough time for participants to reflect on their expectancies consciously.

The results showed that, as expected, participants were able to reverse the stereotype-priming effect with the longer interval. In other words, participants in this condition identified female names more quickly than male names following male words, and male names more quickly than female names following female words. Their findings also showed that in the 250- and 350-ms intervals conditions, the counterstereotype expectancy moderated the stereotype-priming effect. That is, although participants did not have enough time to apply their expectancy and reverse the stereotype-priming effect consciously, they also did not show the patterns of facilitation that result from automatic stereotype activation.

In sum, it appears that when demands are placed on perceivers' cognitive resources (Gilbert & Hixon, 1991; Spencer et al., in press) stereotype activation can be prevented. When people are sufficiently motivated, recent evidence suggests that stereotype activation can be inhibited (Sinclair & Kunda, 1997). One reason why such findings are important is that if stereotypes are not activated or are effectively inhibited, they cannot be used in subsequent judgments or behaviors. In addition, intentions can override the effects of automatic stereotype activation even under conditions that were previously thought to preclude controlled processing (Blair & Banaji, 1996). These types of findings pose a serious challenge to the notion that stereotypes are unconditionally and inevitably activated in the presence of members of a stereotyped group. As such, they suggest that the automatic–controlled dichotomy may, as Bargh has argued, ultimately be misleading regarding both the nature of stereotype activation and the possibility of control over stereotyping processes.

In sum, theoretical arguments and accumulating findings suggest that automaticity of stereotype activation is considerably more complex than researchers once thought. This work has made it increasingly clear that there are limits to what was once presumed to be rather inevitable. Specifically, the mere presence of members of stereotyped groups (or their symbolic equivalents) does not *necessarily* result in stereotype activation. We expect that future research will further explore the limits of the automaticity of stereotype activation. Nevertheless, the cumulative evidence also suggests that—despite the fact that stereotype activation is not unconditionally automatic—it is often unintended and efficient. In short, it is very likely. Given its high likelihood, the social injustices that result from stereotype use can be avoided only if perceivers can effectively control their stereotyping. It is to issues of control that we now turn.

CONTROLLED PROCESSING AND THE CONTROL OF STEREOTYPING

Just as the previous thinking about automatic and controlled processes as they apply to ste-

reotypes proved to be somewhat misleading in terms of understanding the automaticity of stereotyping, the initial thinking also seems to have overlooked some important issues related to stereotype control. Specifically, the either–or reasoning (i.e., a process is either automatic or controlled) appears to have led researchers astray in two ways that are relevant to issues of stereotype control. First, as we have pointed out previously, it spawned the erroneous conclusion that stereotyping is frequently uncontrollable (but see Bargh, Chapter 18, this volume). That is, because stereotype activation was found to have certain properties of automaticity (e.g., lacking intention and being efficient), it was also assumed to be uncontrollable (see Bargh, 1994). Furthermore, stereotype application following stereotype activation was assumed to be uncontrollable in situations that do not afford the motivation and ability to engage in controlled processing. These sorts of assumptions seem to have discouraged researchers from investigating certain issues in relation to stereotype control. For example, if one assumes that stereotype activation is uncontrollable, why would one pursue investigations of the potential controllability of stereotype activation?

A second shortcoming of the either–or reasoning is that it has not been conducive to stimulating research on the exact nature of control. Specifically, research to date that has investigated issues of stereotype control has focused on the question of whether control can be achieved over stereotypic responses (e.g., Devine, 1989; Gilbert & Hixon, 1991; Kruglanski & Freund, 1983). However, it has not been as concerned with identifying the precise mechanisms through which control is achieved. This seems to be an unfortunate albeit natural consequence of rigid adherence to the dual-process conception, in that the dichotomy has focused attention on the question of "Is it automatic or controlled?" Such a focus seems to have discouraged investigators from attempting to understand the microprocesses involved in implementing control efforts, the points at which particular control strategies are implemented, and the efficacy of these control strategies.

It seems appropriate at this juncture, therefore, to focus greater attention on issues related to the controllability of stereotyping. Our goal for the remainder of this chapter is to provide a framework for thinking about control strategies that is organized on the basis of *when* control attempts are exerted (i.e., do these occur after stereotypes have been activated, during their activation, or before their activation?), *how* control may be achieved (i.e., what are the mechanisms and strategies used under various conditions?), and *who* is likely to attempt control.

There are three ways in which control is relevant to the question of whether stereotyping will occur. First, a person can override the influence of an activated stereotype with responses based on controlled processing.[1] In other words, although the stereotype is fully activated, a stereotype-consistent response is prevented by overriding it with a response that is based on more cautious, careful processing. Second, a person can stop or interrupt stereotype activation once it has started, so that a stereotypic response may be averted. In this case, controlled processes are brought to bear earlier, exerting an influence over the activation process itself so as to stop or interrupt it. Then a controlled process is used to generate a nonstereotypic response. Third, control can be exercised over prejudiced responses by preventing stereotype activation from occurring in the first place. We address each of these possible avenues for stereotype control below.

