

Gender and Racial Stereotypes in Impression Formation and Social Decision-Making Processes¹

Nyla R. Branscombe²

University of Kansas

Eliot R. Smith

Purdue University

Subjects who differed on relevant measures of prejudice examined photographs and trait descriptions of job candidates. Gender or racial stereotypes were cued by the photographs of the applicants, and to assess the impact of individuating information on stereotype use, the trait description concerning the applicants were manipulated so that they were either primarily stereotype-consistent, stereotype-inconsistent, or neutral. After forming an impression of each applicant, subjects completed a number of evaluative trait ratings, a liking measure, and two process-oriented measures—an information search task and a recall measure. The counter-stereotypic hiring recommendations were not mediated by the impression formed of the candidate, suggesting self-presentational concerns influenced these judgments; hiring choices were based solely on the photograph in the gender case, and on both the photograph and traits in the race case. On the evaluative trait ratings, subjects appeared relatively uninfluenced by the stereotype, although the more subtle process-oriented measures showed effects that are consistent with stereotype-guided processing. Based on the results, a model of the role of stereotypes in social decision-making is presented.

¹This research was aided by a Social Sciences and Humanities Research Council of Canada Doctoral Fellowship and a New Faculty Grant from the University of Kansas to the first author, and by a National Science Foundation Grant to the second author. We would like to thank Kay Deaux, Chick Judd, Mary Kite, Jim Sherman, and an anonymous reviewer for their helpful comments on an earlier version of the manuscript. Portions of this paper were presented at the meeting of the American Psychological Association, Toronto, Canada, August, 1984.

²To whom correspondence should be addressed at Department of Psychology, University of Kansas, Lawrence, Kansas 66045.

Research in social cognition has demonstrated that an activated schema or cognitive category can influence how information about a target person is processed and the final judgment ultimately arrived at (Higgins, Rholes & Jones, 1977; Wyer & Srull, 1980). In this study we investigated how a particular type of schema—a stereotype of a well-specified and consensually agreed upon group—influences processing of information about a person from that group, and how it might influence socially significant decision-making processes. Past research (Devine, 1989; Smith & Branscombe, 1985) indicates that racial and gender stereotypes are automatically activated immediately following categorization of a target as a member of one of these groups. The primary purpose of the current research was to determine whether such stereotypes influence hiring decisions directly, or whether they exert an effect on such decision-making via their influence on impression formation processes.

Toward this end, we formulated and conducted a preliminary test of our sequential model of the stages of the stereotyping process. Theoretically, and particularly in the context of our study, there are at least four stages involved in the process: (1) the retrieval of stereotype information from memory, cued by the target person's physical appearance; (2) the integration of other available information with the retrieved stereotype into an overall impression of the target's personality; (3) the selection of decision rules or criteria by which to make the decision; and (4) the final decision to hire or not hire the target person.

Stage 1, the cueing of the appropriate stereotype, was accomplished by presenting subjects with photographs of target persons, and the influence of accessing the stereotype on the later stages was examined as a direct effect of this manipulation on the measures tapping the subsequent stages. Stage 2, that of impression formation, was manipulated with the traits that were associated with the various targets. The traits were either consistent with the retrieved stereotype, inconsistent with it, or irrelevant. The impression formed was measured in several ways including traditional trait ratings, liking, and expected success. A more subtle measure of the degree to which the stereotype itself was guiding this impression formation stage was free recall of the trait adjectives used to describe the target. Theoretically, recall is a measure of the "depth of processing" or amount of elaborative encoding that the subjects performed on the target information (cf. Craik & Lockhart, 1972). If the activated stereotype is sufficient for guiding impression formation, then recall of the trait attributes should be low when the target is a member of a stereotyped group. If, on the other hand, the traits are only examined closely when they are obviously inconsistent with the retrieved stereotype, then an interaction between the group membership information and the traits condition would be observed. Stage 3, setting the criteria in decision-making, was

examined with an information search technique. If more supportive evidence is required to make a favorable judgment concerning a minority candidate than a majority target, then this shifting criteria for judgment can be assessed with the amount of additional information requested about each target. Finally, stage 4, the actual decision-making outcome, was measured as a binary choice between candidates. Using a regression model, we were able to assess the degree to which the outcomes of the previous stages determined the final judgment. That is, whether an earlier stage (especially, Stage 2, involving impression formation) mediates the effects of stereotypes on the final choice, or whether the hiring choice was determined solely by group membership.

The decomposition of stereotype effects in this manner into such detailed stages will allow a better integration of stereotyping with general models of person perception, which have recently been characterized by proposals of stage theories as well (e.g., Burnstein & Schul, 1982). This technique also allows us to examine the degree to which stereotyping processes are similar across diverse content domains. We conducted two replications for this purpose. Group membership, via the photographs, in one replication concerned gender of the target, and in the second replication concerned race of the target. We expected two types of differences due to content of the stereotype. First, the evaluative nature of the stereotypes differ, with the black stereotype being fairly consistently negative (Brigham, 1971) and the female stereotype more mixed in nature (generally good on dimensions of expressivity and interpersonal concern, and bad on dimensions involving instrumentality and task competence—see Bem, 1974). These content differences may lead to differences in the patterns of inferences subjects will make about black versus female candidates when forming impressions of them.

The second difference between the two replications that we expected concerns the social acceptability of appearing prejudiced. Recent evidence from a national survey (Smith & Kluegel, 1984) as well as other findings suggest a wide distribution of traditional sex-role stereotypes and the view that it is appropriate to exclude women from certain roles simply on the basis of gender. On the other hand, traditional racial prejudice and the view that blacks should be restricted from desirable jobs have all but vanished from the American scene, with less than 10% of the population currently overtly endorsing such ideas (Burnstein, 1979). Though college students may be somewhat more liberal than the general population on both of these issues, such findings imply that subjects may be more consciously concerned about appearing to stereotype and base decisions on group membership with respect to race than with gender.

