

## Stereotypes and Prejudice: Their Automatic and Controlled Components

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Three studies tested basic assumptions derived from a theoretical model based on the dissociation of automatic and controlled processes involved in prejudice. Study 1 supported the model's assumption that high- and low-prejudice persons are equally knowledgeable of the cultural stereotype. The model suggests that the stereotype is automatically activated in the presence of a member (or some symbolic equivalent) of the stereotyped group and that low-prejudice responses require controlled inhibition of the automatically activated stereotype. Study 2, which examined the effects of automatic stereotype activation on the evaluation of ambiguous stereotype-relevant behaviors performed by a race-unspecified person, suggested that when subjects' ability to consciously monitor stereotype activation is precluded, both high- and low-prejudice subjects produce stereotype-congruent evaluations of ambiguous behaviors. Study 3 examined high- and low-prejudice subjects' responses in a consciously directed thought-listing task. Consistent with the model, only low-prejudice subjects inhibited the automatically activated stereotype-congruent thoughts and replaced them with thoughts reflecting equality and negations of the stereotype. The relation between stereotypes and prejudice and implications for prejudice reduction are discussed.

Social psychologists have long been interested in stereotypes and prejudice, concepts that are typically viewed as being very much interrelated. For example, those who subscribe to the tripartite model of attitudes hold that a stereotype is the cognitive component of prejudiced attitudes (Harding, Proshansky, Kutner, & Chein, 1969; Secord & Backman, 1974). Other theorists suggest that stereotypes are functional for the individual, allowing rationalization of his or her prejudice against a group (Allport, 1954; LaViolette & Silvert, 1951; Saenger, 1953; Simpson & Yinger, 1965).

In fact, many classic and contemporary theorists have suggested that prejudice is an inevitable consequence of ordinary categorization (stereotyping) processes (Allport, 1954; Billig, 1985; Ehrlich, 1973; Hamilton, 1981; Tajfel, 1981). The basic argument of the *inevitability of prejudice* perspective is that as long as stereotypes exist, prejudice will follow. This approach suggests that stereotypes are automatically (or heuristically) applied to members of the stereotyped group. In essence, knowl-

edge of a stereotype is equated with prejudice toward the group. This perspective has serious implications because, as Ehrlich (1973) argued, ethnic attitudes and stereotypes are part of the social heritage of a society and no one can escape learning the prevailing attitudes and stereotypes assigned to the major ethnic groups.

The inevitability of prejudice approach, however, overlooks an important distinction between knowledge of a cultural stereotype and acceptance or endorsement of the stereotype (Ashmore & Del Boca, 1981; Billig, 1985). That is, although one may have *knowledge of a stereotype*, his or her *personal beliefs* may or may not be congruent with the stereotype. Moreover, there is no good evidence that knowledge of a stereotype of a group implies prejudice toward that group. For example, in an in-depth interview study of prejudice in war veterans, Bettelheim and Janowitz (1964) found no significant relation between stereotypes reported about Blacks and Jews and the degree of prejudice the veterans displayed toward these groups (see also Brigham, 1972; Devine, 1988; Karlins, Coffman, & Walters, 1969).

Although they may have some overlapping features, it is argued that stereotypes and personal beliefs are conceptually distinct cognitive structures. Each structure represents part of one's entire knowledge base of a particular group (see Pratkanis, in press, for a supporting argument in the attitude domain). Beliefs are propositions that are endorsed and accepted as being true. Beliefs can differ from one's knowledge about an object or group or one's affective reaction toward the object or group (Pratkanis, in press). To the extent that stereotypes and personal beliefs represent different and only potentially overlap-

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ping subsets of information about ethnic or racial groups, they may have different implications for evaluation of and behavior toward members of the ethnic and racial groups. Previous theorists have not adequately captured this distinction and explored its implications for responding to stereotyped group members. The primary goal of the three studies reported here was to examine how stereotypes and personal beliefs are involved in responses toward stereotyped groups.

This work challenges the inevitability of prejudice framework and offers a model of responses to members of stereotyped groups that is derived largely from work in information processing that distinguishes between automatic (mostly involuntary) and controlled (mostly voluntary) processes (e.g., Posner & Snyder, 1975; Schneider & Shiffrin, 1977; Shiffrin & Schneider, 1977). Automatic processes involve the unintentional or spontaneous activation of some well-learned set of associations or responses that have been developed through repeated activation in memory. They do not require conscious effort and appear to be initiated by the presence of stimulus cues in the environment (Shiffrin & Dumais, 1981). A crucial component of automatic processes is their inescapability; they occur despite deliberate attempts to bypass or ignore them (Neely, 1977; Shiffrin & Dumais, 1981). In contrast, controlled processes are intentional and require the active attention of the individual. Controlled processes, although limited by capacity, are more flexible than automatic processes. Their intentionality and flexibility makes them particularly useful for decision making, problem solving, and the initiation of new behaviors.

Previous theoretical and empirical work on automatic and controlled processes suggests that they can operate independently of each other (Logan, 1980; Logan & Cowan, 1984; Neely, 1977; Posner & Snyder, 1975). For example, by using a semantic priming task, Neely demonstrated that when automatic processing would produce a response that conflicted with conscious expectancies (induced through experimenter instructions), subjects inhibited the automatic response and intentionally replaced it with one consistent with their conscious expectancy.

For example, Neely (1977) examined the influence of a single-word prime on the processing of a single-word target in a lexical decision task (i.e., whether the target was a word). The prime was either semantically related to the target (e.g., *body*-*arm*) or related to the target through experimenter instructions (e.g., subjects were told that *body* would be followed by a bird name such as *sparrow*). In this latter condition, subjects had a conscious expectancy for a bird name when they saw the *body* prime, but *body* should also have automatically primed its semantic category of body parts.

Neely (1977) found that with brief intervals between the prime and target (i.e., 250 ms), the prime facilitated decisions for semantically related targets regardless of experimenter instructions. Neely argued that this facilitation was a function of automatic processes. At longer delays (i.e., 2,000 ms), however, experimenter-induced expectancies produced both facilitation for expected targets and inhibition for unexpected targets regardless of their semantic relation to the prime. Before such inhibition of automatically activated responses can occur, there has to be enough *time* and *cognitive capacity* available for the

conscious expectancy to develop and inhibit the automatic processes.

### Automatic and Controlled Processes: Implications for Activation of Stereotypes and Personal Beliefs

The dissociation of automatic and controlled processes may provide some theoretical leverage for understanding the role of stereotypes and personal beliefs in responses to members of racial or ethnic groups. In the model proposed, interest centers on the conditions under which stereotypes and personal beliefs are activated and the likelihood that personal beliefs overlap with the cultural stereotype. There is strong evidence that stereotypes are well established in children's memories before children develop the cognitive ability and flexibility to question or critically evaluate the stereotype's validity or acceptability (Allport, 1954; P. Katz, 1976; Porter, 1971; Proshansky, 1966). As a result, personal beliefs (i.e., decisions about the appropriateness of stereotypic ascriptions) are necessarily newer cognitive structures (Higgins & King, 1981). An additional consequence of this developmental sequence is that stereotypes have a longer history of activation and are therefore likely to be more accessible than are personal beliefs. To the extent that an individual rejects the stereotype, he or she experiences a fundamental conflict between the already established stereotype and the more recently established personal beliefs.

The present model assumes that primarily because of common socialization experiences (Brigham, 1972; Ehrlich, 1973; P. Katz, 1976; Proshansky, 1966), high- and low-prejudice persons are equally knowledgeable of the cultural stereotype of Blacks. In addition, because the stereotype has been frequently activated in the past, it is a well-learned set of associations (Dovidio, Evans, & Tyler, 1986) that is *automatically* activated in the presence of a member (or symbolic equivalent) of the target group (Smith & Branscombe, 1985). The model holds that this unintentional activation of the stereotype is equally strong and equally inescapable for high- and low-prejudice persons.