Overriding Responses Resulting from Stereotype Activation

As we have already noted, a good deal of evidence indicates that activated stereotypes need not be applied in the generation of social judgments and behaviors. Bargh (1994) has nicely summarized this point by stating that "the use of automatically supplied input in consciously produced judgmental output is not mandatory" (p. 30). Perceivers have a choice in how they respond toward others (Fiske, 1989). Certain conditions must be met, however, for that choice to be realized and for some form of controlled-processing strategy to be spurred into action.

First, one must be aware of the potential influence of the stereotype. This condition is rather obvious; one cannot counteract the outcome if one is unaware of the need for counteraction. Second, one must have the available cognitive resources to initiate the

controlled processing necessary for overriding responses resulting from stereotype activation (Bodenhausen, 1990; Bodenhausen & Lichtenstein, 1987; Bodenhausen & Wyer, 1985; Devine, 1989; Fiske & Pavelchak, 1986; Gilbert & Hixon, 1991; Jamieson & Zanna, 1989; Kruglanski & Freund, 1983; Pratto & Bargh, 1991). Finally, one must be sufficiently motivated to initiate some strategy to override stereotypic responses.

This motivation to override stereotypic responses may be situationally induced in a variety of ways. For example, the situational salience of social norms suggesting that prejudice and stereotyping are inappropriate may encourage even those with prejudiced tendencies to monitor their responses and to override prejudiced responses with less prejudiced responses (Gaertner & Dovidio, 1986; Monteith, Deneen, & Tooman, 1996; Plant & Devine, 1998). Explicit instructions to avoid stereotypic responses may instigate control efforts as well (Macrae, Bodenhausen, Milne, & Jetten, 1994). Being dependent on members of stereotyped groups who control one's outcomes also gives rise to careful processing and reduced stereotyping (Erber & Fiske, 1984; Neuberg & Fiske, 1987). When the stakes are high, people do not want to risk reliance on potentially inaccurate social perceptions resulting from stereotype use. Finally, situations that induce the motivation to be accurate (Brewer, 1988; Brewer & Harasty, Chapter 12, this volume; Neuberg, 1989; Fiske & Neuberg, 1990; Fiske et al., Chapter 11, this volume), or that make one feel accountable (Tetlock & Kim, 1987) for one's judgments and behaviors, encourage a reliance on controlled processes during response generation.

Presumably, even persons who hold high-prejudice attitudes toward members of the stereotyped group, and who therefore have no personal qualms about the application of stereotypes, can be roused to engage in controlled processing in situations that create the motivation to do so (Plant & Devine, 1998). However, the motivation is likely to be more cross-situationally salient among individuals who are internally motivated to override the effects of automatic processes. Specifically, responding in prejudiced ways poses a conflict with the personal beliefs and egalitarian ideals held by low-prejudice individuals (Devine, Monteith, Zuwerink, & Elliot, 1991; Monteith, Devine, & Zuwerink, 1993; Monteith, 1996a; Plant & Devine, 1998). Therefore, low-prejudice individuals' internal motivation to avoid stereotypic responses will prompt them to take the necessary steps to avoid such responses (Devine, 1989; Devine & Monteith, 1993; Monteith, 1993).

There may be many routes to the same ultimate outcome of reducing the impact of stereotypes on social thought and behavior. The problem of stereotype control following stereotype activation thus may very well be a problem of identifying the best alternative(s) for meeting this goal. In what follows, we review the various control strategies that researchers have suggested perceivers may use; we also speculate about the conditions under which these control strategies are likely to be instigated. Additional empirical work will be needed to establish with greater certainty when and why particular control strategies are instigated by whom. In addition, research will need to address the comparative efficacy of alternative strategies—both individually and jointly.

Gathering Additional Information

Perceivers can avoid stereotypic responses by taking the more effortful and time-consuming route of gathering individual pieces of information about the target, rather than relying on activated stereotypes. In other words, the perceiver can gather information about a target that goes beyond the category-based (and associated stereotypic) information that is immediately available from basic perceptual processing. The two leading models of person impression formation (Brewer, 1988; Brewer & Harasty, Chapter 12, this volume; Fiske & Neuberg, 1990; Fiske et al., Chapter 11, this volume) each suggest that information gathering can be more or less thorough. In general, the less information gathered, the more likely it is that the resulting impression will be category-based (i.e., stereotypic). If stereotypic responses are to be avoided, perceivers need to engage in a type of processing that yields a highly individualized impression. For example, in Fiske and Neuberg's model, the final stage of processing entails piecemeal integration, whereby information is gathered and in-

tegrated in an attribute-by-attribute manner. In Brewer's model, category-based impressions of individuals are avoided through a bottom-up type of processing called "personalization," in which the individual (rather than the category) serves as the basis for organizing all of the information that has been gathered. According to these models, such elaborated processing will only occur when perceivers are sufficiently motivated to engage in such processing (e.g., because of personal or situational motivations or task demands).

Recent evidence suggests that the internal motivation to avoid prejudiced responses prompts people to attend to individuating information. Specifically, Sherman, Stroessner, and Azam (1997) found that low-prejudice individuals' judgments of a gay target were closely related to individuating information presented about the target, whereas high-prejudice participants' judgments were not. Even high-prejudice individuals, who are not internally motivated to respond without prejudice (Plant & Devine, 1998), may be motivated to attend to individuating information under some circumstances, such as when they are dependent on the target for desired outcomes (see Fiske, 1993).