This last issue of subjects consciously shaping their responses in the study for strategic self-presentational reasons (primarily to appear unprejudiced), if they are able to grasp the underlying purpose of the study, is one

we deal with in two ways.³ First, as described in the method section we elaborately disguised the purpose of the research, and during the post-experimental interview it was clear that subjects could not even approximately verbalize our primary hypotheses. Second, we believe that our approach where different types of measures are employed, allows us to separate responses based on concerns about presenting an "unprejudiced" identity from the less conscious effects of stereotype activation on information processing and social decision-making. We assume that overt responses on rating scales concerning the degree to which a target possesses stereotypic traits, is competent, and so on, maximizes the probability of strategic, self-presentational responding. In contrast, responses on the process-oriented measures such as the free recall and information search tasks are much more difficult to bias in a socially desirable fashion. When different types of information about candidates can be requested, it is likely to be non-obvious to the subject that the sheer amount of information requested for different targets reflects stereotype employment. Similarly, amount of recalled information is unlikely to appear to subjects as indicating anything about their guidance by a stereotype. Nevertheless, consistent with Hastie (1981), we expected that targets who were described with some traits that were stereotype-inconsistent would attract greater attention during the impression formation stage, thereby resulting in higher levels of recall. Such a pattern of effects would indicate that stereotypes are guiding impression formation, even if subjects are unwilling to demonstrate it directly on the trait rating scales.

Finally, we also wished to assess the degree to which individual differences in relevant measures of prejudice influenced outcomes at each stage of the information processing and decision-making sequence. Hence, individual differences in racism or feminism, depending upon the replication, were used as predictor variables in all of the analyses. The prejudice measures were expected to be important particularly for the process-oriented measures. Individuals with relatively high versus low levels of racism or feminism were expected to possess somewhat different schemas for these target groups. For example, individuals with high feminism scores may not have such well-defined expectations for females and males to possess stereotypic traits and, for this reason, may be less likely to show the Hastie (1981) schema-inconsistency effect. On the other hand, only individuals with relatively high levels of racism may show inattention to the traits of the minority candidate, thereby exhibiting particularly low levels of recall. For the information search mea-

³It is *very* difficult to conduct a stereotyping study in which subjects are truly unaware of the dimension under study. Contrary to some opinions, even the use of purely between-subjects designs does not rule out such awareness and conscious strategic responding (Scheier, Carver, Schultz, Glass, & Katz, 1978).

sure, it was expected that low levels of feminism and high levels of racism would in effect create uncertainty about minority candidates, encouraging those subjects to adopt a more stringent criterion for acceptance by elevating the perceived need for additional information compared to what would be required by high feminist and low racist persons.

METHOD

Subjects (96 males; 96 females) received a booklet consisting of three sections in which information about "candidates for a management training program" was provided. This context was chosen because it is a situation where it is natural to choose among persons, and also because it is one with great social consequences for those who are stereotyped (Taylor & Ilgen, 1981; Terborg, 1977). Within each of the three different sections, two different job candidates were described. After examining the information about a particular candidate within a section, subjects were asked to make judgments about him or her, and then to indicate a choice between them for acceptance into a management training program. Subjects then continued this same procedure through the next two sections of the booklet. The first section and evaluation of those two white male job candidates was included merely as practice. The second and third sections contained the experimental manipulations consisting of a white male candidate and a white female candidate (the gender replication), or a black male candidate and a white male candidate (the race replication). The order of presentation of the race and gender sections was counterbalanced.

Each job candidate was represented by a photograph⁴ and by a list of five trait adjectives that had been ostensibly gleaned from information provided by previous employers of the candidates. The trait sets were equated on likability using Anderson's (1968) norms, with two of the five traits being either consistent with the black or female stereotype depending upon the section, inconsistent with the stereotype, or neutral (two different sets of neutral traits were used to permit counterbalancing). The remaining three trait descriptors used were irrelevant to both the racial and gender stereotypes, with one always being moderately positive, another moderately negative, and the third neutral. Stereotype-irrelevant information was included in the trait descriptions of the job candidates for two reasons: (1) to decrease the obviousness of the manipulation; and (2) because past research suggests that

⁴Several different photographs were used in each condition to avoid responses based on unique attributes of a single photograph. The photographs were equated and selected for use in this study on the basis of 30 pretest subject's ratings of their attractiveness and apparent intelligence.

stereotyping effects are more likely to be detected when additional, seemingly diagnostic but stereotype-irrelevant information is present (Darley & Gross, 1983). In the gender replication, examples of the stereotype-irrelevant traits were: forgetful, relaxed, materialistic, broad-minded. Traits such as optimistic, self-concerned, consistent, and unsympathetic were considered stereotype-irrelevant in the race section.

Since both gender and racial stereotypes are multidimensional, we wished to test the logic of Grant and Holmes (1981) and examine the generalization of stereotype-based inference from one trait dimension to another. Grant and Holmes (1981) found such a process operating in their work: when subjects were told that an individual possessed traits that reflected one dimension of the stereotype they inferred the presence of traits from other dimensions of the stereotype. The components of gender stereotypes that we examined were independent/dependent, rational/emotional, competitive/nurturant, and aggressive/unassertive (cf. Deaux & Lewis, 1983). The racial stereotype dimensions tapped in this research were intelligent/unintelligent, responsible/impulsive, motivated/lazy, and friendly/hostile (cf. Brigham, 1971). In both the gender and the race cases, traits reflecting the first two of the above components of each stereotype were manipulated via the presented trait descriptors, although all of the dimensions for a given stereotype were measured. Thus, we assessed both the subjects' impressions of the target on the manipulated dimensions themselves, and the extent to which the stereotype guides inferences from these manipulated components to the other dimensions of the same stereotype that were not directly manipulated in the trait descriptions.

There were four versions of the stimulus materials that were needed for each of the replications to allow counterbalancing of the assignment of traits to the target persons. Thus, the materials formed a 4 (traits list) \times 2 (gender/race of photograph) between-subjects factorial design. Assignment of traits to photographs was counterbalanced as was the order that the two replications were presented so that across subjects all stimulus conditions were employed. The conditions for the gender replication, and the trait descriptors employed in each, are shown in Table I (the race replication was constructed in an identical fashion).