A major assumption of the model is that high- and low-prejudice persons differ with respect to their personal beliefs about Blacks (Greeley & Sheatsley, 1971; Taylor, Sheatsley, & Greeley, 1978). Whereas high-prejudice persons are likely to have personal beliefs that overlap substantially with the cultural stereotype, low-prejudice persons have *decided* that the stereotype is an inappropriate basis for behavior or evaluation and experience a conflict between the automatically activated stereotype and their personal beliefs. The stereotype conflicts with their nonprejudiced, egalitarian values. The model assumes that the low-prejudice person must create a cognitive structure that represents his or her newer beliefs (e.g., belief in equality between the races, rejection of the stereotype, etc.). Because the stereotype has a longer history of activation (and thus greater frequency of activation) than the newly acquired personal beliefs, overt nonprejudiced responses require intentional inhibition of the automatically activated stereotype and activation of the newer personal belief structure. Such inhibition and initiation of new responses involves controlled processes.

This analysis suggests that whereas stereotypes are automatically activated, activation of personal beliefs require conscious

attention. In addition, nonprejudiced responses require both the inhibition of the automatically activated stereotype and the intentional activation of nonprejudiced beliefs (see also Higgins & King, 1981). This should not be surprising because an individual must overcome a lifetime of socialization experiences. The present model, which suggests that automatic and controlled processes involved in stereotypes and prejudice can be dissociated, posits that the inevitability of prejudice arguments follow from tasks that are likely to engage automatic processes on which those high and low in prejudice are presumed not to differ (i.e., activation of a negative stereotype in the absence of controlled stereotype-inhibiting processes). Interestingly, the model implies that if a stereotype is automatically activated in the presence of a member of the target group and those who reject the cultural stereotype do not (or perhaps cannot) monitor consciously this activation, information activated in the stereotype could influence subsequent information processing. A particular strength of the model, then, is that it suggests how knowledge of a stereotype can influence responses even for those who do not endorse the stereotype or have changed their beliefs about the stereotyped group.

Higgins and King (1981) presented a similar analysis with respect to the effect of gender stereotypes on memory. They demonstrated that when gender was not salient, subjects' descriptions of self and others reflected traditional views of gender-linked attributes. They suggested that under such conditions traditional gender stereotypes, with their longer history (i.e., greater frequency) of activation, are passively (automatically) activated and influence recall. When gender was made salient, however, subjects apparently inhibited the traditional stereotype and descriptions were more consistent with their more recently developed, modern views of gender-linked attributes.

In summary, the present model suggests that a target's group membership activates, or primes, the stereotype in the perceiver's memory (Smith, 1984; Wyer & Srull, 1981), making other traits or attributes associated with the stereotype highly accessible for future processing (Dovidio et al., 1986; Gaertner & McLaughlin, 1983; Smith & Branscombe, 1985). The implications of this automatic stereotype activation may be serious, particularly when the content of the stereotype is predominantly negative, as is the case with racial stereotypes. For example, Duncan (1976) found that Whites interpreted the same ambiguous shove as hostile or violent when the actor was Black and as playing around or dramatizing when the actor was White. Duncan assumed that the presence of the Black actor automatically primed the stereotype of Blacks and because the stereotype associates Blacks with violence, the violent behavior category was more accessible when viewing a Black compared with a White actor. Sager and Schofield (1980) replicated these findings with schoolchildren. Both Black and White children rated ambiguously aggressive behaviors (e.g., bumping in the hallway) of Black actors as being more mean or threatening than the same behaviors of White actors.

In only one of these studies (Gaertner & McLaughlin, 1983) was prejudice assessed and responses of high- and low-prejudice subjects compared. Thus, the extent to which high- and low-prejudice persons differ or are similar in their automatic and controlled responses to target group members remains unclear.

The present studies were designed to test implications of the dissociation of automatic and controlled processes in prejudice. Study 1 examined the validity of the assumption that high- and low-prejudice subjects are equally knowledgeable of the cultural stereotype. Study 2 explored the implications of automatic racial stereotype priming on the evaluation of ambiguous stereotype-relevant behaviors. This task permitted examination of the effects of automatic stereotype activation independently of controlled processes relevant to the stereotype. Finally, Study 3 examined the likelihood that high- and low-prejudice subjects will engage in controlled processes to inhibit prejudiced responses in a consciously directed thought-listing task.

### Study 1: Stereotype Content and Prejudice Level

Historically, little attention has focused on individual differences in prejudice when assessing the content of stereotypes. Although implicit in the stereotype assessment literature (Brigham, 1971), the assumption that high- and low-prejudice subjects are equally knowledgeable of the cultural stereotype has not been documented. The first step in validating the present model was to examine directly high- and low-prejudice subjects' knowledge of the content of the cultural stereotype of Blacks.

In contrast to the typical adjective checklist assessment of stereotype content (Gilbert, 1951; Karlins et al., 1969; D. Katz & Braly, 1933), a free response task was used in the present study. This task provides a more sensitive test of subjects' knowledge of the stereotype because no cues (e.g., a list of possible characteristics) regarding possible content are provided. Thus, high- and low-prejudice subjects were asked to list the content of the cultural stereotype of Blacks regardless of their personal beliefs.

### Method

*Subjects and procedure.* Forty White introductory psychology students participated in groups of 4–6 for course credit. To ensure anonymity, subjects were isolated from each other and the experimenter left the room after giving general instructions. Written instructions told subjects that the questionnaire was designed to help researchers better understand social stereotypes and that interest centered on the cultural stereotype of Blacks. The experimenter informed them that she was not interested in their personal beliefs but in their knowledge of the content of the cultural stereotype. Subjects were provided with a page with several blank lines on which to list the components of the stereotype and were asked not to write any identifying marks on the booklet.

After listing the components of the stereotype, subjects completed the seven-item Modern Racism Scale (McConahay, Hardee, & Batts, 1981). The Modern Racism Scale is designed to measure subjects' anti-Black attitudes in a nonreactive fashion. The Modern Racism Scale has proven to be useful in predicting a variety of behaviors including voting patterns and reactions to busing (Kinder & Sears, 1981; Sears & Kinder, 1971; Sears & McConahay, 1973). Subjects indicated their agreement with each of the items on the 5-point rating scale that ranged from  $-2$  (*disagree strongly*) to  $+2$  (*agree strongly*). Subjects put the completed booklet into an unmarked envelope and dropped it into a large box containing several envelopes. Finally, subjects were debriefed and thanked for their participation. The Modern Racism Scale ranges from  $-14$  (*low prejudice*) to  $+14$  (*high prejudice*). The scale had good reliability (Cronbach's  $\alpha = .83$ ). Subjects were assigned to a high-prejudice

Table 1  
*Proportion of Thoughts Listed in Each of the Coding Categories as a Function of Prejudice Level*

Category	High prejudice	Low prejudice
Poor	.80	.75
Aggressive/tough	.60	.60
Criminal	.65	.80
Low intelligence	.50	.65
Uneducated	.50	.50
Lazy	.55	.75
Sexually perverse	.50	.70
Athletic	.75	.50
Rhythmic	.50	.40
Ostentatious	.50	.40
Inferior	.20	.30
Food preferences	.25	.35
Family characteristic	.25	.30
Dirty/smelly	.20	.30
Descriptive terms	.55	.50

Note. None of these differences is significant.

( $N = 21$ ) or a low-prejudice ( $N = 19$ ) group on the basis of a median split of scores on the scale.

### Results and Discussion

The coding scheme, based primarily on the previous stereotype assessment literature, included traits such as lazy, poor, athletic, rhythmic, ostentatious, and so on. In addition, a category was included for themes related to hostility, violence, or aggressiveness. Although these terms have not been included in the traditional assessment literature, the assumption that Blacks are hostile or aggressive has guided much of the research on the effect of racial stereotypes on perception and behavior (Donnerstein & Donnerstein, 1972; Donnerstein, Donnerstein, Simon, & Ditrachs, 1972; Duncan, 1976; Sager & Schofield, 1980). Trait listings, however, do not completely capture the components of cultural stereotypes. For example, subjects also listed descriptive features (e.g., afro, brown eyes) and family characteristics (e.g., many children, single-parent homes). Coding categories for these components and a miscellaneous category for components listed that did not clearly fit into the existing categories were included. In all, there were 16 coding categories (see Table 1).

