

GENDER-ROLE SELF-CONCEPTS AS MOTIVATORS FOR NONPREJUDICED
PERSONAL STANDARDS: A ROUTE TO PREJUDICE REDUCTION?

A dissertation presented to
the faculty of
the College of Arts and Sciences of Ohio University

In partial fulfillment
of the requirements for the degree
Doctor of Philosophy

Jennifer J. Ratcliff

August 2007

This dissertation titled
GENDER-ROLE SELF-CONCEPTS AS MOTIVATORS FOR NONPREJUDICED
PERSONAL STANDARDS: A ROUTE TO PREJUDICE REDUCTION?

by
JENNIFER J. RATCLIFF

has been approved for
the Department of Psychology
and the College of Arts and Sciences by

Keith D. Markman
Associate Professor of Psychology

Benjamin M. Ogles
Dean, College of Arts and Sciences

Abstract

RATCLIFF, JENNIFER J., Ph.D., August 2007, Psychology

GENDER-ROLE SELF-CONCEPTS AS MOTIVATORS FOR NONPREJUDICED
PERSONAL STANDARDS: A ROUTE TO PREJUDICE REDUCTION? (174 pp.)

Director of Dissertation: Keith D. Markman

Research has uncovered robust gender differences in attitudes toward gay men, with females expressing less prejudice than males (Herek, 1988). Recent evidence suggests that these gender differences are partially mediated by females' greater internal motivation to respond without prejudice (IM), and that this greater IM derives, in part, from females' stronger endorsement of a feminine self-concept as true of the self (Ratcliff, Lassiter, Markman, & Snyder, 2006). The primary purpose of the present work was to extend these findings by demonstrating that regardless of gender, viewing the self as more feminine—in response to a conceptual priming task—would lead to corresponding increases in IM (Studies 1 and 2). In addition, the present work examined whether experimentally enhancing IM would result in a greater liking for, and willingness to interact with, gay men (Study 2). Finally, given that IM was shown to impact liking for and willingness to interact with sexual minorities, a third aim of the current work was to examine the mechanism by which IM influences these variables. To this end, the extent to which gay speakers were individuated and categorized was measured via Klauer and Wegener's (1998) multinomial model of social categorization, and the obtained parameter estimates were examined as a function of prime condition (i.e., feminine vs. control). Results

revealed that enhancing femininity self-ascriptions elicited increases in IM. However, enhanced IM failed to impact liking for, willingness to interact with, or the categorization or individuation of gay men. Discussion focuses on explanations for the failure of enhanced IM to influence these variables. Possible directions for future research are also suggested, with a focus on exploring the antecedents to positive attitudes and behaviors toward gay men and lesbians, including the factors that may lead individuals to take proactive action to improve the circumstances of such marginalized individuals.

Approved: _____

Keith D. Markman

Associate Professor of Psychology

Acknowledgments

I would like to gratefully acknowledge the assistance and support of several people in completing this work. First, my advisor Keith Markman was tremendously supportive and helpful throughout this process. Keith was an amazing editor and responded to each of my inquiries in a thoughtful and timely manner. I would like to thank him for the time and effort that he devoted to this project. My other committee members, Francis Bellezza, Dan Lassiter, Mark Alicke, and Ron Hunt have also importantly contributed to this project. I would like to thank Frank for introducing Klauer and Wegener's (1998) model of social categorization to me, and for fostering my interest multinomial modeling. Frank's feedback and support in examining the data derived from the multinomial model were instrumental in the completion of this project. I would also like to thank Dan and Mark for their thought provoking questions during discussions about this work. Their questions and challenges certainly contributed to the final project. Additionally, I thank Ron Hunt for his contributions to the current project. It was in Ron's course on gay politics that many of the ideas in this manuscript originated. Finally, I thank Stephanie Orbon, Melissa Kuhn, and Michelle DuPrey for assisting with data collection.

On a personal note, I would like to acknowledge my husband, Matthew DuPriest for his unwavering love, understanding, and support throughout this process. I also thank my mother for always believing in my ability to succeed.