Once the students had read the traits that were descriptive of a candidate and had examined the associated photograph, they were asked to pause for a moment and to form a mental impression of that candidate. Subjects then indicated how they perceived the target by rating him or her on a number of items regarding the stereotypic dimensions that were manipulated by the traits, as well as the stereotypic dimensions that were not manipulated (cf. Grant & Holmes, 1981), each candidate's likability, and traits tapping a good/bad evaluative dimension (e.g., productive, good, competent, likelihood of suc-

Table I. Manipulated Stereotype Dimensions and Traits Presented to Subjects in Each of the Gender Conditions

| Trait information condition | Target | |
|-----------------------------|-------------------------------|-------------------------------|
| | Male | Female |
| Stereotype-Consistent | INDEPENDENT (opinionated) | DEPENDENT (impressionable) |
| | RATIONAL (scientific) | EMOTIONAL (artistic) |
| Stereotype-Inconsistent | DEPENDENT (impressionable) | INDEPENDENT (opinionated) |
| | EMOTIONAL (artistic) | RATIONAL (scientific) |
| Stereotype-Neutral Set A | forgetful | relaxed |
| | broad-minded | materialistic |
| Stereotype-Neutral Set B | relaxed | forgetful |
| | materialistic | broad-minded |

Note. The dimension of the stereotype that was intended to be manipulated and was actually rated by the subject on a 1 to 7 scale is shown in capital letters. The traits that were actually presented in the original description of the target are shown in lower case letters. All subjects received one of the four versions of the two targets.

cess). To avoid having subjects rate the targets using the actual words for the manipulated dimensions that had been used to describe the candidate initially, subjects rated the targets on trait terms that were as close to synonyms of the originals as possible. This procedural pairing of terms presented and those later rated is illustrated in Table I. For example, the target who was originally described as scientific in his/her approach would later be rated on a 1 to 7 scale, with very rational and not at all rational as anchors.

Finally, once the two candidates in each section had been rated, subjects were asked to choose the candidate that they would admit to the program and to indicate the strength of their preference for one candidate over the other. The hiring choice (coded as -1 for the female or black candidate and +1 for the white male candidate) was weighted by subjects' confidence level which ranged from 1 to 10.

Two process-oriented measures were also used to help clarify the impression formation and judgment processes used by subjects. The first was an information search measure. Subjects chose, for each candidate, from a list of 35 different types of information (e.g., I.Q., place of birth, leadership potential, grade point average, religion), those items that they would like to have if they were actually the director of the program and needed to be absolutely sure of their judgment. Subjects were free to choose from 0 to

35 pieces of information; no limits were explicitly imposed, although subjects were told that in the real world acquiring information is costly and to select only those pieces of information that they felt were really needed. The amount of additional information required about a candidate should index the subject's degree of confidence about their judgments based on only the presented trait and photograph information. Once the information search task was completed, the two candidates comprising the second replication were presented and responded to in the same way as the first two candidates.

The second process-oriented measure was free recall of the traits used to describe the targets. At the end of the experimental session after all candidates had been evaluated, subjects attempted to recall in the same order as they were presented, the traits associated with each of the six candidates, with the name of the target serving as a retrieval cue. The recall measure, scored using a gist criterion, should indicate the amount of attention the subject gave the traits when they were encoded, not superiority in cueing at the recall stage. Interference from recalling the traits of earlier candidates could not be differentially operating as all orders of recall occurred equally often (see the above section on counterbalancing the order of presentation of the candidates, and subjects were asked to recall the traits in the order that the candidates were examined).

In addition, as part of the experimental booklet, subjects completed "symbolic racism" items which tapped their attitude toward blacks (McConahay & Hough, 1976; Kinder & Sears, 1981) and items that measure attitudes toward feminism and women's roles (Smith, Ferree & Miller, 1975). These items were mixed with a variety of other filler opinion items concerning various social issues (e.g., gun control, abortion, drug use policies, etc.). In order to further disguise the purpose of the experiment, subjects also completed a series of anagrams and indicated their feelings concerning a variety of political figures and groups. In sum, the study was portrayed to subjects as four separate experiments which for practical purposes had been combined. The attitude measure was collected first, the anagrams task was second, the three pairs of candidates came next, and the task concerning feelings about political groups was last. This procedure for disguising the purposes of the experiment was generally successful. During the debriefing, when subjects were asked which two of the four experiments that they took part in they thought might be related, only 26% selected the correct two (the initial attitude assessment procedure and the section concerning the job candidates), when 17% would be expected to select those two by chance alone.

RESULTS AND DISCUSSION

Gender

The first issue we addressed concerns whether the stereotype is cued from memory on the basis of physical characteristics alone (i.e., the photo) or whether the manipulated stereotype trait information also has an impact on impressions, as evidenced by ratings of the target's personality. If both types of information were necessary, then a traits by target interaction should be obtained. This was not the case. Instead, as described below, we found that the photo and trait manipulation had independent effects on the various dependent measures that tapped subject's impressions of the target.

Impression of the Candidates. First, gender as indicated by the photo, had several significant effects on ratings of the target. Subjects indicated that they would like the female target better ($M = 4.69$) than the male target ($M = 4.38$), $F(1, 179) = 4.63$; $p < .05$. The rating of the target person on dependence and emotionality (the manipulated stereotype dimensions) was higher for the female ($M = 3.87$) than for the male ($M = 3.58$), $F(1, 181) = 13.3$; $p < .001$. This rating was also significantly influenced by the trait manipulation, serving in effect as a manipulation check ($M = 3.75$ for the female-stereotypic traits; $M = 3.61$ for the neutral traits; and $M = 3.54$ for the female stereotype-inconsistent traits), $F(3, 181) = 3.59$; $p < .05$.⁵ Finally, the rating of the target on the nonmanipulated stereotype dimensions was influenced by the trait manipulation. When the target was said to be independent and emotional, he or she was also inferred to be nurturant and unassertive ($M = 4.49$ for the female stereotypic conditions; $M = 4.11$ for the neutral conditions; and $M = 4.08$ for the female stereotype-inconsistent conditions), $F(3, 180) = 4.34$; $p < .01$. The main effect of target gender on inferences concerning the nonmanipulated stereotype dimensions approached significance, where female targets tended to be rated higher on the female stereotype-consistent dimensions. No effects on the good/bad scale or on attributed competence/likelihood of success measures reached significance, and the effects of subjects' feminism scores (dichotomized) and its interactions with the two independent variables were never significant.