Two judges, blind to subjects' prejudice level, were provided with the coding instructions and the 40 protocols in different random orders. Each characteristic listed received one classification by each judge; the judges agreed on 88% of their classifications.

Table 1 shows coding categories and the proportion of high- and low-prejudice subjects who used the coding category in describing the stereotype. There are several noteworthy aspects of these data. First, the most striking aspect of these data is that the most common theme in subjects' protocols was that Blacks are aggressive, hostile, or criminal-like (see Table 1). All subjects listed either the aggressive or criminal categories and many listed both categories. This finding is important because, as was

suggested earlier, much of the intergroup perception literature has been predicated on the assumption that Blacks are hostile and aggressive. Second, consistent with the stereotype assessment literature, the protocols were dominated by trait listings and were predominately negative. Third, there appeared to be few differences in the content reported by high- and low-prejudice subjects.

The prediction of no difference between the high- and low-prejudice subjects' knowledge of the cultural stereotype was tested in two different ways. First, none of the differences in Table 1 was statistically reliable. Second, two separate judges were given subjects' protocols and were instructed to read the content listed and to separate the protocols into high- and low-prejudice groups. The judges could not reliably predict the subjects' prejudice level from the content of their protocols. These data validate Ehrlich's (1973) assumption as well as the first assumption of the present model: High- and low-prejudice persons are indeed equally knowledgeable of the cultural stereotype.

### Study 2: Automatic Priming, Prejudice Level, and Social Judgment

Study 1 showed that prejudice has little effect on direct reports of stereotype content. However, the free response task directly involved controlled processes. Subjects were explicitly instructed to be bias-free when making these reports. These data, then, are not necessarily informative regarding the implicit cognitive structures that are accessed during automatic processing. What is needed is a task in which the controlled processes do not provide an alternative explanation for the automatic processes. Thus, the goal of the Study 2 was to examine automatic stereotype priming effects for both high- and low-prejudice subjects.

Several studies have demonstrated that increasing the temporary accessibility of trait categories available in memory influences subsequent evaluations of a target person who performs ambiguous trait-relevant behaviors. These findings have been produced with conscious processing of the primes (Carver, Gannellin, Froming, & Chambers, 1983; Srull & Wyer, 1979, 1980) and with priming that is reported to be nonconscious (Bargh, Bond, Lombardi, & Tota, 1986; Bargh & Pietromonaco, 1982). That is, Bargh and Pietromonaco (1982) demonstrated that even when subjects were unaware of the content of the primes, priming increased the likelihood that the primed category was used to interpret subsequently presented ambiguous category-related information.

Nonconscious priming was of particular interest in this research because it is this type of processing that would allow the clearest dissociation of automatic and controlled processes involved in responses to members of a stereotyped group. Thus, the priming technique developed by Bargh and Pietromonaco (1982) was used in this study to automatically or passively prime the racial stereotype. Because the priming task activates the stereotype without conscious identification of the primes, the effects of stereotype activation can be studied independently of controlled stereotype-related processes. Specifically, interest centered on the effect of automatic racial stereotype activation

on the interpretation of ambiguous stereotype-related behaviors performed by a race-unspecified target person.

In this study, evaluation of ambiguously hostile behaviors was examined because the assumption that Blacks are hostile is part of the racial stereotype (Brigham, 1971; Study 1) and because it has guided research in intergroup perception (Duncan, 1976; Sager & Schofield, 1980; Stephan, 1985). Because interest centered on the effects of activation of the stereotype on the ratings of a target person's hostility, no words directly related to hostility were used in the priming task. This study explicitly examined Duncan's (1976) hypothesis that the activation of the racial stereotype, which presumably activates a link between Blacks and hostility, explains why ambiguously aggressive behaviors were judged as being more aggressive when performed by a Black than a White actor.

According to the assumptions of the present model, priming will automatically activate the cultural stereotype for both those high and low in prejudice. Because hostility is part of the racial stereotype, increased priming should lead to more extreme ratings on the hostility-related scales for both high- and low-prejudice subjects.

Thus, following Bargh and Pietromonaco (1982), during an initial perceptual vigilance task, subjects were asked to identify the location of stimuli, which were actually words, presented rapidly in subjects' parafoveal visual field. These strategies were used to prevent subjects from consciously identifying the content of the primes. During the vigilance task either 20% or 80% of the words presented were related to the racial stereotype. Then, during an ostensibly unrelated impression-formation task, subjects read a paragraph describing a race-unspecified target person's ambiguously hostile behaviors and rated the target person on several trait scales. Half of the trait scales were related to hostility and thus allowed a test of the effect of stereotype activation on ratings of the target person's hostility. The remaining trait scales were not related to hostility and provided the opportunity to examine the possibility that stereotype activation led to a global negative evaluation that generalized beyond hostility ratings.

The data from this study could have important theoretical implications regarding the role of controlled processes and automatic processes involved in prejudice. However, the criteria required to establish automatic activation have been debated (see Holender, 1986, and Marcel, 1983b, for reviews). Greenwald, Klinger, and Liu (in press) recently suggested that automatic activation can be achieved through either *detectionless processing* or *attentionless processing*, both of which have been shown to produce reliable priming effects. Detectionless processing involves presenting stimuli below subjects' threshold level for reliable detection (Bolota, 1983; Fowler, Wolford, Slade, & Tassinari, 1981; Greenwald et al., in press; Marcel, 1983a). Attentionless processing involves processing stimuli that, although detectable, cannot be recalled or recognized (Klatzky, 1984).

In this study attentionless processing was accomplished by presenting the primes parafoveally (Bargh & Pietromonaco, 1982) followed immediately with a pattern mask. With phenomenal awareness of the semantic content of the primes as the criterion for conscious processing (Marcel, 1983a, 1983b), any

effects of priming in this study without immediate conscious identification of the primes or recognition for them will be taken as evidence of attentionless automatic processing effects.

### Method

*Subjects and selection criteria.* Data were collected over two academic quarters. Introductory psychology students were pretested on the seven-item Modern Racism Scale embedded in a number of political, gender, and racial items. This was done to minimize the likelihood that subjects would identify the scale as a measure of prejudice. The experimenter told subjects that completion of the questionnaire was voluntary and that responses would be kept confidential. Subjects were also provided with a form concerning participation in subsequent experiments and provided their names and phone numbers if they were willing to be contacted for a second study for which they could earn extra credit.

Over the two quarters a total of 483 students filled out the Modern Racism Scale. Participants from the upper and lower third of the distribution of scores were identified as potential subjects ( $N = 323$ ). When contacted by phone, potential subjects were asked about their vision, and only subjects with perfect vision or corrected perfect vision were considered eligible. High-prejudice subjects' scores on the Modern Racism Scale fell within the upper third of scores (between +2 and +14), and low-prejudice subjects' scores fell within the lower third of scores (between -9 and -14). The scale had good reliability (Cronbach's alpha = .81). From this sample of 323 subjects, 129 who agreed and had good vision participated in the experiment. After replacing 3 Black subjects, 1 subject who reported having dyslexia following the vigilance task, and 3 subjects who failed to follow instructions, the sample consisted of 78 White subjects in the judgment condition, 32 White subjects in the recognition condition, and 12 White subjects in the guess condition.

The experimenter remained blind to subjects' prejudice level, priming condition, and stimulus replication condition. Subjects were telephoned by one experimenter, who prepared the materials (with no treatment information) for the second experimenter, who conducted the experiment.

The method and procedure for this study were modeled after Bargh and Pietromonaco (1982). The only difference between their procedure and the one in this study was that in this study, stimuli were presented tachistoscopically rather than on a computer monitor. The experimental room contained a Scientific Prototype two-channel tachistoscope connected to an experimenter-controlled panel for presenting stimuli. Subjects placed their heads against the eyepiece such that the distance from subjects' eyes to the central fixation point was constant. The presentation of a stimulus activated a Hunter Model 120 Klockounter on which the interval between stimulus onset and the response was recorded to the nearest millisecond. Subjects indicated their responses by pushing one of two buttons (labeled *left* or *right*) on a response box. The experimenter recorded each response and its latency.