Table of Contents

	Page
Abstract.....	3
Acknowledgments.....	5
List of Tables	9
List of Figures	10
Introduction.....	11
Gender Role Variables that Contribute to Attitudes toward Lesbians and Gay Men..	
.....	12
Motivation to Respond Without Prejudice	14
The Role of Motivation to Respond Without Prejudice in Understanding Gender	
Differences in Sexual Prejudice.....	16
Study 1	19
Method	22
Participants.....	22
Instruments.....	22
Procedure	24
Results.....	25
Manipulation Checks	25
The Impact of Priming Manipulation and Gender on IM-G and EM-G.....	26
Relationships between Femininity Self-ascriptions, IM-G, and EM-G.....	27
Overview of Study 2	27

	7
The Role of Categorization in Person Perception.....	31
Categorization as a Stepping Stone on the Pathway to Prejudice?	32
Measuring Social Categorization.....	37
Problems with the Conventional Method of Analysis	38
A Multinomial Model of the Modified “Who Said What?” Paradigm.....	41
Study 2	52
Hypotheses.....	61
Method	67
Participants.....	67
Instruments.....	68
Procedure	73
Results.....	74
Manipulation Checks	74
Relationships between Femininity Self-ascriptions, IM-G, and EM-G.....	75
Priming and Motivation to Respond Without Prejudice.....	75
Multinomial Model Analyses	76
Supplementary Analyses.....	84
General Discussion	87
The Role of Femininity Self-Ascriptions in Motivation to Respond Without Prejudice	88
The Relationship between IM and Liking for, and Willingness to Interact with, Sexual Minorities	89

The Impact of Motivation to Respond Without Prejudice on Social Categorization	90
Limitations	101
Future Directions	104
Concluding Remarks.....	107
References.....	109
Appendix A.....	161
Appendix B.....	162
Appendix C	163
Appendix D.....	164
Appendix E	165
Appendix F.....	166
Appendix G.....	167
Appendix H.....	168
Appendix I	174

List of Tables

	Page
Table 1: Femininity Self-ascriptions, Study 1	124
Table 2: Differences in Motivation to Respond without Prejudice, Study 1	125
Table 3: Data Matrix of the Modified “Who Said What?” Paradigm.....	126
Table 4: Model Parameter Subscripts, Study 2.....	127
Table 5: Femininity, Masculinity, and Compassion Self-ascriptions, Study 2.....	128
Table 6: Internal and External Motivation, Study 2	129
Table 7: Frequencies in the Data Matrix, Study 2	130
Table 8: Parameter Estimates and 90% Confidence Intervals (CIs), Study 2	131
Table 9: Predicting Liking of, and Willingness to Interact with, Gay Speakers	132
Table 10: Correlations Gay Speakers, Study 2	133
Table 11: Correlations Heterosexual Speakers, Study 2.....	134
Table 12: Correlations Pittsburgh Speakers, Study 2	135
Table 13: Correlations Athens Speakers, Study 2	136
Table 14: Regressing IM-G and Liking on Willingness to Interact.....	137

List of Figures

	Page
Figure 1: Model Figure for Modified “Who Said What?” Paradigm	142
Figure 2: Model Figure for Feminine-Prime, Sexual-Orientation Condition	145
Figure 3: Model Figure for Control-Prime, Sexual-Orientation Condition	148
Figure 4: Model Figure for Feminine-Prime, Hometown Condition	151
Figure 5: Model Figure for Control-Prime, Hometown Condition	154
Figure 6: Expected Categorization and Individuation Parameters	157
Figure 7: Expected Liking and Willingness to Interact with Gay Speakers	158
Figure 8: Expected Path Diagram and Coefficients Predicting Liking	159
Figure 9: Expected Path Diagram and Coefficients Predicting Willingness to Interact..	
.....	160

Introduction

When both Mathew Shepard and Billy Jack Gaither were brutally murdered in 1998 because they were gay, many Americans expressed shock and dismay. According to FBI statistics, however, hate crimes based on sexual orientation are not infrequent events, with 1,197 incidents of anti-gay violence reported in 2004 alone. Importantly, this number is not significantly different from that reported in 1998, suggesting that factors underlying anti-gay behaviors are no better understood today than they were nearly a decade ago. Thus, research aimed at understanding such factors is greatly needed (Herek, Gillis, & Cogan, 1999).

Accordingly, because sexual prejudice¹ has been shown to predict anti-gay behaviors (Herek, 2000a), differences between individuals that might explain divergent views of lesbians and gay men have come under close scrutiny in recent years. This work has been fruitful in that researchers have successfully uncovered a variety of individual difference variables that predict sexual prejudice (e.g., Haddock, Zanna, & Esses, 1993; Herek, 1988, 2000b; Whitley & Lee, 2000). Gender differences, in particular, have been afforded a great deal of attention in the literature, with findings indicating that heterosexual females are less prejudiced toward gay men than are heterosexual males (Herek, 1988). Attitudes toward lesbians generally show a similar pattern, but to a weaker extent. That is, some studies have shown that females are more favorable toward lesbians than are males (e.g., Herek, 1988, Study

¹ Sexual prejudice is defined in the broadest sense as a negative attitude that is based on sexual orientation, including homosexuality, bisexuality, or heterosexuality (Herek, 2000a). In the present context, however, the term is intended to refer to heterosexuals' negative attitude toward lesbians and gay men.