⁵To avoid confusion, throughout this section, the terms stereotype-consistent and stereotype-inconsistent are used only to refer to the *relationship* between the photo and the trait information. That is, a dependent emotional male is stereotype-inconsistent and a female with such traits is stereotype-consistent. However, when a reference is made to the traits alone (regardless of the photo), then a term designating the traits' consistency or inconsistency with the stereotype we are investigating will be used (e.g., female stereotypic traits, black stereotype-inconsistent traits).

Thus, both the manipulated traits and gender had independent effects on aspects of the impressions formed of the target's personality, and these effects did not differ between high and low feminism subjects. Females were liked better than males, they were seen as more likely to possess the manipulated female stereotype-consistent traits, and there was a tendency on the part of the subjects to be more willing to assume that female candidates also possessed the nonmanipulated stereotype dimensions. Gender did not, however, influence perceived competence or inferences concerning the stereotype-irrelevant traits, although the trait manipulation did not influence these ratings either. The trait manipulation failed to influence perceived likability but it did determine the extent to which the targets were perceived as stereotypical in terms of both the manipulated and nonmanipulated dimensions.

The Final Hiring Decision. In order to assess the degree to which the hiring decision was mediated by impressions of the target (as opposed to gender or actual stereotype-consistency alone), all of the personality ratings—including the mean of the manipulated and nonmanipulated dimension ratings, likability, perceived competence, and good/bad stereotype-irrelevant items—gender of the target, the trait condition, and feminism scores were entered as independent variables into a regression equation. The only significant effect on the hiring decision was gender of the target. Subjects preferred to hire the female candidate over the male candidate (tested by a *t*-test of the mean value for the hire variable, ranging from +10 to -10, against zero, its null hypothesis value, $M = -4.48$, $t(180) = 34.4$; $p < .001$). This implies that subjects' hiring decision was based largely on gender without the impressions of the candidates, even in terms of their perceived likability, having much independent impact on this judgment.

Process-Oriented Measures. The two process-oriented measures, information search and recall of information about the candidate, offer an alternative view than do the impression formation ratings of the role of stereotypes in social judgment. For the information search measure, a significant main effect for gender was obtained, $F(1, 184) = 14.32$; $p < .001$, but was qualified by a significant three-way interaction, $F(2, 184) = 3.19$; $p < .05$. The main effect simply indicated that subjects felt they needed more information about the female candidate ($M = 11.60$ pieces of additional information from the list of 35 possible types) than the male candidate ($M = 11.17$) in order to make a choice between them. The interaction showed that high-feminism subjects wanted relatively more information on stereotype-inconsistent individuals (independent, rational females and dependent, emotional males) while low-feminism subjects wanted more information concerning stereotype-consistent targets. When either group of neutral traits were assigned to the target, however, the subject groups did not differ in the amount of information desired. It is possible that the information search measure actually tapped

increased interest on the part of subjects who were philosophically similar to the candidates, rather than uncertainty per se, as was expected.

For the recall measure, the three two-way interactions were all significant. The feminism by trait interaction, $F(2, 186) = 3.49$; $p < .04$, showed that high feminists, relative to low feminists, recalled more of the trait information when the candidate was described with female stereotypic traits. This is consistent partly with the information search data described above. High-feminist subjects wanted more information about males with female stereotypic traits, although they also wanted more information about females with female stereotype-inconsistent traits.

The two-way interaction between attitudes toward feminism and gender of the target, $F(1, 186) = 5.53$; $p < .02$, indicated that similar amounts of information was recalled about the male candidate, regardless of the subjects' level of prejudice ($M_s = .90$ and $.87$). More trait information overall was recalled about female candidates (0 to 5 traits could be potentially recalled) than for males. Individuals with positive attitudes towards feminism recalled more information about female targets ($M = 1.60$) than did individuals with more negative attitudes ($M = 1.19$). Positive attitudes toward feminism seems to have led subjects to focus more closely on information about female versus male target persons.

The trait by gender interaction was also significant, $F(2, 186) = 3.61$; $p < .03$. Relatively more traits were recalled in the conditions where they represented inconsistent information; that is a female candidate with male stereotypic traits or a male with female stereotypic traits. This finding replicates effects summarized by Hastie (1981) where information that is inconsistent with an organizing schema (such as a gender stereotype) is, in general, attended to more closely at encoding and therefore recalled better than consistent information. However, a simple interpretation of the recall findings is not possible here as recall of the traits was qualified by individual differences in feminism.

To summarize the gender case, effects of the target person's gender on information processing and decision-making occur at several different stages. Initially, stereotypes enter the impression formation process by influencing the impression formed of the target. Gender also influences liking, as well as both process-oriented measures. Finally, gender exerts a direct effect on hiring, with subjects being more likely to recommend hiring the female candidate regardless of the other aspects of their impression. The paradox here is that the impression formed of the target was generally stereotypic, yet the ultimate job decision-making judgment as well as perceptions of competence, were non-stereotypic.