The relatively effortful and time-consuming practice of gathering information to avoid relying on initially activated stereotypes is a control strategy that is probably used in impression formation and target evaluation situations. More generally, this strategy may be used when perceivers are forming judgments or evaluations relevant to public policies that affect the stereotyped group (e.g., "What do I think about this affirmative-action policy?"). If there is insufficient information or time to gather and process the information, perceivers may rely instead on a different control strategy for generating a nonprejudiced response (e.g., generating a response that a perceiver believes is egalitarian).

Replacement with Egalitarian Responses

In certain situations, stereotypic responses that initially come to mind can be overridden and replaced with more egalitarian responses that apparently come to mind through more careful and cautious responding. For example, in Devine's (1989) research, low-prejudice individuals provided nonstereotypic, egalitarian descriptions of their beliefs about blacks when they had ample time to generate those descriptions. In contrast, when limits were placed on low-prejudice participants' cognitive capacity, they showed evidence of stereotype application. Likewise, Monteith (1993) found that low-prejudice participants provided unfavorable (nonstereotypic) evaluations of jokes about gays, but only when they had experienced an earlier experimental manipulation that was designed to instigate controlled processing in the generation of prejudice-related responses. In both sets of research, a stereotype control strategy was implemented among the low-prejudice participants only. However, one can imagine other situations (e.g., in the presence of social norms prohibiting prejudiced expressions) that likewise would encourage high-prejudice individuals to override stereotypic responses with more egalitarian ones (cf. Plant & Devine, 1998).

This particular control strategy can be used only when there is a clear, egalitarian alternative to responding in a prejudiced manner. To be sure, there are many such situations in everyday life, including ones that parallel the Devine (1989) and Monteith (1993) measures (e.g., when people describe their beliefs about blacks, and when they respond to jokes made at the expense of stereotyped groups) and other situations (e.g., when people choose a partner for completing a task). However, precisely what sort of response is "egalitarian" may not be entirely clear in other situations (Devine, Evett, & Vasquez-Suson, 1996). Also, in other situations that require one to gather and integrate a good deal of information (e.g., evaluating a job applicant), alternative control strategies may be necessary instead of or in addition to a reliance on egalitarian beliefs.

Correction

After stereotypes have been activated, perceivers may attempt to assess the likely impact of the stereotypes on their responses, and to adjust their responses in a direction opposite to the presumed influence of the stereotype (Wilson & Brekke, 1994; Wegener & Petty, 1997). This is a frequently discussed

strategy for mitigating the unfair use of stereotypes and judgments. For correction processes to operate, perceivers must (1) believe that bias is operating, (2) be motivated to make corrections, and (3) have naive theories about the direction and magnitude of the biasing effect of stereotypes on responses. For example, Wegener and Petty (1997) have argued, according to their flexible-correction model, that perceivers can correct for the perceived influence of a variety of factors (e.g., transient moods, social norms, salient beliefs, motives) on a wide array of outcomes (e.g., attributions, impressions, persuasion, etc.). In the domain of stereotyping, Wegener and Petty have suggested that people may vary in both whether they believe that their judgments are biased by stereotypes and whether they are motivated to initiate processes to correct for such biases. In particular, these authors suggest that low-prejudice people who are motivated to correct for unfair bias are the ones most likely to manifest such correction processes. This strategy for overriding stereotypic responses is likely to occur in situations that call for considered evaluations and judgments of others (e.g., evaluating job applicants, grading students' papers, forming impressions of others). To the extent that people can adjust for such biases, correction holds promise for correcting unintended effects of activated stereotypes. Subsequent work addressing the nature of people's naïve theories concerning the impact of stereotypes on judgments and behaviors, whether accurate or not, may help to elucidate the challenges of combating the influence of stereotypes—at least as understood by naive social perceivers.

Suppression

Another control strategy—one that has received a good deal of empirical and theoretical attention in recent work—is suppression (see Wegner, 1994). Specifically, in an attempt to control prejudiced responses, people may try to banish stereotypic thoughts from the mind (i.e., to suppress stereotypic thoughts) and to replace them with alternative, "distracter" thoughts. How does this control strategy differ from those discussed above? To the extent that individuating information or egalitarian thoughts are used as the distracter thoughts, the strategies have some similarity. The important divergence is that the active effort to avoid and banish stereotypic thoughts from the mind is argued to have undesirable outcomes.