3), whereas other investigations have found that female and male respondents evaluate lesbians similarly (e.g., Kite & Whitley, 1996).

Although a substantial amount of literature has been devoted to gender differences in attitudes toward gay men and lesbians, our understanding of the cognitive processes and motivations that underlie these gender differences is in the nascent stages (Herek, 2000b). The purpose of the present research is to better explicate the motivation underlying gender differences in attitudes toward gay men and lesbians and to pinpoint the gender-related constructs associated with this motivation. In so doing, the current work aims to elucidate an important mechanism that drives attitudes toward lesbians and gay men, and to subsequently utilize this understanding to reduce behaviors associated with prejudice.

Gender Role Variables that Contribute to Attitudes toward Lesbians and Gay Men

When examining factors that contribute to gender differences in sexual prejudice, it is important to note that gender can be viewed as multifaceted with various components operating relatively independently (Spence, 1993). For example, although both are related to gender-role *norms*, gender-role *beliefs* and gender-role *self-concepts* are distinct in that the former represents beliefs about how others should behave in terms of gender-role norms, whereas the latter represents perceptions of the self in terms of gender-role norms (Whitley, 1987, 2001). It is postulated here that this distinction between gender-role beliefs and gender-role self-concepts is critical to a fuller understanding of gender differences in sexual prejudice.

The gender-role approach (e.g., Kite & Whitley, 1996, 1998; LaMar & Kite, 1998) provides a theoretical perspective for understanding gender differences in sexual prejudice that focuses on gender-role beliefs. This framework posits that gender-role beliefs are linked to sexual prejudice because homosexuality is perceived as a gender-role violation and, as such, the more an individual subscribes to traditional gender-roles, the more hostility they will express toward individuals who presumably violate these norms (Kite & Whitley, 1998; Whitley, 2001). According to this perspective, males are said to endorse traditional gender-role beliefs to a greater degree than females—and to exhibit the associated heightened sexual prejudice—because gender-role violations are more egregious for males than for females (Bem, 1993). Consequently, males are pressured to affirm their masculinity by endorsing such ideals. Social dominance theory (Sidanius, 1993) provides another framework from which to examine gender differences in endorsement of traditional gender-roles. This perspective posits that relative to females, males are higher in social dominance orientation—the desire for one's in-group to maintain a dominant position in society—and that males subsequently endorse belief-systems that maintain the status-quo (e.g., endorsement of traditional gender-roles) to a greater extent than do females (Sidanius & Pratto, 1999).

Although gender-role beliefs account for the relationship between gender and sexual prejudice, a direct relationship between gender-role self-concepts and sexual prejudice has not been observed (Kite & Whitley, 1998; Whitley, 2001). According to multifactor gender identity theory (Spence, 1993), gender-role self-concepts are not

related to sexual prejudice because they are personality traits that are not relevant for beliefs about how other people should behave (see also Whitley, 2001). Nevertheless, gender-role self-concepts are often internalized and adopted as personal standards by which people judge their own behavior, and engaging in behaviors consistent with these self-concepts results in positive feelings about the self (Wood, Christensen, Hebl, & Rothgerber, 1997). To the extent that gender-role self-concepts are related to treating others equitably, then, individuals should be motivated to treat others in a manner congruent with their self-concepts. This reasoning suggests that despite the lack of a direct relationship between gender-role self-concepts and sexual prejudice, self-concepts that include prescriptions regarding the equitable treatment of others should influence motivation related to the expression of prejudice.

Motivation to Respond Without Prejudice

To date, work examining motivation to respond without prejudice has focused primarily on attitudes toward African Americans (Fazio & Hilden, 2001; Plant & Devine, 1998). This research has shown that explicit endorsement of nonprejudiced sentiments does not reliably coincide with implicitly measured attitudes² or, even, outward manifestations of behavior (Devine, Plant, Amodio, Harmon-Jones, & Vance, 2002; Fazio, Jackson, Dunton, & Williams, 1995), suggesting that the expression of such nonprejudiced sentiments may be motivated by concerns with appearing nonprejudiced rather than by an authentic desire to be nonprejudiced (e.g.,

² Implicitly measured attitudes are defined here as attitude estimates obtained without directly asking participants to report such information (Fazio & Olson, 2003). In the present context, it is assumed that there is dissociation between explicit and implicit measures of prejudice because participants are reluctant to admit to the prejudice that is revealed by the implicit measure.

