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## Stereotypes as elaborative mechanisms: The influence of fit and perceived validity

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Stereotypes as elaborative mechanisms: The influence of fit and perceived validity

by

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A thesis submitted to the graduate faculty  
in partial fulfillment of the requirements for the degree of  
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## ABSTRACT

This research examined the predictions of two models of stereotyping, the Continuum Model and the Stereotype Elaboration Model. The process of stereotyping was investigated under conditions of high and low attention, and in the context of good and poor fit targets. The results did not support either model, and indicated that high attention perceivers engaged in more stereotyping than low attention perceivers, regardless of the target's fit with a stereotype.

## INTRODUCTION

Stereotypes are generalized beliefs about the characteristics or attributes of members belonging to social groups. Stereotyping is the process of applying one's generalized beliefs to individual members of social groups in order to form an impression. Stereotyping can result from a variety of causes, such as prejudicial feelings toward social groups, in-group preferences, and limited cognitive resources (Fiske & Neuberg, 1990; Gilbert & Hixon, 1991; Linville, 1982; Linville & Jones, 1980; Secord, 1959; Wilder & Shapiro, 1991).

A prevailing perspective in the stereotyping literature is that stereotypes serve to elaborate impressions of individual targets when perceivers' cognitive resources are limited. According to this perspective, stereotypes are time- and resource-saving devices that perceivers employ when they are under cognitive load. Other perspectives, however, argue that limited cognitive resources do not drive stereotyping. For example, recent empirical work has suggested that the relationship between cognitive load and stereotyping partly depends on how valid a stereotype appears for the particular target being judged (Madon, Guyll, Hilbert, Kyriakatos, & Vogel, 2002; Nolan, Haslem, Spears, & Oakes, 1999; Reynolds & Oakes, 2000; Spears & Haslam, 1997). These differing perspectives are reflected in two models of stereotyping: the continuum model of impression formation (CM; Fiske & Neuberg, 1990) and the stereotype elaboration model (SEM), a new model of stereotyping. This paper is organized into five sections. First, it describes the continuum model and stereotype elaboration model, followed by a delineation of the theoretical differences between the two models. Next, a description of the study's method and analyses are given, concluding with a discussion of the results.

## Models of Stereotyping

The idea that perceivers use stereotypes to conserve cognitive resources reflects the cognitive efficiency perspective. This perspective proposes that stereotypes are employed in impression formation when the perceiver does not have the time, cognitive resources, or motivation to thoroughly process a target's personal or individuating information. Thus, stereotypes are thought to provide more efficient impressions: a target is perceived as belonging to a social group, and the stereotype enables perceivers to churn out an impression of that target with minimal cognitive effort (Bodenhausen, 1990; Brewer, 1988; Fiske & Neuberg, 1990; Fiske, Lin, & Neuberg, 1999; Fiske & Taylor, 1991). The cognitive efficiency perspective is the basis of the continuum model, which is the most prominent social cognitive model of impression formation (Fiske & Neuberg, 1990).

### *Continuum Model*

The continuum model posits that impression formation occurs along a continuum. The process of stereotyping (i.e., category-based impression formation) lies at one end of the continuum, whereas the process of individuation (i.e., attribute-based impression formation) lies at the other end of the continuum (Fiske & Neuberg, 1990). The model proposes that perceivers first strive to form an impression using category-based processing before attempting attribute-based processing. As impression formation progresses along the continuum, impressions are increasingly more individuated such that they are more strongly based on a target's individuating information and less strongly based on the stereotype associated with a target's social group membership (Figure 1). The CM proposes four stages in the impression formation process, each of which is mediated by the amount of attention the perceiver devotes to a target's individuating information. According to the model,

therefore, attention is necessary for the perceiver to move beyond the efficiency of stereotyping to the more involved process of individuation. This premise echoes the cognitive economy perspective: perceivers rely on stereotypes to form fast, easy impressions.

### *Initial Categorization*

The first stage of the model, referred to as *Initial Categorization*, occurs when a target belonging to a social group is observed. The perceiver automatically, and often without conscious thought, categorizes the target as a member of that category. If the target is not of further relevance to the perceiver, the impression formation process stops, and the perceiver relies on the stereotype associated with the target's social group to form an impression. However, if the target is relevant to the perceiver, additional attention will be devoted to the target's individuating information, thus shifting the perceiver's impression formation processing to the next stage of the continuum.

### *Confirmatory Categorization*

In the *Confirmatory Categorization* stage, the perceiver attends to the target's individuating information in an effort to match the target to the initial category. Specifically, the perceiver examines the target's individuating information to determine how consistent or inconsistent it is with the stereotype associated with the initial category. If the target's individuating information is deemed consistent with the category, impression formation processing of the information stops, and the perceiver's impression is based on the stereotype(s) related to the initial category. If the target's individuating information is perceived as inconsistent with the initial category, the perceiver moves further toward the individuating end of the continuum, and begins the process of *Recategorization*.



### *Recategorization*

Recategorization refers to the perceiver's attempt to place the target in a sub-category or subtype of the original category, or a new category that sufficiently fits the majority of the target's individuating information. For example, a perceiver who encounters an elderly woman who enjoys water skiing may attempt to recategorize the elderly target because she does not appear to fit into the typical elderly category. Thus, the perceiver may subtype the target as an active older woman, rather than categorizing her into the more general category of elderly woman. When the perceiver identifies an adequate match between the target's individuating information and a sub- or new category, the processing ceases, and the impression is based on the stereotype(s) associated with the sub- or new category. If an adequate match is not found, the perceiver moves into the final stage of the continuum,

### *Piecemeal Integration.*

#### *Piecemeal Integration*

Piecemeal Integration is the most individuating stage of the continuum. Here, the perceiver incorporates each piece of the target's individuating information, including group membership, into an overall impression. The target's group membership is considered a target attribute, and is combined with all other attributes to form an impression that is based entirely on the target's individuating information.

#### *The Role of Attention*

As stated earlier, and as illustrated by the stages of the model, attention is an important determinant of the impression formation process. Attention to the target's individuating information drives progression through the stages of the model. The model posits that the more attention the perceiver devotes to the target's individuating information,

the more likely the perceiver's impression will be based on the target's individuating information rather than the stereotype associated with the target's category. Thus, the CM proposes that more attention to a target's individuating information will result in greater individuation, whereas less attention to a target's individuating information will result in greater stereotyping.

### *Situational and Motivational Variables*

The CM posits that the amount of attention perceivers allocate to a target's individuating information depends on a variety of situational and motivational variables. These variables affect how much attention perceivers devote to the target's individuating information, which in turn affects the extent to which an impression will be based on individuating information or a stereotype. Consistent with this prediction, research has found that situational and motivational variables affect perceivers' impression formation goals, and that these goals affect how much attention perceivers direct to a target's information (Hilton & Darley, 1991; Neuberg, 1994; Neuberg & Fiske, 1987).

For example, situational variables such as time pressure and cognitive load are thought to decrease the extent to which perceivers can direct attention to a target's individuating information. Research manipulating time pressure has demonstrated that time-pressured perceivers tended to rely on stereotypes more than non-pressured perceivers during impression formation, presumably because perceivers under time pressure could not attend closely to the target's individuating information (e.g., Dijker & Koomen, 1996; Heaton & Kruglanski, 1991; Kruglanski & Freund, 1983; Pratto & Bargh, 1991). Likewise, under conditions of cognitive load, perceivers are more likely to fall back on stereotypes to form an

impression because of decreased attention to a target's individuating information (e.g., Gilbert & Hixon, 1991; Pendry, 1998; Pendry & Macrae, 1994; Pendry & Macrae, 1999).

Conversely, situational and motivational variables such as outcome dependence and accuracy motivation are thought to increase the amount of attention perceivers allocate to a target's individuating information. Outcome dependent perceivers are assumed to be more motivated to form an accurate impression than outcome independent perceivers as the dependent perceivers' outcomes are joined with those of the target. For example, an outcome dependent perceiver may be motivated to accurately judge a teammate, so as to better predict their joint outcomes. Consistent with this, research manipulating outcome dependence has illustrated that dependent perceivers are more motivated than independent perceivers to attend closely to a target's individuating information, resulting in a more individuated (less stereotypical) impression (e.g., Erber & Fiske, 1984; Neuberg & Fiske, 1987; Pendry & Macrae, 1994). Likewise, research that has directly manipulated accuracy motivation has shown that motivated perceivers attended more closely to the target's individuating information than non-motivated perceivers in order to make an accurate (i.e., not stereotypic) judgement (e.g., Bodenhausen, 1990; Fiske & Neuberg, 1990; Fiske et al., 1999; Neuberg, 1989; Neuberg & Fiske, 1987).