Feminism makes a difference in information processing in several ways that show up on the process-oriented measures. In terms of information

Table II. Summary of Significant Effects for the Gender Replication

| Dependent Measure | Direction of Effect |
|--------------------------------------|---|
| PERSONALITY IMPRESSION | |
| Liking | Female liked more than male. |
| Manipulated Stereotype Dimensions | Female more dependent and emotional than male. Ratings reflected the trait manipulation. |
| Nonmanipulated Stereotype Dimensions | Female more nurturant and unassertive than male. Dependent and emotional targets more nurturant and unassertive than neutral or independent and rational targets. |
| Good/Bad Traits | No Effects |
| Competence | No Effects |
| Subject's Feminism | No Effects |
| HIRING DECISION | Females recommended for hiring over males. |
| INFORMATION SEARCH | More information requested for female than for male targets. High feminism persons requested more information about stereotype-inconsistent targets whereas low feminism persons wanted to know more about stereotype-consistent targets. |
| RECALL | High feminism persons recall more information about stereotype-consistent targets than do low feminism persons. When the target was female high feminists recalled more than low feminists. Information about stereotype-inconsistent targets was more likely to be recalled than information about neutral or stereotype-consistent targets. |

search, persons differing in feminist orientation desired more information about targets with whom they share a similar philosophical orientation. In terms of recall, low-feminist subjects recall relatively less trait information about female targets than do high-feminist persons. This may indicate that low-feminists focus their attention on the female target's gender and do not bother to process her attributes in depth. In effect, such prejudice-based effects may only be detectable when the measure is subtle and not easily consciously influenced (as trait ratings would be). Rating scale measures, in contrast, although these also showed stereotype influences, as well as some counter-stereotypic effects, may be less able to show "true" effects of stereotypes because of their susceptibility to self-presentational concerns. The pattern of effects that occurred for the various dependent measures in the gender case is depicted in Table II.

Race

The same analytic strategy was applied to the race case as was used in the gender replication. The effects of the manipulations of race and traits and the subjects' level of racism on the personality impression measures were examined first, followed by hiring, and then the process-oriented measures.

Impressions of the Candidates. Liking was independently affected by both the race and trait manipulations. Subjects indicated that they would like the minority candidate ($M = 4.53$) better than the white target ($M = 4.19$), $F(1, 182) = 5.66$; $p < .05$. Persons described with black stereotype-consistent traits were liked less than those with neutral or stereotype-inconsistent attributes ($M_s = 3.60, 4.42, \text{ and } 4.95$ respectively), $F(3, 182) = 16.15$; $p < .001$, confirming the essentially negative black stereotype.

As in the gender case, ratings of the target on the manipulated stereotype dimensions (intelligence and impulsivity) were influenced by both the race and the trait manipulation. The trait manipulation influenced these manipulation check ratings in the expected direction ($M_s = 3.77$ for the black stereotype-consistent conditions; 3.16 for the neutral conditions, and 2.31 for the stereotype-inconsistent conditions), $F(3, 180) = 12.51$; $p < .001$. Race influenced inferences concerning the manipulated stereotype dimensions, opposite to expectations. The *white* candidate was perceived as higher on the black stereotypic traits than was the black target ($M_s = 4.36$ and 4.16 respectively), $F(1, 180) = 3.93$, $p < .05$.

In terms of inferences concerning the nonmanipulated stereotype dimensions, the traits manipulation produced generalization to others not presented. Individuals described with the two manipulated black stereotypic attributes ($M = 4.32$) were also more likely to be perceived as lazy and hostile (the nonmanipulated components) than were those described with neutral ($M = 3.83$) or stereotype-inconsistent traits ($M = 3.36$), $F(3, 182) = 15.02$; $p < .001$. Race per se did not influence inferences concerning the nonmanipulated dimensions, possibly confirming our expectation that subjects would show an increased reluctance to appear prejudiced in the race, as opposed to gender, case.

The traits manipulation also influenced the attribution of stereotype-irrelevant traits (the good/bad items), $F(3, 182) = 12.31$; $p < .001$. Individuals presented with black stereotypic traits were perceived as having more bad attributes ($M = 3.96$) than those who were described with neutral traits ($M = 3.46$) or those with black stereotype-inconsistent traits ($M = 3.02$). Finally, the traits manipulation influenced perceived competence/likelihood of success, $F(3, 182) = 9.81$; $p < .001$. Individuals with black stereotype-inconsistent traits were perceived as most capable ($M = 4.67$), followed by those with neutral traits ($M = 4.14$), and then those with black stereotype-consistent traits ($M = 3.47$).

Thus, again we find that both the manipulated traits and race of the target had independent effects on impressions of various aspects of the target's personality. Subjects' level of racism (dichotomized) and its interactions with the other independent variables were never significant. Race influenced only liking and perceived possession of the manipulated stereotype dimensions. Minority candidates were liked better than whites, and blacks were seen as less likely to possess black stereotype-consistent traits than were whites. The trait manipulation, on the other hand, influenced judgments concerning the manipulated and nonmanipulated stereotype components, stereotype-irrelevant traits, likability, as well as perceived job capability.

The Final Hiring Decision. Again, means on all of the impression formation measures, gender of the target, the trait manipulation, and racism scores were entered as independent variables into a regression equation. Two significant effects for the hiring decision emerged. One was race; subjects indicated that they would prefer to hire the black candidate over the white one ($M = -4.61$; $t(188) = 35.5$; $p < .001$). In addition, the assignment of traits to the candidates significantly influenced the hiring choice, $F(3, 184) = 3.62$; $p < .001$). Subjects preferred to hire the candidate with traits that are not stereotypic of blacks over the one with such traits (M s for the hire variable, with negative numbers indicating a greater preference for the minority are -4.71 when the black has stereotypic traits; -4.42 when both have neutral traits; and -5.25 when the white candidate has black stereotypic attributes). No other variables approached significance. Thus, once again the effects on the hiring decision seem to be a direct consequence of the race and trait manipulations, rather than effects of the impressions of the candidates' personalities.

Process-Oriented Measures. Analysis of the information search measure for the race case revealed a significant main effect for race of the candidate, $F(1, 185) = 8.21$; $p < .005$. Subjects desired more of the optional information for judging the black candidate ($M = 11.90$) than they did for the white candidate ($M = 11.56$). This replicates the main effect reported for gender, although no interactions involving racism qualified this outcome. In general then it seems that targets who come from societally defined minorities elicit a greater desire for more information, than when they are members of the majority.