Dunton & Fazio, 1997; Fazio & Hilden, 2001; Plant & Devine, 1998). Importantly, Plant and Devine (1998) drew a distinction between two independent sources of motivation to respond without prejudice: *internal* motivation (IM) resulting from internalized and personally important nonprejudiced standards and *external* motivation (EM) resulting from social pressure to comply with nonprejudiced norms (see also Dunton & Fazio, 1997; Fazio & Hilden, 2001).

According to these researchers, both internal and external sources of motivation act in concert within each individual to determine the nature of prejudice-related responses. Employing the Internal Motivation Scale (IMS) and the External Motivation Scale (EMS), Plant and Devine (1998, Studies 1 and 2) provided evidence for these distinct motivations to avoid prejudiced responses as well as unique patterns of both motivations in individuals. In Study 3, participants in either public or private conditions rated the extent to which 35 traits were characteristic of Blacks. Source of motivation interacted with public or private setting to predict endorsement of prejudice-related beliefs. More specifically, only those individuals who were both low in internal and high in external motivation to respond without prejudice provided different ratings as a function of whether they were responding in private or public conditions, with more negative attitudes being expressed in the private condition. Importantly, internal and external motivation can also exert a moderating influence on implicit race bias (e.g., Devine et al., 2002; Fazio, et al., 1995; Maddox, Barden, Brewer, & Petty, 2005). For instance, Devine et al. (2002) found that relative to all other participants, those individuals high in internal motivation (IM) and low in

external motivation (EM) exhibited the lowest levels of implicit race bias and, moreover, that high IM scores were correlated with less prejudiced attitudes toward Blacks.

It is important to note that although IM and measures of prejudice should be highly related (Devine et al., 2002; Plant & Devine, 1998), they are conceptually distinct. Measures of prejudice typically assess attitudes toward others, whereas IM reflects both how an individual views the self in terms of egalitarian standards and the extent to which these self-views motivate and subsequently enable the individual to control prejudiced responses (Devine et al., 2002). Due to this unique focus, motivations to respond without prejudice explain behavior beyond what is accounted for by explicit measures of prejudice (Fazio et al., 1995; Ratcliff, Lassiter, Markman, & Snyder, 2006).

The Role of Motivation to Respond Without Prejudice in Understanding Gender Differences in Sexual Prejudice

Although the majority of work exploring the impact of internal and external motivation to respond without of prejudice on attitudes toward stigmatized individuals has focused on motivation as it pertains to racial minorities, more recent work has begun to look at motivation to respond without prejudice as it relates to sexual minorities (Ratcliff et al., 2006). This research has found that internal motivation to respond without prejudice is particularly critical to understanding attitudes toward gay men and lesbians, and that gender-role variables importantly contribute to internal motivation to respond without prejudice.

More specifically, Ratcliff and her colleagues (2006) investigated the roles of internal (IM) and external motivation (EM) to respond without prejudice with respect to gender differences in attitudes toward lesbians and gay men. Given that IM and gender-role self-concepts both focus on self-related concerns, Ratcliff et al. (2006) expected that gender-role self-concepts would be particularly important in predicting gender differences in IM. Consequently, their hypotheses were framed in terms of self-concepts rather than gender-role beliefs. As the gender-role self-concept is an internalized component of the self that serves as a standard by which people judge themselves (Wood et al., 1997), and internalized nonprejudiced standards develop from a sense of personal moral obligation rather than societal pressure (Monteith & Walters, 1998), it was anticipated that to the extent that gender-role self-concepts prescribe egalitarian attitudes toward others, such self-concepts would be associated with higher IM. Because the feminine self-concept embodies communal behaviors such as warmth and caring toward others (Bem, 1974; Wood et al., 1997), individuals who highly endorse the feminine self-concept as part of themselves were expected to be particularly internally motivated to respond without prejudice toward others.