Much of the empirical support for the cognitive efficiency perspective and the CM has come from studies that have manipulated perceivers' attention through situational and motivational variables such as those described above. The findings from these studies generally indicate that stereotyping is stronger the less attention perceivers devote to a target's information (because of situational or motivational variables). This pattern of results can clearly be interpreted as consistent with the cognitive efficiency perspective and the CM.

However, the vast majority of these studies have employed targets with individuating information that did not clearly fit a stereotype's content, such as targets with ambiguous, irrelevant, or mixed individuating information (e.g., Bodenhausen, 1990; Erber & Fiske, 1984; Neuberg & Fiske, 1987; Pendry & Macrae, 1994). Moreover, the CM does not explicitly state how situational and motivational moderators affect stereotyping in the context of stereotype-consistent targets. For example, the CM predicts that stereotyping is more likely when targets display stereotype-consistent individuating information and less likely when attentional resources are high, but it does not specify how these factors interact to influence stereotyping - that is, how attention moderates stereotyping when targets display stereotype-consistent information. The empirical literature also does not provide a strong basis on which to draw a conclusion about this issue. Only a few studies to date have examined the process of stereotyping in the context of situational and motivational variables using targets with stereotypic individuating information, and these results have been highly mixed. For example, one study (Neuberg & Fiske 1987, Experiment 2) reported that high attention did not affect stereotyping for targets that fit a stereotype, whereas others have found that high attention increased stereotyping for targets that fit a stereotype (Nolan, Haslam, Spears, & Oakes, 1999, Experiment 1; Pratto & Bargh, 1991, female target).

The inconsistency of these results highlights the need for research to examine the moderating effect of attention in the context of stereotype-consistent targets. The current study addresses this issue by drawing on the framework of a new model of stereotyping, the SEM.

### *Stereotype Elaboration Model*

Like the CM, the SEM also proposes that perceivers engage in stereotyping as a way to elaborate their impressions. However, unlike the CM, the SEM does not propose that perceivers engage in this process as a way to conserve resources. Rather, it proposes that one condition under which perceivers engage in stereotyping is when they believe that a stereotype appears valid for the particular target who they are judging. The current study is designed to examine this prediction of the model.

#### *Stereotype Validity*

According to the SEM, the more valid a perceiver believes a stereotype is for a particular target, the more likely the perceiver will engage in stereotyping. Although the model proposes that a variety of factors may influence stereotyping by affecting the perceived validity of a stereotype, two key factors are the extent to which a target's individuating information matches a stereotype's content, and the extent to which perceivers can attend to a target's individuating information.

#### *Fit*

The extent to which a target's individuating information is consistent with the content of a stereotype is referred to as fit. According to the SEM, the fit between a target's individuating information and a stereotype affects the perceived validity of the stereotype. If the target's individuating information is not perceived as similar to traits that are considered stereotypical of the target's group membership, then the fit is perceived as poor, and the perceiver is less likely to perceive the stereotype as valid for this particular target. As the perceived validity of the stereotype decreases, stereotyping should be reduced and the perceiver's impression should be based more heavily on the target's individuating

information than on a stereotype. In contrast, if the target's individuating information is perceived as similar to traits that are considered stereotypical of the target's group membership, then the fit is perceived as good, and the perceiver is more likely to perceive the stereotype as valid for this particular target. Stereotyping should be increased as a result. Thus, if the perceiver believes the target's individuating information fits the stereotype, the perceived validity of the stereotype increases, which then leads the perceiver to supplement the impression with traits included in the stereotype. According to the SEM, therefore, the fit between the target's individuating information and the stereotype's content influences the perceived validity of the stereotype, which then affects the extent to which the stereotype will be used when forming an impression of that target.

### *Attention*

The SEM further proposes that the extent to which a target is perceived as matching a stereotype may partly depend on perceivers' ability to attend to the target's individuating information (Nolan et al., 1999; Spears & Haslam, 1997). Specifically, low attention may interfere with perceivers' ability to assess the match between a particular target's individuating information and a stereotype's content. As a result of this interference, perceptions of the match may regress to the mean (Fiedler, 1991). For example, a perceiver may judge the match between a stereotype and a stereotypic target to be better under conditions of high attention, and to be worse under conditions of low attention (Nolan et al., 1999). According to the model, therefore, (a) increasing perceivers' attention to stereotypic individuating information via motivational (e.g., accuracy motivation) or situational (e.g., time pressure) factors increases stereotyping by virtue of increasing the perceived validity of a stereotype, whereas (b) increasing perceivers' attention to counterstereotypic individuating

information via motivational or situational factors decreases stereotyping by virtue of reducing the perceived validity of a stereotype (see Figure 2).

### *Theoretical Differences Between the Models*

Both the CM and the SEM propose that stereotypes can be used to elaborate impressions. However, the main theoretical difference between these models is the underlying process that is hypothesized to be responsible for a perceiver's reliance on a stereotype during impression formation. Whereas the CM posits that perceivers rely on stereotypes to form an impression when their cognitive resources are limited, the SEM posits that perceivers rely on stereotypes to form an impression when the perceiver believes the stereotype is particularly valid for the target being judged. In addition, the models make different predictions about the role of attention in the stereotyping process. Although both models identify attention as a determinant of stereotyping, the CM proposes that stereotyping is stronger when attention is low, whereas the SEM proposes that attention influences stereotyping differently depending on the fit between the target's individuating information and a stereotype's content. Specifically, stereotyping is predicted to be stronger when attention is high and fit is good, and weaker when attention is high and fit is poor.

The current study investigates the function of stereotypes by examining the effect that attention has on stereotyping in the context of a target that either fits or does not fit a stereotype. Thus, this study's purpose was to test the CM's prediction that attention attenuates stereotyping and the SEM's prediction that fit and the perceived validity of a stereotype interact to influence stereotyping.

### *Hypotheses*

This study will test the predictions generated by the CM and the SEM by examining how attention affects stereotyping in the context of targets whose individuating information either closely matches or does not closely match the content of a stereotype. Three hypotheses will be tested. The first hypothesis is that a target's social group membership will bias impressions, such that stereotyping will be stronger for a target labeled as a member of a social group than for a target who is not a group member. This prediction is based on the notion that a target labeled as a social group member will automatically be viewed as being more consistent with the stereotype associated with that group than will a target who is not a group member. This prediction is consistent with both the CM and the SEM.

The second hypothesis, which is derived from the CM, is that high attention reduces stereotyping because perceivers have ample cognitive resources to process the target's individuating information. This pattern is expected regardless of a target's fit with a stereotype. Competing with this prediction is the third hypothesis, derived from the SEM, according to which attention influences stereotyping differently depending on a target's fit with a stereotype. Specifically, the SEM predicts that high attention reduces stereotyping when a target's individuating information does not closely fit a stereotype's content, but increases stereotyping when a target's individuating information does fit a stereotype's content (Figure 3). This relationship is expected because high attention perceivers, more so than low attention perceivers, have sufficient cognitive resources to accurately assess how well a target does or does not fit a stereotype, thereby influencing how valid the stereotype appears for the particular target they are judging.



## METHOD

### *Participants*

Participants were 193 heterosexual undergraduates (145 females, 48 males) in psychology courses who participated in exchange for extra class credit. There were 174 Caucasians, 7 African Americans, 5 Asians, 1 Latina, and 6 participants who classified their ethnicity as “other”. Participants’ age ranged from 18 to 47, with a mean age of 19.5 ( $SD = 2.87$ ).