The stimuli were black and presented on a white background. Each stimulus was presented for 80 ms and was immediately followed by a mask (a jumbled series of letters). In addition, following Bargh and Pietromonaco (1982), the interstimulus interval was 2-7 s. The stimuli (words) were centered in each quadrant, with the center of each word being approximately 2.3 in. (0.06 m) from the central fixation point. The eye-to-dot distance was 31 in. (0.79 m) for the Scientific Prototype tachistoscope. As a result, to keep the stimulus within the parafoveal visual field (from 2° to 6° of visual angle), words could not be presented closer than 1.08 in. (0.03 m) or farther than 3.25 in. (0.08 m) from the fixation point. Twenty-five of the 100 trials within each replication were randomly assigned to each quadrant.

*Stimulus materials.* Words that are labels for the social category

*Blacks* (e.g., Blacks, Negroes, niggers) or are stereotypic associates (e.g., poor, lazy, athletic) were the priming stimuli. Twenty-four primes were used to generate two stimulus replications. Efforts were made to produce roughly equivalent content in the two replications. Replication 1 primes included the following: nigger, poor, afro, jazz, slavery, musical, Harlem, busing, minority, oppressed, athletic, and prejudice. Replication 2 primes included the following: Negroes, lazy, Blacks, blues, rhythm, Africa, stereotype, ghetto, welfare, basketball, unemployed, and plantation. Twelve neutral words (unrelated to the stereotype) were included in each replication. All neutral words were high-frequency words (Carroll, Davies, & Richman, 1971) and were matched in length to the stereotype-related words. Neutral words for Replication 1 included the following: number, considered, what, that, however, remember, example, called, said, animal, sentences, and important. Replication 2 neutral words included the following: water, then, would, about, things, completely, people, difference, television, experience, something, and thought. Ten additional neutral words were selected and used during practice trials.

Within each stimulus replication, the stereotype-related and neutral words were used to generate two separate 100-word lists. One list contained 80 stereotype-related words (the rest were neutral words) and the other contained 20 stereotype-related words (the rest were neutral words). The lists were organized into blocks of 20 words. In the 80% stereotype-priming condition, each block contained 16 stereotype-related words and 4 neutral words. Within each block, to make 16 stereotype-related words, 4 of the 12 stereotype-related words were randomly selected and presented twice.

For both stimulus replications, the words within each block were randomly ordered with the restriction that the first stereotype-related word was a label for the group (e.g., Negro or nigger). The positions of the minority items (stereotype-related words in the 20% priming list and neutral words in the 80% priming list) were the same for the 20% and 80% priming lists. Each of the 12 stereotype-related and the 12 control words appeared approximately the same number of times as the other stereotype-related and neutral words, respectively.

*Judgment condition.* The experimenter told subjects that they would participate in two separate tasks. First, they were seated at the tachistoscope and then provided with a description of the vigilance task. The experimenter told subjects that the vigilance task involved identifying the location of stimuli presented for brief intervals. Subjects also learned that stimuli could appear in one of the four quadrants around the dot in the center of the screen. They were to identify as quickly and as accurately as possible whether the stimulus was presented to the left or the right of the central dot. Subjects indicated their responses by pressing the button labeled *left* or *right* on the response panel. The experimenter informed subjects that the timing and the location of the stimuli were unpredictable. Because both speed and accuracy were emphasized, subjects were encouraged to concentrate on the dot, as this strategy would facilitate detection performance. All subjects first completed 10 practice trials and then 100 experimental trials. Overall, the vigilance task took 11–13 min to complete.

Following the vigilance task, the second task was introduced. Subjects were told that the experimenter was interested in how people form impressions of others. They were asked to read a paragraph describing the events in the day of the person about whom they were to form an impression. This paragraph is the now familiar “Donald” paragraph developed by Srull and Wyer (1979, 1980; see also Bargh & Pietromonaco, 1982, and Carver et al., 1983). This 12-sentence paragraph portrays Donald engaging in a series of empirically established ambiguously hostile behaviors. For example, Donald demands his money back from a store clerk immediately after a purchase and refuses to pay his rent until his apartment is repainted.

After reading the paragraph, subjects were asked to make a series of

evaluative judgments about Donald. Subjects rated Donald on each of 12 randomly ordered trait scales that ranged from 0 (*not at all*) to 10 (*extremely*). Six of the scales were descriptively related to hostility; 3 of these scales were evaluatively negative (hostile, dislikeable, and unfriendly) and 3 were evaluatively positive (thoughtful, kind, and considerate). The remaining 6 scales were not related to hostility; 3 of these scales were evaluatively negative (boring, narrow-minded, and conceited) and 3 were evaluatively positive (intelligent, dependable, and interesting).

After completing the rating scales, the experimenter questioned subjects about whether they believed that the vigilance task and the impression-formation task were related. No subject reported thinking the tasks were related or indicated any knowledge of why the vigilance task would have affected impression ratings. The experimenter then explained the nature of priming effects to the subjects. During this debriefing, however, the fact that subjects had been selected for participation on the basis of their Modern Racism Scale scores was not revealed. Subjects were then thanked for their participation.

*Recognition test condition.* Up through completion of the vigilance task, recognition test subjects were treated exactly the same as the judgment subjects. Subjects in this condition were exposed to either the 80% or 20% priming lists of Replication 1 or Replication 2. Following the vigilance task, however, the experimenter explained that the stimuli were actually words and that subjects would be asked to try to recognize the words previously presented. The recognition test was distributed and subjects were instructed to check off the items that they believed had been presented. The experimenter told them that only half of the words on the list had been presented during the vigilance task.

The 48 items of this test consisted of the 24 words in Replication 1 (12 stereotype-related and 12 neutral words) and the 24 words in Replication 2 (12 stereotype-related and 12 neutral words). Words in Replication 2 served as distractors (words not presented) for Replication 1 targets (words actually presented), and Replication 1 words were used as distractors for Replication 2 targets during the recognition test. The recognition test items were randomly ordered.

*Guess condition.* The experimenter told subjects in this condition that the words would be presented quickly in one of four locations around the central fixation point. Their task was to guess each word immediately following its presentation. The experimenter instructed subjects to maintain their gaze on the fixation point, as this was the best strategy for guessing words given their unpredictable location and timing. Subjects saw either the 80% list of Replication 1 or the 80% list of Replication 2. Subjects were to make a guess for each word presented, even making blind guesses if necessary, and were prompted to guess if they failed to do so spontaneously. This requirement was introduced to lower subjects' guessing criterion so as to provide a fair test of their immediate awareness of the stimuli (Bargh & Pietromonaco, 1982).

## Results

Several checks on subjects' awareness of the content of primes were included in this study. Attentionless processing should allow detection but not immediate or delayed recognition of the stimuli.

*Guess condition: A check on immediate awareness.* Six high- and 6 low-prejudice subjects were run in this condition. Half of each group were presented with the 80% list of Replication 1 and half with the 80% list of Replication 2. If word content were truly not available to consciousness under the viewing conditions of this study, then subjects should not have been able to guess the content of the stereotype-related or neutral words. Subjects reported that this was a difficult task and that they had

no idea of the content of the stimuli. Overall, they made few accurate guesses.

Of the 1,200 guesses, subjects guessed 20 words accurately, a hit rate of 1.67%. Overall, subjects guessed 1.4% of the stereotype-related words and 3.33% of the neutral words. Replicating Bargh and Pietromonaco (1982), the neutral word hit rate was appreciably higher than that for stereotype-related words. The neutral words were high-frequency words and thus would presumably be more easily detectable under the viewing conditions in this study.