On the recall measure, a main effect for subjects' level of prejudice was obtained, $F(1, 186) = 4.25$; $p < .05$, with low-racism subjects recalling more trait information about both candidates ($M = .90$) than did the high-racism subjects ($M = .69$). This suggests that the attention of the low-racism subjects is less focused on race per se, leaving them more able to process the trait information in depth. High racism-subjects appear to pay less attention to the trait information, perhaps because they base their evaluations more

purely on racial group membership. In addition to this main effect for prejudice, a main effect for race of the applicant was observed, $F(1, 186) = 7.19$; $p < .01$, although it was qualified by a significant race by trait interaction, $F(2, 186) = 6.66$; $p < .002$. While there was generally more information about the black candidate recalled compared to the white, stereotype-inconsistent trait information was recalled better ($M = .97$) than stereotype-irrelevant ($M = .83$) or stereotype-consistent ($M = .57$) for candidates of either race. As in the gender case, information that is inconsistent with an organizing schema such as race seems to receive additional attention resulting in better recall.

A summary of the effects of activating a racial stereotype (via the photographs) and the degree to which the traits that describe a target match stereotypic expectancies on impression formation and decision-making processes can be seen in Table III. Though subjects report disliking individuals who are consistent with a black stereotype and do not expect the individuals to succeed, they carefully avoid saying that they attribute the stereotyped traits

Table III. Summary of Significant Effects for the Race Replication

| Dependent Measure | Direction of Effect |
|--------------------------------------|--|
| PERSONALITY IMPRESSION | |
| Liking | Black liked more than white. Black stereotype-inconsistent target liked better than neutral or black stereotypic target. |
| Manipulated Stereotype Dimensions | White target more impulsive and unintelligent than black. Ratings reflected the trait manipulation. |
| Nonmanipulated Stereotype Dimensions | Unintelligent and impulsive targets more lazy and hostile than neutral or intelligent and responsible targets. |
| Good/Bad Traits | Black stereotypic targets possess more bad traits than neutral or black stereotype-inconsistent targets. |
| Competence | Black stereotypic targets were seen as less competent than neutral or black stereotype-inconsistent targets. |
| Subject's Racism | No Effects |
| HIRING DECISION | |
| | Black recommended for hiring over white. Black stereotype-inconsistent targets recommended for hiring over neutral or black stereotypic targets. |
| INFORMATION SEARCH | |
| | More information sought about the black candidate compared to the white. |
| RECALL | |
| | Low racism persons recalled more trait information than did high racism persons. More information about the black was recalled compared to the white, although information about targets who were inconsistent with the black stereotype was recalled best, followed by neutral targets and then black stereotype-consistent targets. |

to black target persons based on the photographs alone. In fact, they say that a white target possesses these traits to a greater degree than a black. They also show a preference for hiring the black candidate, as a direct effect of race at the final decision stage rather than an effect mediated by personality impressions based on the traits or likability of the target. Thus, the subjects in this study apparently went to great lengths to avoid appearing prejudiced against the black candidate, although the results on the process measures imply that race does have the predicted negative impact on information processing. All subjects requested more additional information about the black candidate than about the white, implying they were less sure of those individuals. Subjects also recalled more of the presented trait information concerning the black when it was inconsistent with the activated stereotype, suggesting that the stereotype was guiding their attention. Prejudice effects were detected only on the non-obvious process-oriented recall measure, making it less likely that our subjects were simply unprejudiced (i.e., there was too little variability on the measure).

Comparison of Gender and Race Stereotyping

A number of aspects of the stereotyping process are similar in the gender and race cases. In both replications, subjects generalized from the manipulated to the nonmanipulated dimensions of the stereotype, and stated a preference for hiring the female and black candidates over the white male. In both cases the judgment appeared *not* to be mediated by the impression of the personality or desirability of the candidates per se, but was based directly on group membership.

In addition, the process-oriented measures showed important similarities: more information was sought about a female or black target than about a white male and more trait information was recalled when it was inconsistent with the target's ethnicity or gender stereotype. Both of these findings were, however, moderated by individual differences in the relevant measures of prejudice, suggesting that increased caution in making decisions about minority candidates and the degree to which stereotypes guide information processing will occur more strongly in some individuals than others.

The overall pattern of significant effects in the two models, then, is similar. The differences appear to be traceable to two attributes that differentiate gender stereotypes from racial stereotypes. First, the female stereotype is more evaluatively mixed, whereas the black one tends to be more thoroughly negative. And, second, subjects appear to be more defensive about appearing prejudiced in the racial case than in the gender domain. These effects show up mainly in the opposite effects of race and gender on measures of

the manipulated stereotype traits. Stereotypic traits are attributed to a female candidate while counter-stereotypic traits are attributed to the black. Nevertheless, the general similarity of the processes elucidated by this research make it reasonable to consider a model of how trait information and a target's group membership influence judgments and social decision-making processes.

A MODEL OF STEREOTYPE USE IN DECISION-MAKING

In what follows, it is assumed that the perceiver obtains information about the target's group membership as well as additional information such as traits, behaviors, or past performance, and has to make some kind of evaluative decision or ratings of the target. These conditions are common to the current study and many other investigations (e.g., Bodenhausen & Lichtenstein, 1987; Darley & Gross, 1983; Locksley, Hepburn & Ortiz, 1982).

1. The target's group membership activates the stereotype (a type of interpersonal "schema") in the perceiver's memory (Smith, 1984; Wyer & Srull, 1980), making the traits or other attributes associated with the stereotype highly available for further processing. Evidence for this step in the present study is the link from group membership to trait inference, and many other studies similarly have demonstrated that people have associative links in memory between various groups and traits or behaviors (Bodenhausen, 1988; Gardiner & Taylor, 1968).

2. The other available information is processed in a manner that is potentially influenced by the available stereotypic traits. The perceiver may test hypotheses about the target or interpret new information in terms of the stereotype categories, typically in a confirmatory manner (Rothbart, 1981; Snyder, 1981). Often, other information that is *inconsistent* with the stereotype is given extra attention in the form of attributional processing (e.g., in order to account for events that are unexpected). What is "expected" may well differ across persons, depending upon how strongly they adhere to the stereotype (operationalized in this study by individual differences in relevant measures of prejudice). Evidence for this component of the process was observed with subjects tending to recall more information about targets that were stereotype-inconsistent. The effects of the individual differences in prejudice suggest that what is "inconsistent" with the stereotype differs by level of this variable.