Specifically, recent findings have underscored the possibility that this control strategy may have unintended effects, such that stereotypic thoughts become more accessible than if suppression had never been attempted (Macrae, Bodenhausen, Milne, & Jetten, 1994; Macrae, Bodenhausen, & Milne, in press; Wegner, Erber, & Bowman, 1993, as cited in Wegner, 1994). In other words, stereotypic thoughts may "rebound," and subsequently exert undue influences on social thought and behavior. Such paradoxical outcomes have been explained using Wegner's model of mental control (Macrae, Bodenhausen, et al., 1994; Wegner, 1994; Wegner & Erber, 1992). According to this model, control is effectively achieved as long as the perceiver is able to persist in an effortful search for distracter thoughts to replace the unwanted (stereotypic) thoughts. However, while this search-and-replace process occurs, an ironic monitoring process supposedly searches consciousness for evidence of the stereotypic thoughts, which causes these thoughts to be repeatedly primed and thus increases their accessibility. Therefore, if the functioning of the operating process is undermined (e.g., due to cognitive load; Wegner, 1994), or if the conscious intention to avoid the unwanted thought is relaxed (Macrae, Bodenhausen, et al., 1994), stereotypic thoughts may rebound. The interesting findings obtained in this line of research suggest that the more people try to reduce their stereotypic thinking through suppression, the more they will fail to do so (e.g., Macrae, Bodenhausen, et al., 1994).

Because stereotype suppression as a control strategy emphasizes the potential drawbacks of attempts to avoid thinking about stereotypes while simultaneously thinking about something else, there is the possibility that this control strategy is applied in *all* situations in which perceivers are aware that stereotypes will potentially influence their responses. However, this suggestion is difficult to reconcile with the findings from a variety of experiments in which control efforts have been successful. It appears that there are important

boundary conditions to stereotype rebound that initial research on the topic was not designed to detect. For example, recent evidence that low-prejudice individuals do not appear to be prone to stereotype rebound (Monteith, Spicer, & Tooman, 1997; Pressly & Devine, 1997), and that high-prejudice participants are not prone to it under certain circumstances (Monteith, Spicer, & Tooman, 1997) leads us to conclude that there are important moderating influences on the stereotype rebound effect (see Monteith, Sherman, & Devine, 1998). For instance, when stereotype suppression is well practiced (as may be the case for low-prejudice individuals) or is paired with certain other control strategies (e.g., simultaneous stereotype suppression and individuation of targets), control efforts may succeed.

Potential Obstacles to Successful Control

Individuals may experience success in their attempts to override the influence of stereotypes by employing the control strategies described above, either individually or collectively. However, the inherent nature of many of the situations in which control is necessary for avoiding bias creates a variety of potential obstacles to successful control.

First, the criteria for detecting the potential for bias may be ambiguous. That is, perceivers must first be aware that stereotypes may influence their responses before efforts to correct such responses can be instigated. The challenge for social perceivers, however, is that there are often no clear-cut criteria for knowing when judgments will potentially be biased. This challenge is discussed by Wilson and Brekke (1994) in connection with what they call "mental contamination." These theorists underscore the possibility that judgments, emotions, or behaviors will be biased in unwanted ways because people do not detect the potential for bias.

The failure to detect bias may occur in part because people have limited access to their mental processes (Wilson & Brekke, 1994; Nisbett & Wilson, 1977), so that the mental processes leading to bias can occur without ever being consciously detected. This failure in detection is illustrated well in the context of stereotyping in Banaji and her colleagues' research on implicit (or unconscious) stereotyping (Banaji & Greenwald, 1995; Banaji et al., 1993; Greenwald & Banaji, 1995). For example, Banaji et al. (1993) found that participants who were primed with the construct "dependence" subsequently rated a female target as more dependent than did participants in a neutral-priming condition. Similar, though less strong, priming effects were observed in connection with the construct "aggressive" and judgments of a male target's aggressiveness. As Banaji et al. concluded, such implicit stereotyping findings "suggest that stereotyped information may be an especially potent source of discrimination when it is not consciously attended to at the time of judgment" (p. 279). Further emphasizing people's potential inability to take control over their prejudiced responses, Banaji et al. asserted that "Implicit stereotyping effects undermine the current belief about the role of consciousness in guaranteeing equality in the treatment of individuals irrespective of sex, class, color, and national origin" (p. 280).

People also may fail to detect their potential for bias because, although they are aware that certain mental processes can result in stereotype use, they underestimate their own susceptibility to such bias or overestimate their own ability for mental control (Wilson & Brekke, 1994). This leads us to the second potential obstacle to successful control, which is that the rules for overriding biased responses may be ambiguous or not well specified. The problem here is that people need to know precisely how much and in what direction they are being influenced by activated stereotypes to override their responses, so that completely unbiased responses can be provided. However, people rarely come to situations equipped with a set of formulas for computing the direction and magnitude of potential bias. Thus, people may underadjust or even overadjust their responses (as has been found in reversals of classic priming effects; Lombardi, Higgins, & Bargh, 1987; Martin, 1986). Moreover, even if people have clear theories about how their responses may be biased by stereotypes, there is no guarantee that they are correct. Wegener and Petty (1997) have shown that adjustments can be systematically related to participants' naive theories about bias, but that these theories are sometimes incorrect.

A third difficulty is that the criteria for evaluating success at achieving control can be ambiguous, so people may have difficulty learning how to implement strategies of control successfully across situations. In some cases, success at achieving control may be fairly clear, such as when a person does not laugh at a stereotypic joke. However, other situations may be inherently more ambiguous, such as when a teacher is evaluating a student's performance (e.g., Darley & Gross, 1983) or a person is engaged in an interpersonal interaction with a member of a stereotyped group (Devine et al., 1996). In such situations, accurate feedback about the degree of success may not be readily available or easily determined. The world outside the laboratory does not readily supply a control condition against which a person can evaluate the success of his or her control efforts.