Incorrect guesses were examined for their relatedness to the racial stereotype. Only three of the incorrect guesses could be interpreted as being related to the stereotype. Twice *Black* appeared as a guess, once from a high-prejudice subject and once from a low-prejudice subject. These data suggest that neither high- nor low-prejudice subjects were able to identify the content of the priming words at the point of encoding, thus satisfying one criterion for attentionless processing.

*Recognition condition: A check on memory for primes.* Although subjects could not guess the content of the words at the point of stimulus presentation, it is possible that a recognition test would provide a more sensitive test of subjects' awareness of the content primes. On the basis of their performance on the recognition test, subjects were assigned a hit (correct recognition of presented items) and a false alarm (incorrect recognition of new items) score for both stereotype-related and neutral words.

The hits and false alarms were used to generate  $d'$  scores for both stereotype-related and neutral words, which corresponded to subjects' ability to correctly identify previously presented information. Green and Swets (1966) have tabled  $d'$  scores for all possible combinations of hits and false alarms. The primary analysis concerned whether subjects performed the recognition task better than would be expected by chance. Over all subjects, neither  $d'$  for stereotype-related words ( $M = .01$ ) nor for neutral words ( $M = .07$ ) differed significantly from zero ( $ps > .42$ ). These same comparisons were also done separately for high- and low-prejudice subjects. These analyses, like the overall analysis, suggest that subjects could not reliably recognize the primes. High-prejudice subjects' mean  $d'$  scores for stereotype-related and neutral words were .02 and .12, respectively ( $ps > .40$ ). Low-prejudice subjects' mean  $d'$  scores for stereotype-related and neutral words were .01 and .02, respectively ( $ps > .84$ ).

In addition, the  $d'$  scores were submitted to a four-way mixed-model analysis of variance (ANOVA)—Prejudice Level  $\times$  Priming  $\times$  Replication  $\times$  Word Type—with word type (stereotype-related vs. neutral) as a repeated measure.<sup>1</sup> Interest centered on whether (a) high- and low-prejudice subjects were differentially sensitive to stereotype-related and neutral words on the recognition test and (b) priming affected recognition performance. The analysis revealed that prejudice level did not affect subjects' overall performance,  $F(1, 24) = 0.07, p = .78$ , and that it did not interact with word type,  $F(1, 24) = 0.04, p = .84$ .

The second crucial test concerned whether increasing the number of primes interacted with recognition of the word type or subjects' prejudice level to affect performance on the recognition test. None of these tests was significant. Priming did not

interact with word type,  $F(1, 24) = 0.47, p = .50$ , or affect the Prejudice  $\times$  Word Type interaction,  $F(1, 24) = 0.32, p < .56$ . The analysis revealed no other significant main effects or interactions. Subjects were not able to reliably recognize either stereotype-related or neutral words, suggesting that subjects did not have conscious access to the content of the primes, thus establishing the second criterion for attentionless processing.

*Automatic stereotype activation and hostility ratings.* The major issue concerned the effect of automatic stereotype activation on the interpretation of ambiguous stereotype-congruent (i.e., hostile) behaviors performed by a race-unspecified target person. Following Srull and Wyer (1979) and Bargh and Pietromonaco (1982), two subscores were computed for each subject. A hostility-related subscore was computed by taking the mean of the six traits denotatively related to hostility (hostile, disagreeable, unfriendly, kind, thoughtful, and considerate). The positively valenced scales (thoughtful, considerate, and kind) were reverse scored so that higher mean ratings indicated higher levels of hostility. Similarly, an overall hostility-unrelated subscore was computed by taking the mean of the six hostility-unrelated scales. Again, the positive scales were reverse scored.

The mean ratings were submitted to a mixed-model ANOVA, with prejudice level (high vs. low), priming (20% vs. 80%), and replication (1 vs. 2) as between-subjects variables and scale (hostility related vs. hostility unrelated) as a within-subjects variable. The analysis revealed that the Priming  $\times$  Scale interaction was significant,  $F(1, 70) = 5.04, p < .03$ . Ratings on the hostility-related scales were more extreme in the 80% ( $M = 7.52$ ) than in the 20% ( $M = 6.87$ ) priming condition.<sup>2</sup> The hostility-unrelated scales, however, were unaffected by priming ( $M_s = 5.89$  and  $6.00$  for the 20% and 80% priming conditions, respectively). Moreover, the three-way Prejudice Level  $\times$  Priming  $\times$  Scale interaction was not significant,  $F(1, 70) = 1.19, p = .27$ . These results were consistent with the present model and suggest that the effects of automatic stereotype priming were equally strong for high- and low-prejudice subjects. Activating the stereotype did not, however, produce a global negative evaluation of the stimulus person, as only trait scales related to the behaviors in the ambiguous passage were affected by priming.

These analyses suggest that the automatic activation of the racial stereotype affects the encoding and interpretation of ambiguously hostile behaviors for both high- and low-prejudice subjects. To examine this more closely, separate tests on the hostility-related and hostility-unrelated scales were conducted. If high- and low-prejudice subjects are equally affected by the

<sup>1</sup> The overall hit and false alarm rates for stereotype-related and neutral words were also examined as a function of prejudice level, priming, and replication. These data were submitted to a five-way mixed-model analysis of variance. Prejudice level, priming, and replication were between-subjects variables; word type (stereotype-related vs. neutral) and response type (hits vs. false alarms) were within-subject variables. This analysis, like the  $d'$  analysis, revealed no significant main effects or interactions.

<sup>2</sup> The primary analysis was repeated for high- and low-prejudice subjects separately. The two-way Priming  $\times$  Scale Related interaction was obtained for both high- and low-prejudice subjects (both  $ps < .05$ ), thus supporting the primary analysis.

priming manipulation, then prejudice level should not interact with priming in either analysis. The analysis on hostility-related scales revealed only a significant priming main effect,  $F(1, 70) = 7.59, p < .008$ . The Prejudice Level  $\times$  Priming interaction was nonsignificant,  $F(1, 70) = 1.19, p = .28$ . None of the other main effects or interactions was significant. In the analysis of the hostility-unrelated scales, neither the priming main effect,  $F(1, 70) = 0.23, p = .63$ , nor the Prejudice Level  $\times$  Priming interaction,  $F(1, 70) = 0.02, p = .88$ , reached significance.

Subjects' prejudice level did enter into several higher order interactions. The Prejudice Level  $\times$  Priming  $\times$  Replication interaction,  $F(1, 70) = 4.69, p < .03$ , indicated that the priming effect was slightly reversed for low-prejudice subjects exposed to Replication 1. A Prejudice Level  $\times$  Scale Relatedness  $\times$  Replication interaction,  $F(1, 70) = 4.42, p < .04$ , suggested that the difference between scores on hostility-related and hostility-unrelated scales was greater for low-prejudice subjects in Replication 1 and high-prejudice subjects in Replication 2.

### Discussion

Study 2 examined the effects of prejudice and automatic stereotype priming on subjects' evaluations of ambiguous stereotype-related behaviors performed by a race-unspecified target person under conditions that precluded the possibility that controlled processes could explain the priming effect. The judgment data of this study suggest that when subjects' ability to consciously monitor stereotype activation is precluded, both high- and low-prejudice subjects produce stereotype-congruent or prejudice-like responses (i.e., stereotype-congruent evaluations of ambiguous behaviors).

These findings extend those of Srull and Wyer (1979, 1980), Bargh and Pietromonaco (1982), Bargh et al. (1986), and Carver et al. (1983) in demonstrating that in addition to trait categories, stereotypes can be primed and can affect the interpretation of subsequently encoded social information. Moreover, it appears that stereotypes can be primed automatically by using procedures that produce attentionless processing of primes (Bargh & Pietromonaco, 1982). The effects of stereotype priming on subjects' evaluation of the target person's hostility are especially interesting because no hostility-related traits were used as primes. The data are consistent with Duncan's (1976) hypothesis that priming the racial stereotype activates a link between Blacks and hostility. Unlike Duncan's research, however, stereotype activation was achieved through attentionless priming with stereotype-related words and not by the race of the target person.