### *Design and Manipulations*

The materials and procedures for this study were adapted from similar studies previously conducted in this line of inquiry. Participants were randomly assigned to a 2 (label: father vs. gay male) X 2 (attention: low vs. high) X 2 (fit: good vs. poor) between-subjects factorial design. Participants read a hand-written description about a target who labeled himself as either a gay male ( $n = 87$ ) or as having recently had a baby with his wife ( $n = 106$ ), subsequently referred to as the father target. The father label was used to minimize the likelihood that participants would assume the target was gay when the description fit the content of the gay male stereotype. Participants read the description while simultaneously listening to an 8-digit number recited on a tape recorder. Attention was manipulated by instructing high attention participants ( $n = 90$ ) to attend more closely to the description, and instructing low attention participants ( $n = 103$ ) to attend more closely to the number. The fit between the target’s description and the gay male stereotype was manipulated by the inclusion of traits that were consistent ( $n = 98$ ) or inconsistent ( $n = 95$ ) with the gay male stereotype. These traits were selected on the basis of previous work (Madon, 1997). The content of the descriptions was as follows:

*Good fit.* I suppose the most important thing to know about me is that [*my wife and I recently had a baby or I am gay*]. That has had a big impact on my life. My experience as a college student is not typical because I am an older student. I attended a different college for a couple of years and then took some time off to work. I just returned to school this semester. So far, it's been a good experience. I would describe myself as a warm-hearted person. For example, I am the kind of person who easily gets sentimental about things. I have always been an artistic person and I enjoy painting with watercolors.

*Poor fit.* I suppose the most important thing to know about me is that [*my wife and I recently had a baby or I am gay*]. That has had a big impact on my life. My experience as a college student is not typical because I am an older student. I attended a different college for a couple of years and then took some time off to work. I just returned to school this semester. So far, it's been a good experience. I would describe myself as a traditional person. I am the kind of person who does not easily get emotional about things. I have always been an outdoors person and I like to camp and hunt deer.

### *Experimental Procedures and Materials*

Upon arrival at the laboratory, participants provided informed consent and completed a short demographic questionnaire. Following the completion of these materials, the experimenter explained that the purpose of the study was to assess how well people can perform two tasks simultaneously. Next, the experimenter gave each participant 6 folders that contained the experimental materials (see Appendix A). Participants were instructed not to open the folders until told to do so, and to work through them in the order in which they were presented. The experimenter informed participants that they would have 30 seconds to listen to a tape recording of an 8-digit number while they read a description that was contained inside the first folder. Participants were directed to pay attention to both the number and the description. However, participants in the low attention condition were told that their primary task was to remember the number and that they should attend more closely to the number. Participants in the high attention condition were told that the description was their primary task and that they should attend more closely to the description.

After these instructions, the experimenter played a tape recording, which began with a short beep, followed by the recitation of the 8-digit number in a male voice. The number was repeated three times during the 30 seconds, and was followed by another short beep to signal the end of the recording.

Next, the experimenter instructed participants to return the description to the first folder, set it aside, and not refer to it again. Participants were then told to work through the remaining folders in order, not referring back to completed folders. The second and third folders contained memory tests for the 8-digit number and for the description in counterbalanced order. Participants were instructed to write down as much of the number as they could, and to recall as many of the same words that were contained in the description as possible. In addition, participants indicated the extent to which they attended to the person's description and to the number on a 7-point scale with endpoints 1 (*very little*) and 7 (*a lot*). The three final folders contained questionnaires. The first questionnaire assessed participants' impressions of the target by having them rate him on a series of 15 attributes that were selected on the basis of previous research (Madon, 1997). Specifically, participants evaluated the target on each attribute by indicating how well they believed that trait described the target. The scale for each attribute ranged from 1 (*not at all*) to 7 (*very*). Of the 15 traits, ten were related to the gay male stereotype, including nine that were consistent with the stereotype (i.e., understanding, open-minded, different, affectionate, liberal, sensitive, individualistic, feminine, and fashionable), and one that was inconsistent with the stereotype (i.e., old-fashioned). The coefficient alpha for these 10 traits was .75 for the full sample, .54 for participants assigned to the father label condition, and .79 for participants assigned to the gay label condition. The five remaining traits were fillers that were unrelated to the gay male

stereotype (absent-minded, dependable, snobbish, reserved, and stable) (Madon, 1997).

Participants' ratings of these five unrelated traits were not used in any of the analyses and are not discussed further.

The second questionnaire assessed participants' suspicions about the experiment. They were asked what they thought the experiment was about, what they knew about the experiment prior to participating, if they believed they were misled, and how they think they were misled.

The final questionnaire served as a manipulation check. To ensure that participants noticed the target's label, they were given a checklist with 10 social groups. Two of the choices were "Gay" and "Recently had a baby with his wife", and there were 8 fillers such as "Animal Lover," "Bachelor," "Dentist," and "Artist." Participants were instructed to check those words that the target used to describe himself. The subsequent questions served as manipulation checks of fit and stereotype validity. The first two questions assessed fit by instructing participants to indicate how similar they believed the target was to gay men in general, and to fathers in general on a 7-point scale with endpoints 1 (*not at all similar*) to 7 (*very similar*). The next two questions assessed stereotype validity by instructing participants to indicate the extent to which their beliefs about gay men helped them form an impression of the target and how confident they were that their beliefs about gay men helped them to accurately judge the target on a 7-point scale with endpoints 1 (*not at all*) to 7 (*extremely*). The final question assessed the participant's own sexual orientation on a 7-point scale with endpoints 1 (*heterosexual*) to 7 (*gay*). It was necessary to know participants' sexual orientation because of the possibility that gay participants may judge a gay target differently than heterosexual participants.

### *Dependent Variable*

The dependent variable was participants' impression of the target. The impression was calculated by averaging participants' ratings of the target on the 10 stereotype-relevant traits. The one counterstereotypical trait (i.e., "old-fashioned") was reverse-scored prior to calculating the average. Higher values reflected an impression that was more consistent with the gay male stereotype.

### *Operationalization of Stereotyping*

Stereotyping was operationally defined as the effect of the target's label on participants' impression of the target. If the gay target was judged to be more consistent with the gay male stereotype than the father target with the same traits, it suggests that stereotyping has occurred. If the label of the target did not affect participants' impressions (i.e., the gay and father targets were judged similarly), it suggests that stereotyping has not occurred, and participants have instead relied upon the individuating information of the target to make their impressions.

## RESULTS

### *Manipulation Checks*

*Label.* A frequency analysis indicated that 24 participants did not correctly indicate the label on either the manipulation check or the free recall item. Therefore, the analyses were conducted twice, once with and once without these participants.<sup>1</sup> The results reported below were generated from the analyses including all participants.

*Attention.* Two independent samples t-tests investigated the effectiveness of the attention manipulation by assessing if there were differences in the number of target traits and number of digits that participants in the high and low attention conditions correctly recalled. As expected, high attention participants (who were instructed to attend more closely to the description) recalled more target traits ( $t_{(191)} = 5.74, p < .001$ ) and fewer digits ( $t_{(191)} = 5.09, p < .001$ ) than low attention participants (who were instructed to attend more closely to the 8-digit number). Two additional independent t-tests assessed if participants in the high and low attention conditions differ in their self-reports of how closely they attended to the description and to the 8-digit number. As expected, high attention participants reported paying closer attention to the description than low attention participants ( $t_{(191)} = 10.45, p < .001$ ), who in turn reported paying closer attention to the 8-digit number than high attention participants ( $t_{(191)} = 5.52, p < .001$ ).

*Fit.* A series of independent samples t-tests examined the effectiveness of the fit manipulation and the affect of fit on the perceived validity of the stereotype. The first t-test investigated whether there were differences in ratings of the target's similarity to gay men among participants in the good and poor fit conditions. It was expected that participants in the good fit condition, who read a description of a target with stereotypic gay traits, would

rate the target as more similar to gay men in general than would participants in the poor fit condition, who read a description of a target with counterstereotypic gay traits. Results indicated that participants in the good and poor fit conditions did not differ in their ratings of target similarity to gay men in general ( $t_{(191)} = 0.73, p = .47$ ), thereby suggesting that the fit manipulation had not been effective. Two additional independent samples t-tests examined how the fit manipulation affected the perceived validity of the stereotype by investigating whether good and poor fit participants differed in the extent to which their beliefs about gay men helped them to judge the target and their confidence that those beliefs helped them to form an accurate impression. The results indicated that good and poor fit participants did not differ in the degree to which they believed their beliefs about gay men helped to form an impression ( $t_{(191)} = 0.34, p = .74$ ), nor in their confidence that their beliefs about gay men helped them to accurately judge the target ( $t_{(191)} = 0.20, p = .84$ ). These results also suggest that the fit manipulation failed to have the desired effect.