In contrast, the masculine self-concept includes agentic and dominance-oriented behaviors that are not related to concern with the welfare of others (Bem, 1974; Wood et al., 1997). Thus, the degree to which an individual endorses the masculine self-concept was not expected to be related to internal motivation to respond without prejudice. As social reinforcement leads females to be more likely than males to endorse a highly feminine self-concept, and males to be more likely

than females to endorse a highly masculine self-concept (Bem, 1993; Eagly, Diekmann, Johannesen-Schmidt, & Koenig, 2004), it was predicted that females would express higher internal motivation to respond without prejudice toward both lesbians and gay men than would males. Similarly, as the expression of sexual prejudice has been shown to be associated with the dominance-related components of masculinity (Whitley & Lee, 2000), males were expected to exhibit lower EM than females (i.e., a reduced desire to conceal prejudice). In light of empirical work demonstrating that the expression of sexual prejudice is not proscribed (e.g., Crandall & Eshleman, 2003; Haidt & Hersh, 2001; Herek, 1988), and that the relationship between EM and expressions of prejudice are weak (Plant & Devine, 1998), however, variation in EM was not expected to account for gender differences in sexual prejudice. Combining the prediction that male and female respondents will differ in IM with findings in the racial-prejudice literature regarding the importance of high IM for predicting prejudice-related responses (Devine et al., 2002), Ratcliff et al. (2006) anticipated that internal motivation to respond without prejudice would at least partially account for the divergent attitudes toward lesbians and gay men that are expressed by males and females.

Consistent with predictions, Ratcliff et al.'s (2006) data revealed that females evince higher internal motivation (IM) to respond without prejudice toward sexual minorities than do males, and that this difference in IM partially mediates the relationship between gender and prejudice toward gay men (Studies 1 and 2), and completely mediates the relationship between gender and prejudice toward lesbians

(Study 2). Additionally, Study 2 demonstrated that the observed gender differences in IM were partially a function of females' greater endorsement of the feminine gender-role self-concept as true of the self. These results provide new insight into gender differences in sexual prejudice, by suggesting that internal motivation to respond without prejudice is a critical difference between males and females that contributes to attitudes toward sexual minorities. These findings also suggest that the feminine gender-role self-concept is an important antecedent of this variation in IM.

Study 1

Although previous work suggests that gender differences in sexual prejudice are partially mediated by females' greater internal motivation to respond without prejudice and that this greater IM derives, in part, from females' stronger endorsement of a feminine self-concept (Ratcliff et al., 2006), the data are strictly correlational and therefore causality cannot be assumed. The purpose of Study 1, then, is to extend prior work by establishing a causal link between endorsement of femininity as true of the self (femininity self-ascriptions) and IM. To this end, femininity self-ascriptions are directly manipulated via a conceptual priming task.³

The seminal priming study in social psychology, conducted by Higgins, Rholes, and Jones (1977), demonstrated that abstract trait concepts can be primed by their recent use. More specifically, Higgins and his colleagues utilized an unrelated

³ Priming is defined here as a procedure that temporarily stimulates or activates stored knowledge, thereby preparing the individual to interact with environmental information in a manner that produces relevant perceptions, evaluations, motives, and social behavior (Bargh & Chartrand, 2003; Bruner, 1957; Higgins, 1996). Conceptual priming more specifically, "involves the activation of mental representations in one context, so that they can exert a passive, unintended, and nonconscious influence in subsequent unrelated contexts until their activation dissipates" (Bargh & Chartrand, 2000, p. 258).

studies paradigm (Segal & Cofer, 1960), informing participants that the experiment comprised two unassociated studies. In the first memory experiment participants were either exposed to synonyms of the trait “reckless” or “adventurous.” In an ostensibly unrelated reading comprehension study, all participants read an ambiguous behavioral description of the stimulus actor “Donald,” who could be characterized as either reckless or adventurous. Results revealed that despite the fact that all participants read the same behavioral description, those primed with adventurous rated Donald more positively than those primed with reckless.

Since the initial demonstration, research has shown that priming techniques can be employed to experimentally manipulate a variety of personality characteristics and states theoretically posited to be chronic in nature, such as cooperation and achievement motives (Bargh, Gollwitzer, Lee-Chai, Barndollar, & Trötschel, 2001; Chartrand, 2001), performance on a general knowledge test (Dijksterhuis & van Knippenberg, 1998), sexism (Rudman & Borgida, 1995), how attractive individuals perceive certain women to be (Bargh, Raymond, Pryor, & Strack, 1995, Study 2), and even what objects will attract an individual’s attention (Roskos-Ewoldsen & Fazio, 1992). One method frequently employed to conceptually prime such constructs is the “scrambled sentence test” (Srull & Wyer, 1979).⁴ In this task, participants are instructed to make a grammatically correct sentence from a string of five scrambled words, and in the course of doing so they are exposed to words related to the construct intended to be primed.