In summary, the data from Studies 1 and 2 suggest that both those high and low in prejudice have cognitive structures (i.e., stereotypes) that can support prejudiced responses. These data, however, should not be interpreted as suggesting that all people are prejudiced. It could be argued that neither task allowed for the possibility of nonprejudiced responses. Study 1 encouraged subjects not to inhibit prejudiced responses. Study 2 suggested that when the racial category is activated and subjects' ability to consciously monitor this activation is bypassed, their responses reflect the activation of cognitive structures with a longer history (i.e., greater frequency) of activation. As previously indi-

cated, it appears that these structures are the culturally defined stereotypes (Higgins & King, 1981), which are part of people's social heritage, rather than necessarily part of subjects' personal beliefs.

This analysis suggests that the effect of automatic stereotype activation may be an inappropriate criterion for prejudice because to use it as such equates knowledge of a stereotype with prejudice. People have knowledge of a lot of information they may not endorse. Feminists, for example, may be knowledgeable of the stereotype of women. Blacks and Jews may have knowledge of the Black or Jewish stereotype.<sup>3</sup> In none of these cases does knowledge of the stereotype imply acceptance of it (see also Bettelheim & Janowitz, 1964). In fact, members of these groups are likely to be motivated to reject the stereotype corresponding to their own group. In each of these cases, however, the stereotypes can likely be intentionally or automatically accessed from memory.

The present data suggest that when automatically accessed the stereotype may have effects that are inaccessible to the subject (Nisbett & Wilson, 1977). Thus, even for subjects who honestly report having no negative prejudices against Blacks, activation of stereotypes can have automatic effects that if not consciously monitored produce effects that resemble prejudiced responses. Study 3 examined the responses of high- and low-prejudice subjects to a task designed to focus attention on and thus activate subjects' personal beliefs about Blacks (in addition to the automatically activated stereotype).

### Study 3: Controlled Processes and Prejudice Level

The present model suggests that one feature that differentiates low- from high-prejudice persons is the effort that they will put into stereotype-inhibition processes. When their nonprejudiced identity is threatened, low-prejudice persons are motivated to reaffirm their nonprejudiced self-concepts (Dutton, 1976; Dutton & Lake, 1973). Thus, when the conflict between their nonprejudiced personal beliefs and the stereotype of Blacks is made salient, low-prejudiced persons are likely to resolve the conflict by denouncing the stereotype and expressing their nonprejudiced beliefs. To express stereotype-congruent ideas would be inconsistent with and perhaps threaten their nonprejudiced identities.

Study 3 tested this hypothesis by asking high- and low-prejudice subjects to list their thoughts about the racial group *Blacks* under anonymous conditions. This type of task is likely to make the stereotype-personal belief conflict salient for low-prejudice subjects. The model suggests that under these conditions, high-

<sup>3</sup> Data from 4 Black subjects who participated in Study 1, but who were not included in the analyses, suggest that Blacks are at least knowledgeable of the cultural stereotype. That is, there was considerable overlap between the content reported by the Black and White subjects. Two independent raters could not reliably predict the race of subjects from the protocols. In addition, Sager and Schofield (1980) found that Black and White children interpreted the same ambiguously hostile behaviors as being more aggressive or hostile when performed by a Black than a White actor. Sager and Schofield argued that subjects were making stereotype-congruent judgments of the Black actor.

and low-prejudice subjects will write different thoughts about Blacks. High-prejudice subjects, because their beliefs overlap with the stereotype, are expected to list stereotype-congruent thoughts. Low-prejudice subjects, it is argued, will take this opportunity to demonstrate that they do not endorse the cultural stereotype; they are likely to inhibit stereotype-congruent thoughts and intentionally replace them with thoughts consistent with their nonprejudiced personal beliefs. According to the model, resolution of the conflict between personal beliefs and the cultural stereotype in the form of nonprejudiced responses requires controlled inhibition (Logan & Cowan, 1984; Neely, 1977) of the automatically activated stereotype.

### Method

*Subjects.* Subjects were 67 White introductory psychology students who participated for course credit.<sup>4</sup> Subjects were run in groups of 3–6 and were seated at partitioned tables so that subjects were isolated from each other. These procedures were used to enhance anonymity so that subjects would not feel inhibited and would write whatever came to mind.

An additional precaution was taken to ensure anonymity. Before subjects were given instructions regarding the thought-listing task, their experimental participation cards were collected, signed, and left in a pile in the front of the room for subjects to pick up after the study. The experimenter asked subjects not to put any identifying information on their booklets. These procedures were followed so that it would be clear that subjects' names could not be associated with their booklets and that they would receive credit regardless of whether they completed the booklet. No subject refused to complete the measures.

*Procedure.* After subjects' cards were signed the experimenter asked them to turn over and read the general instructions on the first page of the booklet. Subjects' first task was to list as many alternate labels as they were aware of for the social group *Black Americans*. They were told that the experimenter was interested in how people think about and talk informally about social groups. As such, the experimenter told them that slang or other unconventional group labels were acceptable. Subjects were allowed 1 min to complete this task. The purpose of this task was to encourage activation of subjects' cognitive representation of Blacks. If, for example, high- and low-prejudice persons refer to the social group with different labels (i.e., pejorative vs. nonpejorative) and the labels have different associates, this could provide a basis for explaining any potential differences in content between high- and low-prejudice subjects.

Following the label-generation task, subjects read the thought-listing instructions that asked them to list all of their thoughts in response to the social group *Black Americans* and to the alternate labels they generated. The experimenter told them that any and all of their thoughts (e.g., beliefs, feelings, expectations), flattering or unflattering, were acceptable. Subjects were encouraged to be honest and forthright. The experimenter provided them with two pages of 10 thought-listing boxes in which to record their thoughts and asked them to put only one thought in each box. They were allowed 10 min to complete the task. Finally, subjects completed the seven-item Modern Racism Scale and read through a debriefing document that described the goals of the research and thanked them for their participation.

### Results

*Coding scheme.* On the basis of a pilot study<sup>5</sup> a scheme for coding the types of thoughts generated was developed. Two judges, blind to subjects' prejudice level, were provided with the

coding scheme instructions. A statement or set of statements listed in a box was considered one thought and was assigned one classification by each judge. Each judge rated the 67 protocols in different random orders. The judges agreed on 92% of their classifications. A third judge resolved discrepancies in scoring.

The major interest in this study was in whether the content of thoughts generated would differ as a function of prejudice level.<sup>6</sup> Before examining those data, however, the alternate labels subjects generated for Black Americans were examined. If high-prejudice subjects generate more negative labels (e.g., nigger, jigaboo, etc.) than low-prejudice subjects and pejorative labels are more strongly associated with stereotype-congruent information, this could explain possible differences between high- and low-prejudice subjects. Subjects were divided into high-prejudice ( $N = 34$ ) and low-prejudice ( $N = 33$ ) groups on the basis of a median split of scores on the Modern Racism Scale.

<sup>4</sup> Four Black students signed up to participate. These students did not fill out the thought-listing or Modern Racism measure but were given credit for showing up to participate. The nature of the study was described to them, and they were told why interest centered on the responses of White subjects.

<sup>5</sup> The coding scheme was developed and pretested in a pilot study, the goal of which was to demonstrate that subjects' cognitive representations of social groups are richer and more complex than simple trait-based structures. The coding scheme was developed on the basis of considerations of the stereotype assessment, prejudice, attitude, and cognitive organization literature. The stereotype literature, for example, led to an examination of the types of traits (i.e., positive or negative) listed in response to the category label. The prejudice and attitude measurement literature, however, led to examination of whether positive (e.g., statements of equality, recognition of Blacks' plight historically, etc.) or negative (resentment of affirmative action, avoid interactions with Blacks) belief thoughts would be elicited by the label.