Because research designed to examine the processes of control is relatively new, a high priority for future work is to examine systematically the extent to which these potential obstacles undermine control efforts. Early work has focused on documenting failures of control, and, as such, the research has been designed so as to maximize the likelihood of failure by creating insurmountable obstacles to control. What is not clear at present is how often such failures occur in naturally occurring environments. Are natural social perceivers as prone to control failures as their counterparts in the social-psychological laboratory? It seems imperative that future research on control be designed so as to provide an answer to this question.

Interrupting Stereotype Activation and Generating Nonprejudiced Responses

Although overriding stereotypic responses using controlled processing represents one way to achieve stereotype control, there are clearly situations in which individuals will be unable to implement this type of control (see Bargh, Chapter 18, this volume, for an extreme position). When people are unaware of the potential influence of stereotypes, or unable to muster up the cognitive resources or motivation to override their stereotypic responses, they will be unable to control their prejudiced responses. Even among those people who are most internally motivated to control their prejudices (i.e., low-prejudice individuals), the typical day is very rushed and multifarious. Thus, the type of constant vigilance needed to detect possible stereotype use is unlikely, not to mention the improbability of having continually available the cognitive resources needed to override stereotypic responses. According to this reasoning, even the best-intentioned individuals are likely to be prone to generating prejudiced responses (e.g., Devine et al., 1991).

However, in this section we argue that processes of learning and self-regulation may enable individuals to gain control over their prejudiced responses, even when the situation seems to favor a prejudiced response. As an introduction to our argument, consider the following scenario: Paula (who is white) is tired, hungry, and rushed as she shops for groceries on the way home from work. She is also frustrated, as she cannot find an item that she needs. It is in this state that she makes a stereotypic inference that is frequently made in relation to black persons (see Feagin, 1991). Specifically, she assumes that a black woman in the store is an employee rather than a fellow shopper, and she asks the woman where the sought-for item is located. Paula realizes her mistake at the same time the woman informs her that she does not in fact work in the store. Paula resumes her search for the item, feeling guilty about her faulty and insulting stereotypic inference, and wondering how she could have made such a blunder. Thus far, this scenario illustrates the failure to override a stereotypic response with a nonprejudiced response. However, the fact that Paula has experienced guilt over her stereotypic response and spent even a few seconds considering her error is extremely important for the likelihood that she will make the same sort of stereotypic inference in the future. The next time Paula is in the grocery store (or, for that matter, a different store) and circumstances conspire (e.g., she is tired and hurried) to create the ideal situation for stereotype use, she should be less likely to do so. This is because Paula's previous experience should have resulted in a building of associations among a store environment, her stereotypic inference, and the guilt she experienced in relation to that inference. As a consequence of these associations, the next time a stereotypic re-

sponse is possible, Paula essentially should "think twice."

This scenario illustrates how processes of learning and self-regulation may help individuals to detect situations in which they may engage in a prejudiced response, to interrupt ongoing processing (i.e., stereotype activation), and then to generate a nonprejudiced response based on more thoughtful processing. We now provide a more detailed theoretical account of the precise nature of these processes—an account based on the model of self-regulation of prejudiced responses (Monteith, 1993).

Prerequisites to Self-Regulating Prejudiced Responses

There are two important prerequisites to the self-regulation of prejudiced responses. First, individuals must recognize that they have relied on a stereotype in an initial situation for that experience to affect the subsequent likelihood of a similar use of a stereotype. That is, people must "catch" themselves engaging in responses that are discrepant from how they believe they should respond. People's awareness of their proneness to such prejudice-related discrepant responses has been examined in a variety of studies (Devine et al., 1991; Monteith, 1996a, 1996b; Monteith et al., 1993; Plant & Devine, in press; Pressly & Devine, 1992; Zuwerink, Devine, Monteith, & Cook, 1996). This research has revealed that approximately 80% of participants report that they are prone to responding in ways that are more prejudiced than their personal beliefs suggest are appropriate. In addition, other research (Amodt & Devine, 1994) has indicated that people who actually engaged in a prejudiced response subsequently did realize its inconsistency with their beliefs about how they should respond, without any encouragement to come to this realization on the part of the experimenter. Thus, it seems likely that individuals will realize their prejudiced responses with at least a fair amount of frequency, which will help in setting the stage for the subsequent self-regulation of those responses.

The second prerequisite to self-regulating prejudiced responses is that some form of punishment must be experienced when one engages in a stereotypic or prejudiced response. As will become clearer shortly, the experience of punishment is essential for the subsequent instigation of self-regulatory mechanisms. The discrepancy-related research described above has revealed that low-prejudice individuals experience strong feelings of negative self-directed affect (e.g., guilt) in relation to their stereotypic responses, which serve as a self-punishment. These feelings result because low-prejudice individuals experience a strong sense of moral obligation to avoid stereotypic responses. In contrast, high-prejudice individuals experience less of this obligation (Monteith & Walters, 1998), so that they experience modest levels of guilt at best in relation to their stereotypic responses. Importantly, these differences between low- and high-prejudice individuals carry with them the implication that low- but not high-prejudice individuals are likely to self-regulate their prejudiced responses.