⁴ The scrambled sentence test is considered to be a supraliminal priming technique, or one in which participants are consciously aware of the priming stimuli, but are unaware of the underlying pattern imbedded in the stimuli that serves to prime the construct (Bargh & Chartrand, 2000).

For the present purposes, two adapted versions of the Scrambled Sentence Test (Srull & Wyer, 1979) are employed to either manipulate femininity self-ascriptions or to serve as a control. Although it is expected that females will endorse femininity self-ascriptions to a greater extent than will males, it is also predicted that both males and females will endorse such ascriptions to a greater extent following the feminine prime than following the control prime.⁵ Moreover, it is anticipated that the femininity primes will uniquely impact femininity self-ascriptions and will not additionally reduce masculinity self-ascriptions, increase compassion self-ascriptions, or enhance mood and arousal. Accordingly, because the feminine self-concept—as measured by the BSRI (Bem, 1974)—includes communal traits such as compassion toward others, only the femininity item is utilized to assess femininity self-ascriptions.

Prior research has demonstrated that the feminine self-concept is positively related to IM and unrelated to EM (Ratcliff et al, 2006). Femininity self-ascriptions are similarly expected to be positively related to IM and unrelated to EM. It is further predicted that females will again evince IM to a greater extent than will males. Given the inconsistent findings regarding gender differences in EM however, no specific predictions for such differences are made here.

⁵ Higgins (1996) argues that primes only influence judgments for which they are applicable. In the “Donald” study, for example, Higgins et al. (1977) found that subsequent characterizations of Donald were not influenced by primes that were unrelated to his ambiguous behavior. According to this logic, one might argue that femininity primes will not affect males because femininity self-ascriptions are not applicable to them. However, the gender-in-context perspective (Deaux & LaFrance, 1998) posits that gender identities are multidimensional and are therefore flexible (see also Deaux & Major, 1987; Spence, 1993). Thus, regardless of biological sex, aspects of the environmental context such as primes should partially determine the components of an individual’s gender identity that are accessible at any given time.

Finally, because prejudice toward gay men is typically greater than that toward lesbians, and correspondingly, motivation to respond without prejudice toward gay men is typically lower than such motivation toward lesbians, the present study focuses on exploring whether motivation related to sexual prejudice toward gay men can be altered. That is, the current work examines whether aspects of the most entrenched form of sexual prejudice—that directed at gay men—can be influenced by increasing femininity self-ascriptions. As the feminine-self concept has been shown to be related to increases in IM (Ratcliff et al., 2006), and the femininity primes are expected to increase femininity self-ascriptions, it is predicted that individuals will exhibit greater IM-G following femininity primes than following control primes. Indeed, it is predicted that making males feel more feminine will lead to increases in IM-G that are comparable to females' baseline levels of IM-G (i.e., levels of IM-G evinced by females in the control group). In contrast, because the feminine self-concept has been shown to be unrelated to EM (Ratcliff et al., 2006), no differences in EM-G are expected to emerge as a function of the priming manipulation.

Method

Participants

Fifty-four introductory psychology students at Ohio University (28 females and 26 males) participated for partial course credit.

Instruments

Scrambled Sentence Tests. The Scrambled Sentence Test (Srull & Wyer, 1979) comprised 15 items that were adapted to either nonconsciously enhance

feminine self-ascriptions or to serve as a control (cf. Chartrand & Bargh, 1996; see Appendices A and B). Each item was composed of five words presented in a scrambled order (e.g., “flew eagle the plane around”). Ten of the items in the femininity condition included words related to the feminine self-concept (e.g., “dog timid ball is the”), and the remaining five sentences were neutral with regard to gender- role self-concepts. In the control condition, all 15 items were neutral (e.g., “grass green orange is the”). The participant’s task was to use four of the five scrambled words to compose a grammatically correct sentence.

Measure of compassion, masculinity self-ascriptions, and femininity self-ascriptions. The degree to which participants endorsed compassion, masculinity, and femininity as true of the self was ascertained via the 60-item Bem (1974) Sex-Role Inventory (BSRI; see Appendix C). For the purposes of the present investigation, responses to the individual items representing relevant self-ascriptions (i.e., masculine, feminine, and compassionate) were examined. The remaining items served as fillers.

Measure of mood and arousal. Global mood was assessed via the modified version of the Affect-Arousal Scale (Chartrand, 2001; Rosenhan, Salovey, & Hargis, 1981; see Appendix D). The scale contains two dimensions—emotion (e.g., bad-good, sad-happy) and arousal (e.g., calm-excited, tired-energetic). Each bipolar item differentiates feelings on 11-point scales (-5 to +5). Items were recoded so that higher scores indicate more positive mood and greater arousal. Reliability was satisfactory ($\alpha = .80$).