### *Main Analysis*

Data were analyzed with a 2 x 2 x 2 (label x attention x fit) analysis of variance (ANOVA) in which the dependent variable was participants' impression of the target on the 10 stereotype-relevant traits. Table 1 displays the means. The results indicated significant main effects for the label,  $F(1, 185) = 66.80, p < .001$ , attention,  $F(1, 185) = 21.28, p < .001$ , and fit,  $F(1, 185) = 4.36, p = .04$ . There was also a significant two-way interaction between the label and attention,  $F(1, 185) = 9.22, p = .003$ . There were no other significant results, all  $F_s(1, 185) \leq 0.85, p_s \geq .359$ .

### *Continuum Model and Stereotype Elaboration Model Predictions*

Both the CM and the SEM predict that perceivers engage in stereotyping when forming impressions of others. The significant main effect of the label supports this hypothesis, as the gay target was rated as more consistent with the gay male stereotype ( $M = 4.99$ ) than the father target ( $M = 4.29$ ).

The CM predicts that stereotyping will be stronger when attention is low versus high. Results would support this prediction if the label significantly interacted with attention, such that differences in impressions between the father target and gay target are larger under low attention than high attention. Although a label x attention interaction did occur, an examination of the means revealed that the pattern was not consistent with the CM's prediction. Specifically, the differences in impressions between the father and the gay targets were larger under high attention ( $M_G = 5.31$  vs.  $M_F = 4.37$ ) than low attention ( $M_G = 4.67$  vs.  $M_F = 4.21$ ) (Figure 4).

The SEM predicts a three-way interaction between fit, label, and attention, such that the relationship between the label and attention vary across the levels of fit. Specifically, it was expected that the label would more strongly influence impressions when attention was high and fit was good, but less strongly influence impressions when attention was high and fit was poor. Results did not support this prediction, as the three-way interaction among the label, attention, and fit was not significant,  $F(1, 185) = 0.12, p = .73$  (Figure 5).



## DISCUSSION

The purpose of this study was to examine the underlying function of stereotypes by comparing the predictions of two models of stereotyping, the CM and the SEM. The process of stereotyping was explored in the context of low and high attention with targets whose individuating information either fit or did not fit a stereotype. The results indicated that high attention perceivers engaged in more stereotyping than low attention perceivers regardless of the target's fit with a stereotype. This pattern of results does not provide support for either model of stereotyping.

The CM purports that the function of stereotyping is to conserve cognitive resources. According to the model, therefore, stereotyping should be stronger when perceivers lack sufficient cognitive resources to attend closely to a target's individuating information. However, the results of this study did not follow that pattern. Low attention perceivers were not more likely to engage in stereotyping than high attention perceivers. The SEM proposes that the function of stereotyping is to elaborate impressions when a stereotype appears valid for the particular target being judged. Thus, the SEM predicts that attention affects stereotyping differently depending on the fit between the target and the stereotype. The results of this study also did not conform to the SEM's predictions, as high attention perceivers engaged in more stereotyping regardless of the target's fit with a stereotype.

### *Main Findings of the Current Study*

A main finding of this research was that a social group label influenced participants' impressions of a target. Specifically, participants judged the gay target as more consistent with the gay male stereotype than they judged the father target, despite the fact that the gay and father targets were described with identical individuating information. The tendency for

participants to use a target's social group membership as a basis of their impressions is consistent with a long line of research on stereotyping. Gender, race, and age, among other social groups, consistently influence perceivers' impressions of targets (for reviews, see Ashmore & DelBoca, 1981; Fiske, 1998; Hamilton, 1979). The tendency for a target's social group membership to bias perceivers' impressions has important social implications. Stereotypes may lead perceivers to form unjustifiably negative impressions of targets, which may in turn, undermine these targets' future outcomes. In addition, because stereotypes are often inaccurate when applied to individuals, perceivers who use stereotypes as the basis of their impressions increase the likelihood that they will develop inaccurate impressions, which could ultimately cause targets to confirm the stereotype via a self-fulfilling prophecy (Snyder, Tanke, & Berscheid, 1977). However, the main purpose of this research was not to demonstrate that stereotypes bias impressions, but rather to examine the underlying process responsible for that effect. This was addressed by testing competing predictions of the CM and the SEM. Because both models predict that a target's social group membership will bias impressions of a target, the label effect that emerged in this research does not distinguish between these models. As such, it does not provide insight into whether stereotyping reflects cognitive capacity limitations as the CM predicts, or perceivers' perceptions about a stereotype's validity as the SEM predicts.

A second major finding of this research was that fit influenced participants' impressions of the target such that participants judged a target whose individuating information fit a stereotype as more consistent with the stereotype than did participants who judged a target with individuating information that did not fit a stereotype. Both models predict that a good fit between a target's individuating information and the content of

stereotype can increase stereotyping. According to the CM, stereotyping is likely to occur for a good fit target because perceivers do not have to expend attentional resources to subtype or individuate the target in order to find a good category match. The SEM predicts that stereotyping is likely to occur for a good fit target when perceivers have the attentional resources to notice how well the target fits the stereotype. In such cases, the stereotype serves to elaborate perceivers' impressions, as it appears particularly valid for the target being judged. Thus, the SEM posits that fit will interact with attention and the target's label to influence the perceived validity of the stereotype, which in turn affects the extent to which perceivers employ stereotypes to form an impression. However, fit did not interact with any variables, suggesting that participants stereotyped good fit targets more than poor fit targets, regardless of the target's label or the amount of attention participants devoted to the target's individuating information. Because the target's fit influenced impressions seemingly independently from the label in this study suggests that participants may have had an implicit personality theory about what traits co-occur (e.g., Ashmore, 1981; Grant & Holmes, 1981; Secord & Berscheid, 1963). That is, participants may have believed that the traits on which they rated the target were particularly likely to be possessed by the good fit target and particularly unlikely to be possessed by the poor fit target, regardless of the target's label.

A third major finding of this research was that the target's label and attention interacted to influence participants' impressions. The label influenced the impressions of high attention participants more than it influenced the impressions of low attention participants. Although the CM predicts an interaction among the label and attention, the obtained pattern of results is not consistent with the CM. Specifically, the CM posits that stereotyping will more likely occur under conditions of low attention than high attention,

which is the opposite pattern than what was found in this study. The tendency for the label to influence impressions more strongly in the high attention condition is also not consistent with the SEM, which predicts that the relationship among the label and attention will vary across levels of fit.

The fourth main finding was that the SEM's prediction of a three-way interaction among the label, fit, and attention did not occur. This suggests that attention did not influence stereotyping differently depending on the fit between the target's individuating information and a stereotype. The results of this study indicated that stereotype was more likely to occur under conditions of high attention, rather than low attention, regardless of the target's fit with a stereotype.

One possible explanation for the lack of support for the SEM's prediction is that the model is incorrect. Perhaps a target's fit with a stereotype and the perceived validity of a stereotype are not as important determinants of stereotyping as the model purports, nor might they be affected by the extent to which perceivers attend to a target's individuating information. However, given that other research has demonstrated support for the SEM's contention that high attention increases stereotyping under conditions of a good fit (e.g., Nolan et al., 1999; Pratto & Bargh, 1991), it is premature to conclude that the SEM is incorrect on the basis of this study alone.

#### *Limitations of the Current Study*

One limitation of this research was the failure of the fit manipulation checks to demonstrate the effect of fit. Whereas participants' ratings of target similarity to gay men and the degree to which they believed their beliefs about gay men would help them to form an impression did not differ between participants in the good and poor fit conditions, there

was a significant main effect of fit. Thus, fit did influence participants' impressions.

Although these manipulation checks had been used successfully in previous research, they do not appear to have successfully measured the effectiveness of the manipulation in this study.

Another limitation of the current study was the manipulation of attention. Although the manipulation checks indicated that the attention manipulation was effective, the manipulation may not have been as strong as was needed to adequately test the study's hypotheses. For instance, even though high attention participants recalled significantly more target traits than low attention participants, the difference in means was slight. In addition, only half of the participants were able to recall even one of the three target traits. It might be that participants needed more than 30 seconds to process the target's individuating information, although the main effect of attention indicates that high and low attention participants did process the target's individuating information differently. Future research in this line of inquiry may benefit from allotting more time for participants to process a target's individuating information.