The cognitive organization literature (Collins & Quillian, 1969; Rips, Shoben, & Smith, 1973) suggested that both criterial (e.g., physical descriptors) as well as noncriterial (e.g., associated terms) should be examined. On the basis of Rosch's (1978) categorization model, the coding scheme included a category for basic (e.g., athletes) and subordinate (e.g., Richard Pryor) level exemplars of the social category. Superordinate labels were not included because subjects had been asked to generate alternate labels prior to the thought-listing task. Strong support for the coding scheme was found in the pilot study. The pilot study did not examine the complexity of thought listings as a function of subjects' prejudice level. That was the goal of this study.

<sup>6</sup> As a prerequisite to examining the content of the protocols, an analysis on the number of thoughts and the number of alternate labels generated by high- and low-prejudice subjects was performed to examine whether prejudice level affected these tasks. Although it was expected that subjects would generate more thoughts than alternate labels, the key tests of interest were provided by the prejudice-level main effect (whether one group listed more items than the other) and the Prejudice Level  $\times$  Task interaction (whether prejudice level differentially affected the tasks). These data were submitted to a Prejudice Level (high vs. low)  $\times$  Task (label generation vs. thought generation) mixed-model analysis of variance. The analysis revealed that subjects generated a greater number of thoughts ( $M = 12.67$ ) than labels ( $M = 4.72$ ),  $F(1, 65) = 156.83$ ,  $p < .0001$ . However, neither the prejudice main effect,  $F(1, 65) = 0.66$ ,  $p < .42$ , nor the Prejudice Level  $\times$  Task interaction,  $F(1, 65) = 0.01$ ,  $p < .94$ , was significant.

The proportion of pejorative and nonpejorative labels generated was calculated for each subject. Pejorative labels included terms such as the following: niggers, coons, spades, spear-chuckers, jungle bunnies, and jigs. Nonpejorative labels included the following: Blacks, Afro Americans, Brothers, and colored people. One high-prejudice subject was eliminated from this comparison because she failed to generate any alternate labels. The comparison indicated that the proportion of pejorative alternate labels did not differ between high-prejudice ( $M = .53$ ) and low-prejudice ( $M = .44$ ) subjects,  $t(64) = .68, p > .10$ . It appears, then, that high- and low-prejudice subjects were aware of the various pejorative labels.

Examination of the thought-listing protocols, however, revealed important differences between high- and low-prejudice subjects. The important differences appeared to be associated with the belief and trait categories.<sup>7</sup> Negative beliefs included thoughts such as "Blacks are free loaders"; "Blacks cause problems (e.g., mugging, fights)"; "Affirmative action sucks"; and so on. Positive-belief thoughts included "Blacks and Whites are equal"; "Affirmative action will restore historical inequities"; "My father says all Blacks are lazy, I think he is wrong" (e.g., negation of the cultural stereotype); "It's unfair to judge people by their color—they are individuals"; and so on. The positive and negative traits were typically listed as single words rather than being written in complete sentences. Negative traits included hostile, lazy, stupid, poor, dirty, and so on. The positive traits included musical, friendly, athletic, and so on.

The frequency of these positive-belief, negative-belief, and trait thoughts listed in subjects' protocols were submitted to a Prejudice Level (high vs. low)  $\times$  Valence (positive vs. negative)  $\times$  Thought Type (trait vs. belief) mixed-model ANOVA. Prejudice level was a between-subjects variable, and valence and thought type were within-subjects variables. The analysis revealed the expected Prejudice Level  $\times$  Valence interaction,  $F(1, 65) = 28.82, p < .0001$ . High-prejudice subjects listed more negative ( $M = 2.06$ ) than positive ( $M = 1.48$ ) thoughts, and low-prejudice subjects listed more positive ( $M = 2.28$ ) than negative ( $M = 1.10$ ) thoughts. In addition, there was a Prejudice Level  $\times$  Type interaction,  $F(1, 65) = 18.04, p < .0001$ . This interaction suggested that high-prejudice subjects were more likely to list trait ( $M = 2.56$ ) than belief ( $M = 1.52$ ) thoughts. In contrast, low-prejudice subjects were more likely to list belief ( $M = 2.86$ ) than trait ( $M = 1.12$ ) thoughts. These interactions are important because the Black stereotype traditionally has been largely negative and composed of traits (Brigham, 1971). Ascription of negative components of the stereotype was verified in these data only for high-prejudice subjects.

These two-way interactions were qualified, however, by a significant Prejudice Level  $\times$  Valence  $\times$  Thought Type interaction,  $F(1, 65) = 4.88, p < .03$ . High-prejudice subjects most often listed negative traits ( $M = 3.32$ ). A post hoc Duncan test ( $p = .05$ ) revealed that for high-prejudice subjects, the frequency of negative trait thoughts differed significantly from each of the other three thought types but that the frequency of positive-belief ( $M = 1.17$ ), negative-belief ( $M = 1.18$ ), and positive trait ( $M = 1.79$ ) thoughts did not differ from each other. In contrast, low-prejudice subjects most frequently listed positive-belief thoughts ( $M = 4.52$ ). This mean differed significantly (Duncan

test,  $p = .05$ ) from the negative-belief ( $M = 1.21$ ), positive trait ( $M = 1.24$ ), and negative trait ( $M = 1.00$ ) means, but the latter three means did not differ from each other.

It was argued earlier that this type of task would encourage subjects to intentionally access and report thoughts consistent with their personal beliefs. Trait ascriptions are part of high-prejudice, but not low-prejudice, subjects' beliefs according to the present model. It appears that in this task, both high- and low-prejudice subjects' thoughts reflected their beliefs. High-prejudice subjects reported primarily traits and low-prejudice subjects reported beliefs that contradicted the cultural stereotype and emphasized equality between the races.

To follow up implications from the previous studies, subjects' protocols were examined to determine whether the themes of hostility, aggressiveness, or violence were present. Statements such as "They are hostile," "Blacks are violent," "Blacks are aggressive," and so on were considered to reflect this theme. Non-trait-based thoughts such as "They rape women" or "I'm scared of them" were less frequent but were also considered to reflect the general theme. Sixty percent of the high-prejudice subjects directly included such themes in their thought-listing protocols. In contrast, only 9% of the subjects scoring low in prejudice included hostility themes in their protocols. A  $z$  test on proportions indicated that this difference was reliable ( $z = 4.41, p < .01$ ).

### Discussion

Taken together, these sets of analyses indicate that high- and low-prejudice subjects were willing to report different thoughts about Blacks. In addition, these analyses suggested that there were sufficient levels of variability in prejudice levels among the subjects to detect the effects of prejudice in the previous studies should those effects exist. The thought-listing task was one in which subjects were likely to think carefully about what their responses implied about their prejudice-relevant self-concepts. For those who valued a nonprejudiced identity, writing stereotype-congruent thoughts would have been inconsistent with and perhaps would have threatened their nonprejudiced identity.

Thus, even under anonymous conditions, low-prejudice subjects apparently censored and inhibited (Neely, 1977) the automatically activated negative stereotype-congruent information and consciously replaced it with thoughts that expressed their nonprejudiced values. Low-prejudice subjects wrote few pejorative thoughts. Their thoughts were more likely to have reflected the importance of equality or the negation of the cultural stereotype. Moreover, low-prejudice subjects appeared reluctant to ascribe traits to the group as a whole. In contrast, the protocols of high-prejudice subjects seemed much more consis-

<sup>7</sup> A canonical discriminant function analysis in which subjects' prejudice level was predicted as a function of the best linear combination of the 10 coding categories revealed a single canonical variable (Wilks's lambda = 0.63),  $F(10, 56) = 3.25, p < .002$ . The canonical squared multiple correlation was 0.37. Positive-belief thoughts were located at one extreme of the canonical structure ( $-0.88$ ) and negative trait thoughts at the other (0.78). None of the other categories discriminated significantly between high- and low-prejudice groups.

tent with the cultural stereotype of Blacks. Their thoughts were primarily negative, and they seemed willing to ascribe traits to the group (especially negative traits).