IM-G and EM-G. Motivation to respond without prejudice toward gay men was assessed with the adapted version of the combined IM-G and EM-G scales (Ratcliff et al., 2006, Study 2; see Appendix E). The adapted measure contained two subscales—IM-G (e.g., “I am personally motivated by my beliefs to be nonprejudiced toward gay men”) and EM-G (e.g., “I try to hide any negative thoughts about gay men in order to avoid negative reactions from others”). Each subscale comprised 5 items measured on a 1 (*strongly disagree*) to 9 (*strongly agree*) rating scale. Reliability analyses revealed satisfactory levels of internal consistency for both IM-G ($\alpha = .86$), and EM-G ($\alpha = .83$).

Funnel debriefing questionnaire. To probe for general suspicion or awareness concerning the priming manipulation, participants completed a funnel debriefing questionnaire (Bargh & Chartrand, 2000; see Appendix F). Questions progressed from general ones that asked about the overall purpose of the research to specific ones that asked participants to describe any influence they felt that the scrambled sentences might have had on their behavior. The final question asked participants to report their sexual orientation.

Procedure

On arrival, participants—run in groups of 1 to 3—were greeted by a female experimenter and seated at a desk in front of a computer monitor to complete a study on “Ohio University students’ attitudes toward social issues.” Participants were then randomly assigned to receive either the feminine or the control version of the Scrambled Sentence Test. The experimenter explained that working on the scrambled

sentences was intended to help participants' clear their minds before the actual experiment began (cf. Chartrand, 2001).

Following completion of the Scrambled Sentence Test, participants began the computerized portion of the experiment, during which time they completed (in order) the BSRI, Affect-Arousal Scale, IM-G, and EM-G. At the conclusion of the experiment, participants were paced through the funnel-debriefing questionnaire and then were fully informed of the true purpose of the research.

Results

Manipulation Checks

Funnel debriefing. Examination of responses to the funnel debriefing questions revealed that no participant guessed the true purpose of the priming manipulation, nor had they previously encountered the Scrambled Sentence Test. However, five participants (3 female and 2 male) identified with a sexual orientation other than heterosexual and were therefore removed from the data set. Hence, the final data set included 49 participants (25 females and 24 males).

The impact of primes on self-ascriptions. To examine the impact of the priming manipulation on femininity self-ascriptions, and to ensure that the priming manipulation did not additionally alter masculinity or compassion self-ascriptions, each measure was subjected to a 2 (priming condition: feminine vs. control) X 2 (gender of respondent: female vs. male)⁶ ANOVA. Examination of the femininity self-ascription data revealed a main effect of gender, with females ($M = 5.76$, $SD =$

⁶ Because gender critically influences self-ascriptions comprising feminine and masculine gender-role self-concepts (Bem, 1974), it is included in the model for each analysis.

1.30) endorsing femininity as true of the self to a greater extent than males ($M = 2.33$, $SD = 1.46$), $F(1, 45) = 77.42$, $p < .0001$, $\eta^2 = .63$. Also consistent with predictions, a main effect of priming condition emerged, with participants reporting higher femininity self-ascriptions in the feminine-prime condition ($M = 4.63$, $SD = 2.08$) than in the control-prime condition ($M = 3.56$, $SD = 2.24$), $F(1, 45) = 5.06$, $p = .03$, $\eta^2 = .10$. The interaction was nonsignificant, $F < 1$ (see Table 1 for means).

The masculinity self-ascriptions were subjected to a similar analysis. Data revealed a main effect of gender, with males ($M = 5.61$, $SD = .93$) expressing higher masculinity than females ($M = 1.97$, $SD = 1.00$), $F(1, 45) = 78.95$, $p < .0001$, $\eta^2 = .63$. No other significant effects emerged (all F s < 1). Finally, examination of compassion self-ascriptions revealed no significant differences as a function of gender, priming condition, or their interaction (all F s < 1).

Affect and arousal. To examine the possibility that the priming manipulation impacted mood, affect-arousal scores were examined as a function of priming condition. Results indicated that mood was not significantly impacted by priming condition, $t < 1$.