The Process of Self-Regulation: Learning to Control Prejudiced Responses

Exactly how can individuals interrupt stereotype activation so that nonprejudiced responses can be provided? According to the model of self-regulation of prejudiced responses (Monteith, 1993), individuals' social histories are thought to provide them with opportunities to learn from their mistakes, to identify situations in which they are especially likely to commit the same mistakes, and therefore to avoid making those mistakes.

Specifically, based on the work of Devine (1989) and Devine et al. (1991), the model posits that group membership cues (e.g., members of stereotyped groups) can spontaneously activate stereotypes and result in a prejudiced response that is discrepant from how one believes one should respond (hereafter referred to as a "discrepant response"). As explained earlier, realizing that one's response violates internally derived standards for responding produces feelings of guilt. Theoretically, the experience of guilt serves as a punishment for engaging in the prejudiced response (see Gray, 1982; Fowles, 1980) and motivates discrepancy reduction efforts (see Aronson, 1968; Bandura, 1986; Bandura & Jourdan, 1991; Duval, Duval, & Mulisis, 1992; Duval & Wicklund, 1972; Festinger, 1957; Rokeach, 1973).

According to the self-regulation model, another consequence of awareness of a preju-

dice-related discrepant response is heightened self-focused attention, which then instigates attempts to regulate or control subsequent discrepancy-relevant responses (see Pyszczynski & Greenberg, 1986, 1987). Exactly how can this control be achieved? At this point, Monteith (1993) extrapolated from Gray's (1982; see also Patterson & Newman, 1993) neuropsychological model of motivation and learning, in order to understand how control might be gained over spontaneously generated prejudiced responses. As inferred from Gray's work, awareness of a discrepant response should activate the "behavioral-inhibition system" (BIS). The activation and operation of this system are of central importance for understanding how stereotype activation can be interrupted and controlled in the future.

Specifically, BIS activation results in a brief increase in arousal and an automatic, momentary pausing or interruption of ongoing behavior (i.e., "behavioral inhibition") (Gray, 1982; Fowles, 1980; Patterson & Newman, 1993). Then the behavioral sequence that resulted in the "faulty" (i.e., discrepant) response is allotted enhanced attention, so that the person can determine what went wrong. In addition, exploratory/investigative behavior should be initiated to search for indications of the discrepant response, so that the individual can identify environmental stimuli that were present when the discrepant response occurred. Importantly, these attentional and investigative consequences should work in concert, in order for an association to be created among cues present when the discrepant response occurred, the discrepant response itself, and the punishment (i.e., guilt) that results from engaging in the prejudiced response. In other words, through a process that Patterson and Newman (1993) call "retrospective reflection," cues for punishment can be established.

The operation of the BIS and the establishment of cues for punishment are critical to the subsequent self-regulation of prejudiced responses. Specifically, when automatic processes give rise to stereotype activation on subsequent occasions, and previously established cues for punishment are present, a "warning signal" of sorts should be sounded. This should cause the BIS to be activated, resulting in increased arousal and behavioral inhibition (i.e., a slowing of ongoing behavior). Consequently, the response generation process should be slowed and executed more carefully (see Gray, 1982; Patterson & Newman, 1993). Thus, rather than relying on automatic processes when generating a response, the person should initiate controlled processes. This ultimately should allow the person to inhibit stereotype-based (prejudiced) responses, and to bring personal beliefs to mind as a basis for responding instead.

In sum, the critical elements of how control is achieved over stereotypes, according to the self-regulation model, is that external stimuli that have come to serve as cues for punishment that trigger inhibitory mechanisms. Through behavioral inhibition, the automatic processing that would otherwise give rise to a prejudiced response is disrupted, and the individual has the opportunity to generate a nonprejudiced response based on controlled processing (i.e., through individuation, generation of an egalitarian response, etc.). Control is exerted both in the interruption of stereotype activation and in the generation of a personally acceptable response.

Research to date is consistent with the notion that control can be achieved over prejudiced responses in the ways described by the self-regulation model. For example, low-prejudice subjects who believed they engaged in prejudiced responses experienced guilt, showed heightened self-focus and attention to discrepancy-relevant information (Monteith, 1993, Experiment 1), and showed evidence of more careful and deliberate subsequent responding (Monteith, 1993, Experiment 2). Moreover, after experiencing a prejudice-related discrepancy, low-prejudice individuals were less likely to generate a prejudiced response in a subsequent task than subjects who did not experience such a discrepancy. Presumably, subjects who believed they had previously responded in a prejudiced manner were able to regulate their responses in the subsequent task, so that automatic, prejudiced responses were inhibited and belief-based (low-prejudice) responses were generated instead.

Additional research is clearly needed to examine this potential form of control further. For example, when cues for punishment have been established in an initial situation, does their presence days later decrease the likelihood of a prejudiced response—as suggested by the model? How similar do the cues have

to be across situations to be effective? How long does it take individuals to learn to regulate their responses? What factors facilitate versus or obstruct self-regulation efforts? How applicable is the self-regulation model to non-college-student samples? These and other questions require exploration. Nevertheless, there are at present theoretically and empirically based reasons for suspecting that individuals can learn to interrupt the stereotype activation process before stereotypic responses are generated.