### *Conclusions*

The goal of the current study was to examine the underlying function of stereotypes in the context of targets whose individuating information either fit or did not fit a stereotype's content, and by doing so, to test the predictions of two models of stereotyping. Although the general pattern of results indicated that impressions were biased by a target's social group membership and the extent to which the target's individuating information fit a stereotype, the results did not provide support for either the CM or the SEM. Specifically, the data provided no evidence in support of the CM's prediction that low attention is more likely to lead to stereotyping than high attention. In fact, stereotyping was stronger for high

attention perceivers than for low attention perceivers. The data also did not support the SEM's prediction that attention moderates stereotyping differently depending on the target's fit with a stereotype. Thus, this study's finding that perceivers with ample cognitive resources were more likely to engage in stereotyping than were perceivers with limited cognitive resources does not fit with either model of stereotyping. Despite extensive literature indicating that high attention to a target's individuating information decreases stereotyping, the results of this study suggest that the process underlying that pattern requires further investigation.

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### Footnote

1. Analyses conducted excluding participants who did not recall the label yielded results that differed only in the strength of significant relationships. Specifically, when participants who missed the label were excluded from the analyses, the previously significant main effect of fit became marginally significant ( $p = .07$ ), as did the label x attention interaction ( $p = .055$ ). The pattern of means remained the same.

## APPENDIX A. STUDY MATERIALS

## INFORMED CONSENT DOCUMENT

Title of Study: Making Judgements of People  
Investigator: Sarah Hilbert

This is a research study. Please take your time in deciding if you would like to participate and feel free to ask questions at any time. The purpose of this study is to examine how well people can concentrate on two things at once. You are being invited to participate in this study because you are an ISU student. Your participation in this study is completely voluntary and you may refuse to participate or leave the study at any time. There will be no penalty to you if you decide to not participate in the study or leave the study early.

If you agree to participate in this study, your participation will last for less than 50 minutes. During the study you may expect the following study procedures to be followed. You will be asked to read a description that somebody wrote about themselves. After reading the description, you will be asked to judge the person's personality. You may skip any question that you do not wish to answer or that makes you feel uncomfortable.

There are no foreseeable risks at this time from participating in this study. If you decide to participate in this study, you will benefit by gaining firsthand experience and insight into the process of psychological research. It is also hoped that the information gained in this study will benefit society by providing valuable information about how people form impressions of others. You will be compensated for participating in this study by receiving 1 extra credit point in your psychology class for your participation.

Records identifying participants will be kept confidential. However, federal government regulatory agencies and the Institutional Review Board may inspect and/or copy your records for quality assurance and data analysis. These records may contain private information. To ensure confidentiality, you will be assigned a unique code that will be used on forms instead of your name, all of your responses will be combined with the responses of other participants, and only the investigator will have access to the study records, which will be kept in a locked filing cabinet. If the results are published, your identity will remain confidential.

For further information about the study, contact Sarah Hilbert (4-5850; [shilbert@iastate.edu](mailto:shilbert@iastate.edu)). If you have any questions about the rights of research subjects, please contact the Human Subjects Research Office, 2810 Beardshear Hall, (515) 294-4566; [meldrem@iastate.edu](mailto:meldrem@iastate.edu) or the Research Compliance Officer, Office of Research Compliance, 2810 Beardshear Hall, (515) 294-3115; [dament@iastate.edu](mailto:dament@iastate.edu)

\*\*\*\*\*

### SUBJECT SIGNATURE

Your signature indicates that you voluntarily agree to participate in this study, that the study has been explained to you, that you have been given the time to read the document and that your questions have been satisfactorily answered. You may request a copy of the informed consent form from the experimenter.

Subject's Name (printed) \_\_\_\_\_

\_\_\_\_\_  
(Subject's Signature)

\_\_\_\_\_  
(Date)

### INVESTIGATOR STATEMENT

I certify that the participant has been given adequate time to read and learn about the study and all of their questions have been answered. It is my opinion that the participant understands the purpose, risks, benefits and the procedures that will be followed in this study and has voluntarily agreed to participate.

\_\_\_\_\_  
(Signature of Person Obtaining  
Informed Consent)

\_\_\_\_\_  
(Date)

Participant ID: \_\_\_\_\_

### DEMOGRAPHIC QUESTIONNAIRE

Instructions: Please answer the following demographic questions about yourself.

- A. What is your gender?                      Female                      Male
- B. What is your age? 17    18    19    20    21    22    23    24    Other \_\_\_\_\_  
(please specify)
- C. What is your ethnicity/race?
1. Caucasian
  2. African American
  3. American Indian
  4. Indian
  5. Asian
  6. Latino/a
  7. Other (please specify: \_\_\_\_\_)

Participant ID: \_\_\_\_\_

1. In the space provided please write down the number that played on the tape recorder. If you cannot remember the full number please write down whatever you can remember.

\_\_\_\_\_

2. How much attention did you pay to the number?

1	2	3	4	5	6	7
very little						a lot





Participant ID: \_\_\_\_\_

**PERSONALITY JUDGEMENTS**

**Instructions:** Think about the person whose description you just read, then answer the following questions.

1. How **UNDERSTANDING** do you think this person is?

1	2	3	4	5	6	7
Not at all understanding						Very understanding

2. How **SNOBBISH** do you think this person is?

1	2	3	4	5	6	7
Not at all snobbish						Very snobbish

3. How **SENSITIVE** do you think this person is?

1	2	3	4	5	6	7
Not at all sensitive						Very sensitive

4. How **FASHIONABLE** do you think this person is?

1	2	3	4	5	6	7
Not at all fashionable						Very fashionable

5. How **RESERVED** do you think this person is?

1	2	3	4	5	6	7
Not at all reserved						Very reserved

6. How **DIFFERENT** do you think this person is?

1	2	3	4	5	6	7
Not at all different						Very different

7. How **STABLE** do you think this person is?

1	2	3	4	5	6	7
Not at all stable						Very stable

8. How **AFFECTIONATE** do you think this person is?

1	2	3	4	5	6	7
Not at all affectionate						Very affectionate

9. How **ABSENT-MINDED** do you think this person is?

1	2	3	4	5	6	7
Not at all absent-minded						Very absent-minded

10. How **LIBERAL** do you think this person is?

1	2	3	4	5	6	7
Not at all liberal						Very liberal

11. How **INDIVIDUALISTIC** do you think this person is?

1	2	3	4	5	6	7
Not at all individualistic						Very individualistic

12. How **OLD-FASHIONED** do you think this person is?

1	2	3	4	5	6	7
Not at all old-fashioned						Very old-fashioned

13. How **FEMININE** do you think this person is?

1	2	3	4	5	6	7
Not at all feminine						Very feminine

14. How **DEPENDABLE** do you think this person is?

1	2	3	4	5	6	7
Not at all dependable						Very dependable

15. How **OPEN-MINDED** do you think this person is?

1	2	3	4	5	6	7
Not at all open-minded						Very open-minded

Participant ID: \_\_\_\_\_

**Instructions:** Please answer the following questions in your own words. Although we hope that you will answer all of the questions, if some questions on this or the next survey make you uncomfortable, you may opt to leave them blank. Please provide your feedback by responding to the following questions.

1. In a sentence or two, please indicate what you believe this experiment was about.

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2. Do you believe you were misled in any way during this experiment? Yes No

3. If you believe you were misled, please describe how. If you do not believe you were misled, then please skip this question.

---



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4. How certain are you that this is how you were misled? If you do not believe you were misled then please skip this question.

1	2	3	4	5	6	7
not at all certain						very certain

5. Please indicate what you knew about this study prior to participating.

---



---

6. Have you ever participated in THIS study before? YES NO

7. Have you ever participated in a similar study? YES NO

8. If you have participated in a similar study, please briefly describe what you did in that study. Leave this item blank if you answered NO to the previous question. \_\_\_\_\_

---



---

Participant ID: \_\_\_\_\_

1. Think back to the person's handwritten description: Check off only those words that the person used to describe himself or herself.