A most important comparison for the present three studies, and for the intergroup perception literature more generally, concerns the likelihood of subjects reporting thoughts reflecting the theme of hostility. Much of the intergroup perception literature has assumed that the hostility component of the stereotype influences perceptions of Blacks (Donnerstein et al., 1972; Duncan, 1976; Sager & Schofield, 1980), and Studies 1 and 2 suggested that hostility is strongly associated with Blacks for both high- and low-prejudice subjects. Study 2 in particular suggested that hostility is automatically activated when the category label and associates are presented. The present data, however, suggest that high- and low-prejudice subjects differ in their willingness to attribute this characteristic to the entire group. High-prejudice subjects included thoughts suggesting that Blacks are hostile and aggressive much more frequently than did low-prejudice subjects. The present framework suggests that this difference likely reflects low-prejudice subjects engaging in controlled, stereotype-inhibiting processes. Low-prejudice subjects apparently censored negative, what they considered inappropriate, thoughts that came to mind.

### General Discussion

The model examined in these studies makes a clear distinction between knowledge of the racial stereotype, which Study 1 suggested both high- and low-prejudice persons possess, and personal beliefs about the stereotyped group. Study 2 suggested that automatic stereotype activation is equally strong and equally inescapable for high- and low-prejudice subjects. In the absence of controlled stereotype-related processes, automatic stereotype activation leads to stereotype-congruent or prejudice-like responses for both those high and low in prejudice. Study 3, however, provided evidence that controlled processes can inhibit the effects of automatic processing when the implications of such processing compete with goals to establish or maintain a nonprejudiced identity.

The present model suggests that a change in one's beliefs or attitude toward a stereotyped group may or may not be reflected in a change in the corresponding evaluations of or behaviors toward members of that group. Consider the following quote by Pettigrew (1987):

Many southerners have confessed to me, for instance, that even though in their minds they no longer feel prejudice toward blacks, they still feel squeamish when they shake hands with a black. These feelings are left over from what they learned in their families as children. (p. 20)

It would appear that the automatically activated stereotype-congruent or prejudice-like responses have become independent of one's current attitudes or beliefs. Crosby, Bromley, and Saxe (1980) argued that the inconsistency sometimes observed between expressed attitudes and behaviors that are less consciously mediated is evidence that (all) White Americans are prejudiced against Blacks and that nonprejudiced responses are attempts at impression management (i.e., efforts to cover up

truly believed but socially undesirable attitudes). (See also Baxter, 1973; Gaertner, 1976; Gaertner & Dovidio, 1977; Linn, 1965; Weitz, 1972.) Crosby et al. argued that nonconsciously monitored responses are more trustworthy than are consciously mediated responses.

In the context of the present model in which automatic processes and controlled processes can be dissociated, I disagree fundamentally with this premise. Such an argument denies the possibility for change in one's attitudes and beliefs, and I view this as a severe limitation of the Crosby et al. (1980) analysis. Crosby and her colleagues seem to identify the flexibility of controlled processes as a limitation. In contrast, the present framework considers such processes as the key to escaping prejudice. This statement does not imply that change is likely to be easy or speedy (and it is certainly not all or nothing). Nonprejudiced responses are, according to the dissociation model, a function of intentional, controlled processes and require a conscious decision to behave in a nonprejudiced fashion. In addition, new responses must be learned and well practiced before they can serve as competitive responses to the automatically activated stereotype-congruent responses. What is needed now is a fully articulated model of controlled processes that delineates the cognitive mechanisms involved in inhibition. Logan and Cowan (1984; see also Bargh, 1984) have developed a model of controlled processes that may provide valuable insights into the inhibition process.

Thus, in contrast to the pessimistic analysis by Crosby et al. (1980), the present framework suggests that rather than all people being prejudiced, all are victims of being limited capacity processors. Perceivers cannot attend to all aspects of a situation or their behavior. In situations in which controlled processes are precluded or interfered with, automatic processing effects may exert the greatest influence on responses. In the context of racial stereotypes and attitudes, automatic processing effects appear to have negative implications.

Inhibiting stereotype-congruent or prejudice-like responses and intentionally replacing them with nonprejudiced responses can be likened to the breaking of a bad habit. That is, automatic stereotype activation functions in much the same way as a bad habit. Its consequences are spontaneous and undesirable, at least for the low-prejudice person. For those who have integrated egalitarian ideals into their value system, a conflict would exist between these ideals and expressions of racial prejudice. The conflict experienced is likely to be involved in the initiation of controlled stereotype-inhibiting processes that are required to eliminate the habitual response (activation). Ronis, Yates, and Kirscht (in press) argued that elimination of a bad habit requires essentially the same steps as the formation of a habit. The individual must (a) initially decide to stop the old behavior, (b) remember the resolution, and (c) try repeatedly and decide repeatedly to eliminate the habit before the habit can be eliminated. In addition, the individual must develop a new cognitive (attitudinal and belief) structure that is consistent with the newly determined pattern of responses.

An important assumption to keep in mind in the change process, however, is that neither the formation of an attitude from beliefs nor the formation of a decision from attitudes or beliefs entails the elimination of earlier established attitudinal or ste-

reotype representations. The dissociation model holds that although low-prejudiced persons have changed their beliefs concerning stereotyped group members, the stereotype has not been eliminated from the memory system. In fact, it remains a well-organized, frequently activated knowledge structure. During the change process the new pattern of ideas and behaviors must be consciously activated and serve as the basis for responses or the individual is likely to fall into old habits (e.g., stereotype-congruent or prejudice-like responses).

The model suggests that the change process involves developing associations between the stereotype structure and the personal belief structure. For change to be successful, each time the stereotype is activated the person must activate and think about his or her personal beliefs. That is, the individual must increase the frequency with which the personal belief structure is activated when responding to members of the stereotyped group. To the extent that the personal belief structure becomes increasingly accessible, it will better provide a rival response to the responses that would likely follow from automatic stereotype activation. In cognitive terms, before the newer beliefs and attitudes can serve as a rival, the strong association between the previously learned negative attitude and Blacks will have to be weakened and the association of Blacks to the new nonprejudiced attitudes and beliefs will have to be made stronger and conscious.

In summary, at minimum, the attitude and belief change process requires intention, attention, and time. During the change process an individual must not only inhibit automatically activated information but also intentionally replace such activation with nonprejudiced ideas and responses. It is likely that these variables contribute to the difficulty of changing one's responses to members of stereotyped groups. In addition, these variables probably contribute to the often observed inconsistency between expressed attitudes and behavior. The nonprejudiced responses take time, attention, and effort. To the extent that any (or all) of these are limited, the outcome is likely to be stereotype-congruent or prejudice-like responses.

In conclusion, it is argued that prejudice need not be the consequence of ordinary thought processes. Although stereotypes still exist and can influence the responses of both high- and low-prejudice subjects, particularly when those responses are not subject to close conscious scrutiny, there are individuals who actively reject the negative stereotype and make efforts to respond in nonprejudiced ways. At least in situations involving consciously controlled stereotype-related processes, those who score low in prejudice on an attitude scale, are attempting to inhibit stereotypic responses (e.g., Study 3; Greeley & Sheatsley, 1971; Taylor et al., 1978; see also Higgins & King, 1981). The present framework, because of its emphasis on the possible dissociation of automatic and controlled processes, allows for the possibility that those who report being nonprejudiced are in reality low in prejudice.

This analysis is not meant to imply that prejudice has disappeared or to give people an excuse for their prejudices. In addition, it does not imply that only low-prejudice persons are capable of controlled stereotype inhibition. High-prejudice persons could also consciously censor their responses to present a nonprejudiced identity (probably for different reasons than low-

prejudice persons, however). What this analysis requires is that theoreticians be more precise on the criteria established for labeling behavior as prejudiced or nonprejudiced. The present model and set of empirical studies certainly does not resolve this issue. However, the present framework highlights the potential for nonprejudiced behaviors when social desirability concerns are minimal (Study 3) and invites researchers to explore the variables that are likely to engage controlled stereotype-inhibiting processes in intergroup settings. At present, it seems productive to entertain and systematically explore the possibility that being low in prejudice reflects more than impression-management efforts and to explore the conditions under which controlled stereotype-inhibition processes are engaged.

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