Controlling Stereotype Activation

The third form of stereotype control that we discuss is the actual control (prevention) of stereotype activation. This form of control should obviously be more effective than any other form of control, because stereotypes cannot possibly influence responses if they have not been activated. How can people avoid the activation of stereotypes? One possibility is that the stereotype is not learned well enough to be automatically activated in the first place. To be sure, the ease with which stereotypes come to mind differs across individuals and especially across target groups. In some cases, stereotypes will not come to mind spontaneously. Of greater relevance to the goals of this chapter are instances in which stereotypes that were at one time activated in a rather automatic manner (e.g., without intention or awareness) have, through some controlled effort, become cognitive constructs that no longer are activated in this way.

The questions of whether and how controlled processing can be implemented so that stereotype activation is prevented in the end are questions that only recently have begun to be investigated. We believe that these issues may have been relatively neglected because of popular thinking about automatic and controlled processes as mutually exclusive and noninteractive (but see Chen & Chaiken, Chapter 4, this volume). Only very recent thinking explicitly considers the possibility that there may be an interplay between automatic and controlled processes. As Blair and Banaji have argued (1996), "Researchers must be sensitive to the complexity with which automatic and controlled processes interact to produce a response" (p. 1159). Similarly, Bargh (1994) has noted that "mental processes at the level of complexity studied by social psychologists are not exclusively automatic or exclusively controlled, but are in fact combinations of the features of each" (p. 3).

Because the suggestion that stereotype activation may be preventable through controlled processes has only been advanced quite recently, it has received scant empirical attention. Recent findings do support the notion that some individuals are able to avoid the activation of stereotypes under conditions that meet at least several of the criteria of automaticity (Fazio et al., 1995; Lepore & Brown, 1997; Wittenbrink et al., 1997). Such findings are consistent with the possibility that those individuals who do not show evidence of stereotype activation are able to control it in some way, and they raise the intriguing and exciting possibility that stereotyping can be controlled through the prevention of stereotype activation. Below, we review two possible avenues to controlling stereotype activation.

Long-Term Consequences of Practiced Self-Regulation

One possibility is that with practice at the self-regulation of prejudiced responses, stereotype activation not only is interrupted, but is prevented entirely. Specifically, two consequences should follow from the sort of self-regulation described by Monteith (1993). First, behavioral inhibition (i.e., a slowing of ongoing responding) should theoretically become a natural and immediate reaction to stereotype activation. That is, repeated and frequent inhibition following stereotype activation in the presence of cues for punishment should serve to automate the process of inhibition following stereotype activation. Second, the generation of nonprejudiced responses should be executed with increasing ease and speed, due to the frequent activation and use of nonprejudiced constructs (e.g., egalitarian beliefs) as a basis for responding. Thus, the long-term implications of practiced self-regulation may be that stereotype activation is prevented and replaced with the activation of and reliance on nonprejudiced patterns of responding.

The recent findings of Blair and Banaji (1996), described in detail earlier, are consis-

tent with the possibility that individuals can prevent stereotype activation when they are motivated to control their stereotypic responses. Specifically, individuals who were given a counterstereotypic expectancy (i.e., expecting to see a male name after a female-related prime) were able to eliminate the typical stereotype-priming effect (e.g., facilitation when male names were paired with male-related primes). This was true even at very short SOAs (e.g., 250 ms). Although these findings do not unequivocally establish that stereotype activation was prevented (i.e., perhaps stereotypes were activated, and then some other control strategy intervened to prevent the typical stereotype priming), they are consistent with the possibility. That is, the stereotype-priming effect may have been eliminated because participants' motivation to avoid stereotypic responses served to prevent stereotypes from being activated.

Future research is needed to examine the precise mechanisms underlying Blair and Banaji's findings. Also, it will be important to examine the extent to which similar findings are observed when the source of motivation to control stereotypic responses is internal (i.e., stemming from a personal desire to control prejudice) rather than external (i.e., stemming from experimenter-supplied instructions). Finally, research will need to explore the extent to which practice at controlling prejudiced responses across time and situations helps individuals to avoid stereotype activation. Such future investigations may have the ultimate outcome of establishing that stereotype activation can be prevented among individuals who are motivated to practice the self-regulation of prejudiced responses.

The Influence of Chronically Accessible Egalitarian Goals

Gollwitzer and Moskowitz (1996) have recently argued that establishing the chronic goal to be egalitarian, through frequent and recent activation of the goal, should lead to the preconscious automatic activation of that goal (see Bargh, 1990) and to inhibition of stereotype activation. In a related study, Moskowitz, Wasel, Gollwitzer, and Schaal (1996) did not find evidence of stereotype activation among participants who had chronic egalitarian goals when they were presented with pictures of members of stereotyped groups. Among participants without chronic egalitarian goals, stereotypes were activated upon viewing the pictures. Additional work seems necessary to identify the precise mechanisms underlying how chronic egalitarian goals have the effect of preventing stereotype activation.