- |   |  |
|---|--|
| <input type="checkbox"/> Animal Lover   | <input type="checkbox"/> Bachelor                          |
| <input type="checkbox"/> Student        | <input type="checkbox"/> Businessman                       |
| <input type="checkbox"/> Dentist        | <input type="checkbox"/> Artist                            |
| <input type="checkbox"/> Police Officer | <input type="checkbox"/> Political Activist                |
| <input type="checkbox"/> Gay            | <input type="checkbox"/> Recently had a baby with his wife |

People have beliefs about different social groups. Two groups about which people tend to hold strong beliefs are gay men and fathers (i.e., dads). The next several questions ask you the extent to which your beliefs about these social groups helped you to form your impressions of the person you read about.

2. How similar do you think the person you read about is to gay men in general?

- |                    |   |   |                  |   |   |              |
|--------------------|---|---|------------------|---|---|--------------|
| 1                  | 2 | 3 | 4                | 5 | 6 | 7            |
| not at all similar |   |   | somewhat similar |   |   | very similar |

3. How similar do you think the person you read about is to Dads in general?

- |                    |   |   |                  |   |   |              |
|--------------------|---|---|------------------|---|---|--------------|
| 1                  | 2 | 3 | 4                | 5 | 6 | 7            |
| not at all similar |   |   | somewhat similar |   |   | very similar |

4. To what extent did your beliefs about gay men help you form an impression of the person you read about?

- |            |          |          |            |             |      |           |
|------------|----------|----------|------------|-------------|------|-----------|
| 1          | 2        | 3        | 4          | 5           | 6    | 7         |
| not at all | slightly | somewhat | moderately | quite a bit | very | extremely |

5. How confident were you that your beliefs about gay men would help you to accurately judge the person you read about?

- |                      |                    |                    |                      |                       |                |                     |
|----------------------|--------------------|--------------------|----------------------|-----------------------|----------------|---------------------|
| 1                    | 2                  | 3                  | 4                    | 5                     | 6              | 7                   |
| not at all confident | slightly confident | somewhat confident | moderately confident | quite a bit confident | very confident | extremely confident |

6. To what extent are you heterosexual versus gay?

- |              |   |   |   |   |   |     |
|--------------|---|---|---|---|---|-----|
| 1            | 2 | 3 | 4 | 5 | 6 | 7   |
| heterosexual |   |   |   |   |   | gay |

### Debriefing Statement

Thank you for your participation. All of your responses are completely anonymous and will be combined with the responses of other participants. As you know, this study examined how people form impressions. The study also examines two additional issues: 1) Are people more likely to use a person's group membership to form their impressions depending on situational or motivational influences; and 2) Does the content of a person's description affect this relationship?

There are several aspects to this research that we want to tell you about. First, all of you read descriptions of a person and were led to believe that this person was real. In actuality, the person you read about was fictitious, designed specifically for this research. Second, there were two versions of the description. Some of you read about a gay man and some of you read about a married man who recently had a baby with his wife. In addition, the person's description either matched or did not match expectations about gay men. Third, although all of you read the description while an 8 digit number played on a tape recorder, some of you were told to attend more closely to the number, whereas others were told to attend more closely to the description. Fourth, it was necessary to know your sexual orientation because people's impressions of others sometimes differ if they are from the same social group. Finally, it is normal to use group membership to judge people.

It was necessary that we did not tell you these things before you participated because sometimes knowing what to expect influences people's responses outside of their awareness.

For this reason, PLEASE DO NOT TELL OTHERS WHO MIGHT PARTICIPATE IN THIS STUDY WHAT WE HAVE TOLD YOU. This way, we can keep the experiment the same for all participants. Do you understand? If you have any questions, please ask now.

Understanding how people form impressions is an important topic addressed by social psychologists. The impressions people form have implications for real-world contexts such as, for example, the development of friendships, jury verdicts and hiring practices. Your participation has been very valuable because it will further the field's understanding of the processes that people engage in during impression formation. However, there are also risks associated with some experiments. Although the risks in this particular experiment are minimal, there is the possibility that some participants will feel upset or be concerned that they were misled. If you want to discuss your concerns about this particular study, please contact the psychology office. If this experiment has raised personal issues that you would like to talk about, please contact the Student Counseling Center. Also, feel free to take a copy of the consent form which is by the exit. It has the name and phone number of the primary investigator of this research.

RETURN THIS MEMO TO THE EXPERIMENTER

RETURN THIS MEMO TO THE EXPERIMENTER

**APPENDIX B. TABLE AND FIGURES**

Table 1. Cell means for all participants

---

<u>Low Attention (<math>n = 103</math>)</u>				
<u>Label</u>				
<u>Father (<math>n = 57</math>)</u> <u>Gay (<math>n = 46</math>)</u>				
<i>M</i> <i>SD</i> <i>M</i> <i>SD</i>				
Fit				
Poor	4.12	0.38	4.61	0.77
Good	4.31	0.52	4.71	0.80

---

<u>High Attention (<math>n = 90</math>)</u>				
<u>Label</u>				
<u>Father (<math>n = 49</math>)</u> <u>Gay (<math>n = 41</math>)</u>				
<i>M</i> <i>SD</i> <i>M</i> <i>SD</i>				
Fit				
Poor	4.19	0.40	5.27	0.73
Good	4.51	0.53	5.37	0.44

---



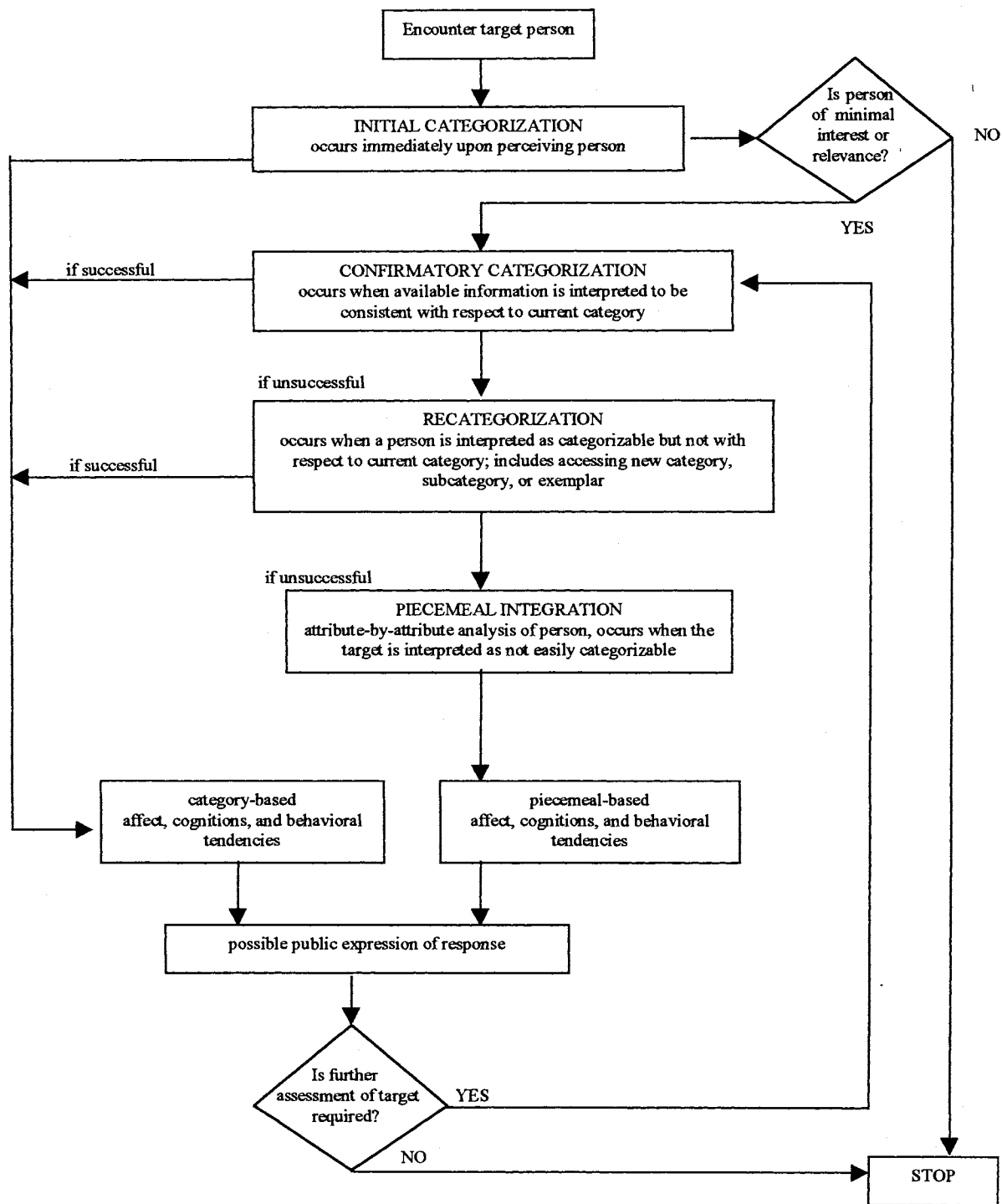


Figure 1. Continuum of Impression Formation. Adapted from *Dual Process Theories in Social Psychology* (p. 233), by S. T. Fiske, M. Lin, and S. L. Neuberg, 1999, New York: Guilford Press.