3. Criteria are then set for the decision to be made. That the criteria are not fixed in advance for a given type of decision may be a novel assumption, but appears to be helpful in accounting for a range of experimental results. The results obtained by Darley and Gross (1983) can be interpreted

as showing that exposure to background information about a child's socioeconomic status biases the perceiver to use as a criterion the child's *average* performance versus *best* performance across a set of tasks. One aspect of a criterion for decision-making involves the threshold level of subjective confidence that one will require to make the decision. People may require a high level of confidence that a candidate from a minority group will perform acceptably before deciding to hire them. In the current study, different levels of confidence in making the decision may have existed and this was indexed by the greater amount of additional information that was requested for both the female and black targets compared to white males.

4. Finally, the decision is made, but not solely on the basis of cognitively comparing the given and inferred information about the target to the criterion. More personal considerations related to the perceiver's own identity may also enter at this stage, particularly when the target's group membership is salient (Taylor, Fiske, Etcoff & Ruderman, 1978). The perceiver may ask, in effect, "Will I look bad—to myself or others—if I make this decision?" Considerations related to establishing or maintaining a valued identity (e.g., as an unprejudiced person) have been shown to influence a wide variety of behaviors (Alexander & Lauderdale, 1977; Burke & Reitzes, 1981; Chassin, Presson, Sherman, Corty & Olshavsky, 1981). "The central argument is that individuals are motivated to formulate plans and achieve levels of performance that reinforce, support, or confirm their identities" (Burke & Reitzes, 1981, p. 84).

We conclude that such identity-related considerations were operating in this study, leading to decisions that favored the minority candidates even if their other characteristics would have lead to rejection. In the gender case we found that only the photograph itself influenced the hiring decision. The traits assigned to the target, liking, expected success, nor any other variable influenced this decision. In the race case, group membership itself influenced the hiring decision, although the assigned traits also had an impact on this judgment. Again, however, liking of the target, perceived standing on the stereotype-irrelevant traits, or even expectations of success in the program all failed to influence the hiring decision. Such "reverse discrimination" effects favoring minority candidates have been previously reported (Kryger & Shikiar, 1978; Scheier, Carver, Schultz, Glass & Katz, 1978), although we were able to also demonstrate that stereotypes continue to guide information processing and that such reverse effects are likely to occur at the final decision stage.

We are emphatically *not* suggesting that this type of effect is an "artifact" of the particular design employed in this study, or even of laboratory studies of stereotyping in general. Further research is needed to identify characteristics of the choice situation that increase the salience of identity con-

cerns. It may be that decisions that will be inspected by others are particularly susceptible to identity-based effects. It might also be that whenever a judge evaluates several targets who differ on race and/or gender this makes affirmative action beliefs salient, which in turn actually drives decision-making. Data from the present study cannot inform us whether such additional considerations are consciously and strategically brought into the decision, or whether they enter automatically without conscious awareness. Several studies (Carver, Glass & Katz, 1976, cited by Katz & Glass, 1979) using the "bogus pipeline" technique found that subjects' evaluations of a black target were more negative when the subjects falsely believed that their physiological reactions were being monitored and would reveal their "true" underlying attitude. This suggests that people are aware of their negative reactions to minority group members, in at least some cases, and consciously choose not to act on it in order to maintain a valued identity as unprejudiced.

CONCLUSIONS

Our results point to two main conclusions. First, stereotype-based processes operate at several stages of impression formation and decision-making. Stereotypes influence the initial impression of the target person by leading directly to inferences of stereotype-consistent traits. Our results also suggest that stereotypes may have an impact by shaping the criteria used to reach decisions. With minority candidates, more confidence may be desired in order to make a decision, leading to solicitation of additional information. Targets who possess some stereotype-inconsistent attributes do seem to receive greater attention, although at least in the case of gender such information does not directly influence decision-making. Finally, to the extent that group membership is salient to subjects, and they value an "unprejudiced" social identity, the final decision may be based on the target's group membership, quite independent of any information-based or liking-based impression about the specific target person.

Individual differences in attitudes toward feminism and racism have only minor effects on the stereotyping process as a whole. The trait and race/gender manipulations did exert some differential effects on the information seeking and recall measures depending upon the subjects' own level of prejudice. However, the pattern of increased recall of stereotype-inconsistent relative to stereotype-consistent information, which is suggestive of stereotype-guided processing was no different for high versus low prejudice subjects. This is consistent with earlier studies that have found little relationship between the cognitive processes involved in stereotyping and individual differences in intergroup attitudes (Branscombe, Deaux & Lerner, 1985; Taylor & Falcone,

1982). Nevertheless, the need to dichotomize this variable because of the within subject factor in the design, clearly reduced our power to detect such effects. Hence, some caution in drawing conclusions regarding the role of individual differences in the stereotyping process is warranted.

The results of this study and the model presented demonstrate the potential for cognitive views of impression formation and person perception to incorporate stereotype effects. The processes involved in stereotyping different groups show substantial communality, despite differences in the stereotype contents, and the effects appear to occur from the beginning of the information processing sequence to the final judgment stage. The potential for applying the powerful conceptual tools from the social cognition literature to the issue of stereotyping is, we hope, illustrated but surely not exhausted by the above model.