CONCLUDING COMMENTS

Our goal in this chapter has been to review the extant literature on the automaticity and control in stereotyping. This review has revealed that issues of both automaticity and control with regard to stereotyping are multifaceted and do not lend themselves to easy generalizations at present. For example, although stereotype activation may not be unconditionally automatic, it is very efficient and likely to occur. Thus, for those who are so inclined, there is something to be controlled. Our review of the literature suggests that control appears to be possible, at least for certain types of responses under some circumstances (e.g., Devine, 1989; Monteith, 1993; Gilbert & Hixon, 1991; Sherman et al., 1997; Sinclair & Kunda, 1997). Such findings provide reason for optimism that control over stereotyping is possible, and they suggest reasons to further develop analyses of stereotype control mechanisms. However, in a provocative chapter in this volume (Chapter 18), John Bargh reviews much of the same evidence but comes to a more pessimistic conclusion about the efficacy of control efforts. Specifically, Bargh suggests that the challenges associated with controlling automatic stereotype activation are so formidable that successful stereotype control is unlikely, even when people's intentions are to avoid using stereotypes. To date, however, the research literature has not yielded unequivocal answers concerning just how much control people do or can exert over prejudiced responses.

From the existing work, which has focused largely on documenting failures of control, one might conclude (as Bargh has) that gaining control over stereotypes is unlikely. Alternatively, one could opt (as we do) for taking a more considered and thorough look at the processes and mechanisms involved in

stereotype control. Indeed, one of our observations is that analysis and investigation of the mechanisms and processes involved in stereotype control are currently only in the earliest stages of development. As such, strong conclusions about the likely (in)efficacy of stereotype control efforts may be premature. Again, the purpose of our review has been to provide an overview of the various stereotype control strategies explored to date; our hope is that this review will help to stimulate additional research into these mechanisms, and perhaps will serve as a springboard for the development of alternative, potentially more effective stereotype control strategies.

In this context, we believe that the most exciting developments in the analysis of the controllability of stereotype activation and application are likely to be forthcoming as we move beyond strict dual-process conceptions to more elaborated analyses that afford the opportunity to think more complexly about both automaticity and control in stereotyping. It will be especially important to develop more complete analyses of the ways in which automatic and controlled processes interact to affect thought, judgment, and behavior. Although some theorists have acknowledged the interactive nature of automatic and controlled processes more than others, we see this as a particularly rich area for continued development. In moving the study of control forward, we strongly encourage the development of formal analyses of the sources of motivation to control stereotyping and prejudice and the link between these sources of motivation (e.g., internal vs. external; cf. Plant & Devine, 1998) and the nature of people's control efforts. That is, people are likely to be motivated to control stereotyping for a variety of reasons (e.g., because they personally believe it is wrong or because others will evaluate them negatively). To date, however, there exists no well-developed theoretical analysis of the alternative sources of motivation to control stereotype use, or of the ways such motivations may affect the consequences of successful or failed stereotype control efforts. It seems a safe generalization that without motivation, whatever its source, other issues of control are moot. To the extent that the source of motivation underlying control efforts determines the specific control strategies pursued, which may determine their short-term and long-term ultimate efficacy, failure to attend to these issues will produce incomplete analyses of stereotype control.

Finally, in addition to the various new research directions we have highlighted throughout the section on control, we also encourage researchers to examine the implications of automaticity and control of stereotyping in the context of the interpersonal aspects of intergroup perception and behavior. Although the most important implications of stereotype activation and control are played out in the interpersonal arena, where failures to control can be most destructive, relatively little effort has been devoted to exploring issues of automaticity and control of stereotyping in such settings. Interpersonal, intergroup settings are likely to create additional challenges in controlling stereotypes (Devine et al., 1996; Devine & Vasquez, 1998). In short, we need to move beyond studying issues of automaticity and control of stereotypes in isolated social perceivers. Social perceivers, after all, need to manage not only their cognitive processes, but also the social context in which stereotyping is typically played out. Complete analyses of stereotype control will be forthcoming only when we take seriously both the intrapersonal and interpersonal challenges involved in controlling stereotypes. We eagerly await such developments.

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NOTE

1. In this chapter, our concern is with control as an alternative to automatic processing that can attenuate or otherwise help one to limit the impact of social stereotypes on perception, judgment, and behavior. However, controlled processing does not invariably produce attenuation of stereotype effects. Some people may be particularly motivated to think in stereotypic ways and may use controlled processing to promote stereotype use. In addition, Chen and Chaiken (Chapter 4, this volume) suggest how controlled or systematic processes may be biased by previous heuristic processing in

ways that can produce increased stereotyping. The argument following from the heuristic–systematic model's bias hypothesis is as follows: Ambiguous information about a target can be interpreted in stereotypic ways through systematic processing if perceivers have previously responded to the target heuristically and in line with the stereotype. Group membership, for example, can serve as a heuristic cue (e.g., in a business context, a woman must be a secretary) that may influence subsequence systematic processing, particularly when a perceiver is not fully aware of the previous heuristic processing of the target. Thus, even though processing of the target may be systematic (or controlled), stereotypic judgments may follow.

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