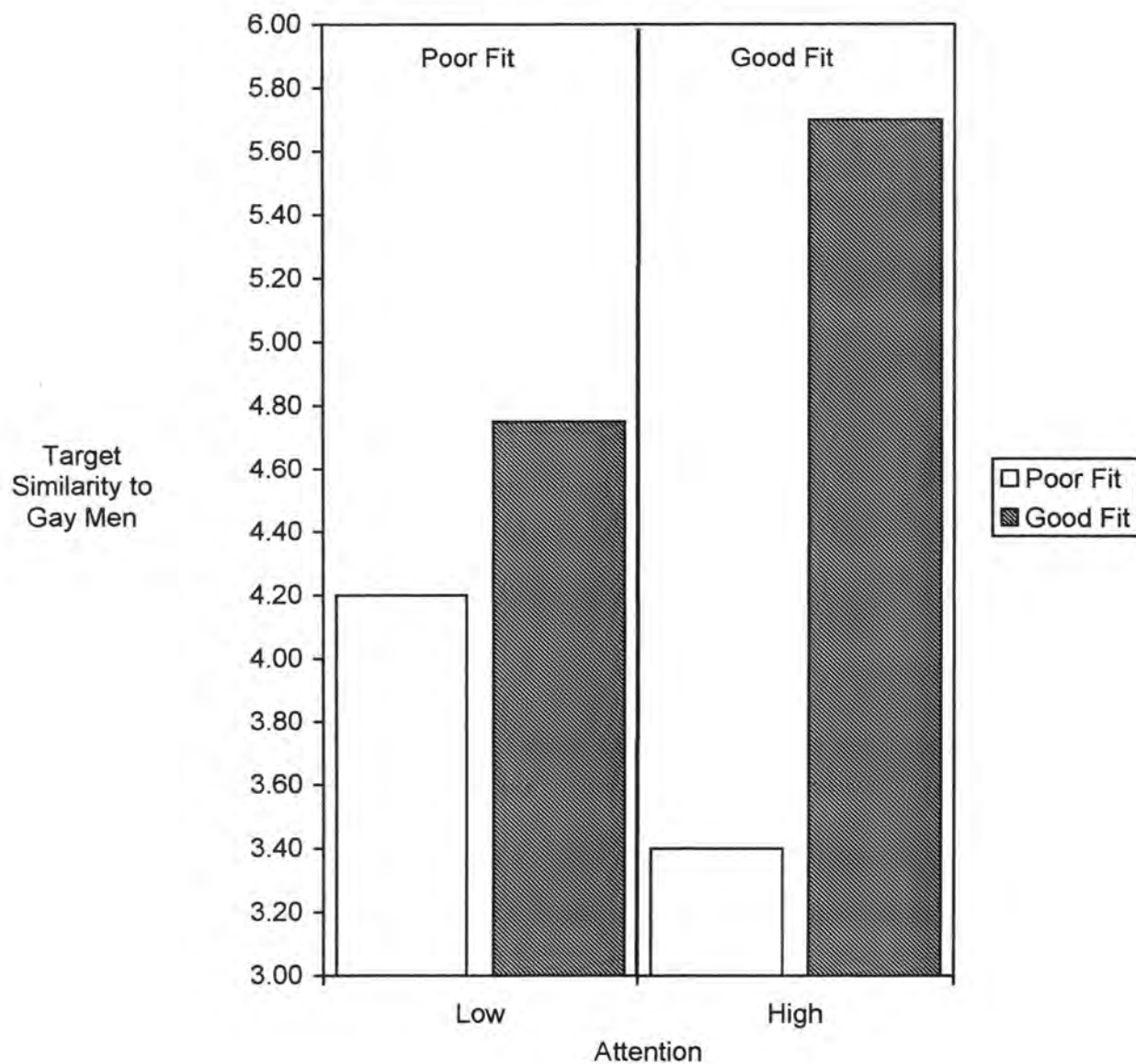


Figure 2. Prediction: It is expected that high attention participants will form more extreme perceptions of the target's similarity to gay men than low attention participants.

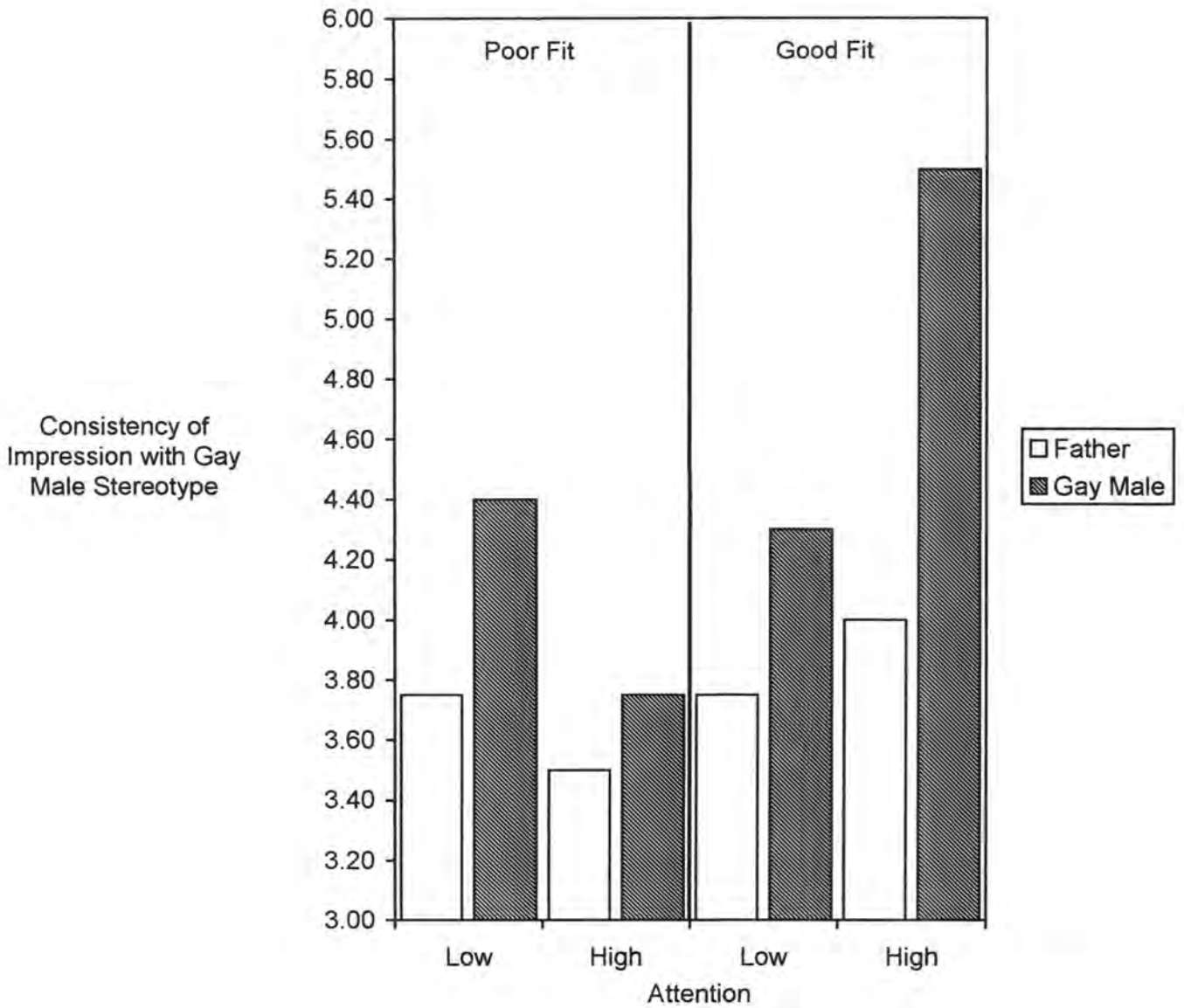


Figure 3. Prediction: The label is expected to influence impressions less strongly when attention is high and fit is poor, but more strongly when attention is high and fit is good.