REFERENCES

- Alexander, C. N., & Lauderdale, P. (1977). Situated identities and social influence. *Sociometry*, *40*, 225-233.
- Anderson, N. (1968). Likableness ratings of 555 personality-trait words. *Journal of Personality and Social Psychology*, *9*, 272-279.
- Bem, S. L. (1974). The measurement of psychological androgyny. *Journal of Consulting and Clinical Psychology*, *42*, 155-162.
- Bodenhausen, G. V. (1988). Stereotypic biases in social decision making and memory: Testing process models of stereotype use. *Journal of Personality and Social Psychology*, *55*, 726-737.
- Bodenhausen, G. V., & Lichtenstein, M. (1987). Social stereotypes and information processing strategies: The impact of task complexity. *Journal of Personality and Social Psychology*, *52*, 871-880.
- Branscombe, N. R., Deaux, K., & Lerner, M. S. (1985). Individual differences and the influence of context on categorization and prejudice. *Representative Research in Social Psychology*, *15*, 25-35.
- Brigham, J. C. (1971). Ethnic stereotypes. *Psychological Bulletin*, *76*, 15-38.
- Burke, P. J., & Reitzes, D. C. (1981). The link between identity and role performance. *Social Psychology Quarterly*, *44*, 83-92.
- Burnstein, E., & Schul, Y. (1982). The informational basis of social judgments: Operations in forming an impression of another person. *Journal of Experimental Social Psychology*, *18*, 217-234.
- Burnstein, P. (1979). Public opinion, demonstrations, and the passage of antidiscrimination legislation. *Public Opinion Quarterly*, *43*, 157-172.
- Carver, C. S., Glass, D. C., & Katz, I. (1976). *Favorable evaluations of blacks and the handicapped: Positive prejudice, unconscious denial or social desirability*. Unpublished manuscript, University of Texas at Austin.
- Chassin, L., Presson, C. C., Sherman, S. J., Corty, E., & Olshavsky, R. W. (1981). Self-images and cigarette smoking in adolescence. *Personality and Social Psychology Bulletin*, *7*, 670-676.
- Craik, F. I. M., & Lockhart, R. S. (1972). Levels of processing: A framework for memory research. *Journal of Verbal Learning and Verbal Behavior*, *11*, 671-684.
- Darley, J. M., & Gross, P. H. (1983). A hypothesis-confirming bias in labeling effects. *Journal of Personality and Social Psychology*, *44*, 20-33.

- Deaux, K., & Lewis, L. L. (1983). Components of gender stereotypes. *Psychological Documents, 13*, (M.S. No. 2583).
- Devine, P. G. (1989). Automatic and controlled processes in prejudice: The role of stereotypes and personal beliefs. In A. R. Pratkanis, S. J. Breckler, & A. G. Greenwald (Eds.), *Attitude structure and function*. Hillsdale, NJ: Lawrence Erlbaum.
- Gardiner, R. C., & Taylor, D. M. (1968). Ethnic stereotypes. Their effects on person perception. *Canadian Journal of Psychology, 22*, 267-276.
- Grant, P. R., & Holmes, J. G. (1981). The integration of implicit personality theory schemas and stereotype images. *Social Psychology Quarterly, 44*, 107-115.
- Hastie, R. (1981). Schematic principles in human memory. In E. T. Higgins, C. P. Herman, & M. P. Zanna (Eds.), *Social cognition: The Ontario symposium*, Vol. 1. Hillsdale, NJ: Lawrence Erlbaum.
- Higgins, E. T., Rholes, W. S., & Jones, C. R. (1977). Category accessibility and impression formation. *Journal of Experimental Social Psychology, 13*, 141-154.
- Katz, I., & Glass, D. C. (1979). An ambivalence-amplification theory of behavior toward the stigmatized. In W. G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations*. Monterey, CA: Brooks/Cole.
- Kinder, D. R., & Sears, D. O. (1981). Prejudice and politics: Symbolic racism versus racial threats to the good life. *Journal of Personality and Social Psychology, 40*, 414-431.
- Kryger, B. R., & Shikiar, R. (1978). Sexual discrimination in the use of letters of recommendation: A case of reverse discrimination. *Journal of Applied Psychology, 63*, 309-314.
- Locksley, A., Hepburn, C., & Ortiz, V. (1982). Social stereotype and judgments of individuals: An instance of the base-rate fallacy. *Journal of Experimental Social Psychology, 18*, 23-42.
- McConahay, J. B., & Hough, J. C. (1976). Symbolic racism. *Journal of Social Issues, 32*, 23-45.
- Rothbart, M. (1981). Memory processes and social beliefs. In D. L. Hamilton (Ed.), *Cognitive processes in stereotyping and intergroup behavior*. Hillsdale, NJ: Lawrence Erlbaum.
- Scheier, M. F., Carver, C. S., Schultz, R., Glass, D. C., & Katz, I. (1978). Sympathy, self-consciousness and reactions to the stigmatized. *Journal of Personality and Social Psychology, 38*, 270-282.
- Smith, E. R. (1984). Model of social inference processes. *Psychological Review, 91*, 392-413.
- Smith, E. R., & Branscombe, N. R. (1985). *Stereotype traits can be processed automatically*. Unpublished manuscript, Purdue University.
- Smith, E. R., Ferree, M. M., & Miller, F. D. (1975). A short scale of attitudes toward feminism. *Representative Research in Social Psychology, 6*, 51-56.
- Smith, E. R., & Kluegel, J. R. (1984). Beliefs and attitudes about women's opportunity: Comparisons with beliefs about blacks and a general perspective. *Social Psychology Quarterly, 47*, 81-95.
- Snyder, M. (1981). On the self-perpetuating nature of social stereotypes. In D. L. Hamilton (Ed.), *Cognitive processes in stereotyping and intergroup behavior*. Hillsdale, NJ: Lawrence Erlbaum.
- Taylor, S. E., & Falcone, H. (1982). Cognitive bases of stereotyping: The relationship between categorization and prejudice. *Personality and Social Psychology Bulletin, 8*, 426-432.
- Taylor, S. E., Fiske, S. T., Etcoff, N., & Ruderman, A. (1978). The categorical bases of person memory and stereotyping. *Journal of Personality and Social Psychology, 36*, 778-793.
- Taylor, M. S., & Ilgen, D. R. (1981). Sex discrimination against women in initial placement decisions: A laboratory investigation. *Academy of Management Journal, 24*, 859-865.
- Terborg, J. R. (1977). Women in management: A research review. *Journal of Applied Psychology, 62*, 647-664.
- Wyer, R. S., & Srull, T. K. (1980). The processing of social stimulus information: A conceptual integration. In R. Hastie, T. M. Ostrom, E. B. Ebbesen, R. S. Wyer, D. L. Hamilton, & D. E. Carlston (Eds.), *Person memory: The cognitive basis of social perception*. Hillsdale, NJ: Lawrence Erlbaum.