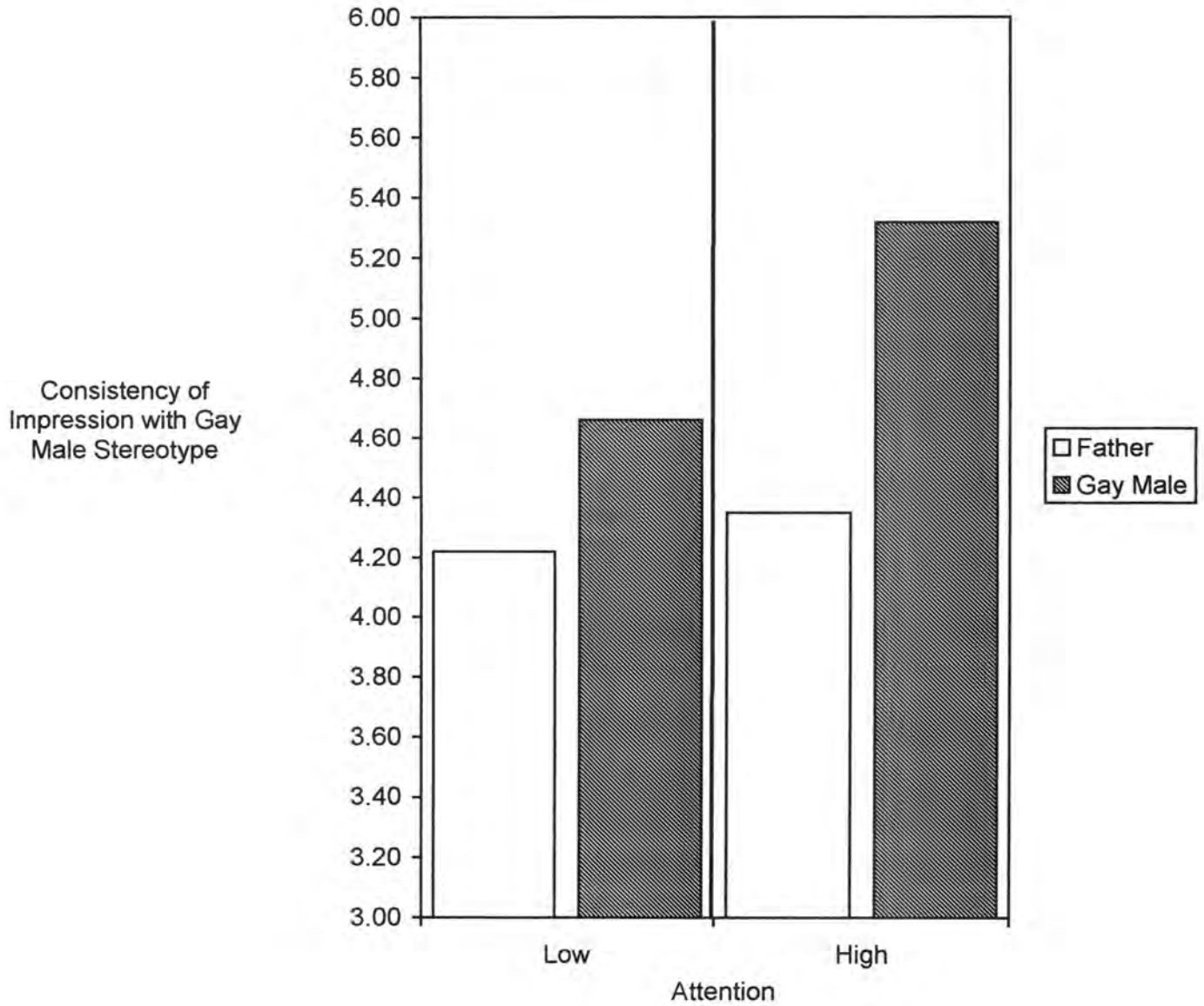


Figure 4. Label x attention interaction. Differences in impressions of the father and gay targets are larger under high than low attention.

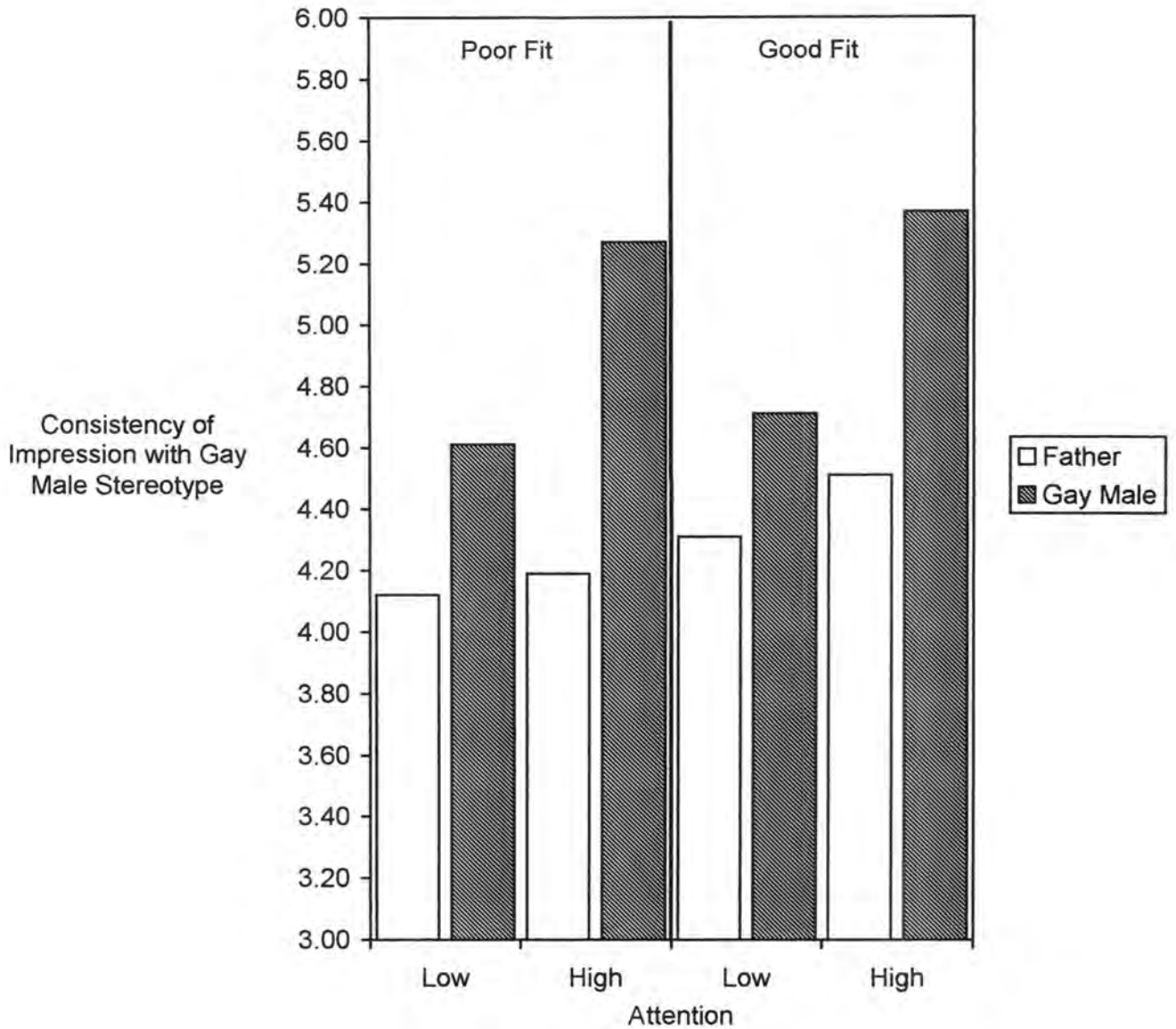


Figure 5. High attention perceivers stereotyped more than low attention perceivers, regardless of the target's fit with the gay male stereotype.