The Impact of Priming Manipulation and Gender on IM-G and EM-G

To examine the impact of the priming manipulation and gender on internal motivation to respond without prejudice toward gay men, IM-G scores were subjected to a 2 (priming condition: feminine vs. control) X 2 (gender of respondent: female vs. male) ANOVA. Consonant with the prior literature, a main effect of gender emerged with females ($M = 6.96$, $SD = 1.82$) exhibiting higher IM-G than males ($M = 5.88$, SD

= 1.81), $F(1, 45) = 4.05, p = .05, \eta^2 = .08$. Results also revealed a main effect of prime condition such that individuals primed with femininity ($M = 6.99, SD = 1.75$) exhibited greater internal motivation to respond without prejudice toward gay men than did those in the control-prime condition ($M = 5.89, SD = 1.87$), $F(1, 45) = 4.21, p < .05, \eta^2 = .09$. As depicted in Table 2, the interaction between priming condition and gender was nonsignificant, $F < 1$.⁷ Finally, and consistent with predictions, males exposed to femininity primes evinced levels of IM-G that were comparable to those of females in the control condition, $F < 1$.

A similar analysis conducted on EM-G scores revealed no significant differences as a function of priming condition, gender, or their interaction (all F s < 1; see Table 2).

Relationships between Femininity Self-ascriptions, IM-G, and EM-G

As predicted, femininity self-ascriptions were positively related to IM-G ($r = .30, p < .05$) and unrelated to EM-G ($r = -.13, p > .05$). Additionally, IM-G and EM-G were unrelated ($r = .10, p > .05$).

Overview of Study 2

Study 1 successfully extended previous work by demonstrating a more direct link between femininity self-ascriptions and increases in IM-G. That is, the priming manipulation both enhanced femininity self-ascriptions and IM-G. In addition, the data contribute to the motivation to respond without prejudice literature by providing

⁷ Theoretically, femininity could serve to mediate the relationship between condition and IM-G. Indeed, a test for mediation revealed that this relationship does drop from significant to nonsignificant when femininity is added to the model. However, the change in the coefficients is minimal (i.e., from $B = .52$ to $B = .50$) and nonsignificant, $Z < 1$. It is possible that mediation is not detected here because the power of the test is compromised by the small sample size (Kenny, Kashy, & Bolger, 1998).

the first evidence that IM can be experimentally enhanced. Finally, and perhaps even more importantly, the finding that males primed with femininity exhibit IM-G to the same extent as females at baseline (i.e., in the control group) suggests that increasing males' femininity self-ascriptions can reduce the gender gap in internalized egalitarian standards. Notably, Ratcliff and her colleagues (2006) demonstrated that internal motivation contributes to more positive attitudes toward gay men and lesbians. Taken together, the previous findings and the results of the current work thus far, suggest that increasing femininity self-ascriptions could lead to more positive attitudes toward sexual minorities.

Nevertheless, prior research shows that attitudes toward gay men and lesbians do not always coincide with actual behavior (Kite & Whitley, 1998). Consequently, it is unclear whether such heightened motivation will translate into nonbiased behaviors. The primary purpose of Study 2 then, is to investigate whether increasing males' IM-G will result in enhanced liking for and willingness to interact with gay men—two factors shown to be negatively related to prejudiced behavior during interactions with stigmatized individuals (Hebl & Dovidio, 2005; Kite & Whitley, 1998; Park & Judd, 2005; Pettigrew & Tropp, 2000). Additionally, it is important to note that femininity self-ascriptions did not mediate the relationship between priming condition and IM-G, and therefore it cannot be concluded with any certainty that enhancing femininity self-ascriptions directly *lead* to the subsequent increases in IM-G. As previously mentioned, it is possible that the small sample size in Study 1 may have contributed to the lack of mediation (Kenny et al., 1998). Thus, an additional

purpose of Study 2 is to examine the mediational hypotheses with a larger sample size.

Assuming that increasing IM-G will lead to more positive responses toward gay men, another aim of the current work is to understand the mechanisms by which motivation exerts its effects. This latter purpose is critical, because uncovering the processes activated by such motives can inform prejudice-reduction strategies for individuals not so motivated (Devine et al., 2002). For example, many prominent models of prejudice reduction focus on minimizing the extent to which individuals utilize social categories (e.g., gender, race, sexual orientation) when forming impressions of stigmatized individuals (i.e., categorization). This decategorization approach aims to encourage individuals to instead utilize the attributes and behaviors of stigmatized individuals when forming impressions (individuation; see Gaertner, Dovidio, Banker, Houlette, Johnson, & McGlynn, 2000 for a review). Inherent in these models, is the assumption that categorization is undesirable and contributes to prejudice, whereas individuation is desirable and reduces prejudice (see also Brewer, 1988; Fiske & Neuberg, 1990). In contrast, recategorization models of prejudice reduction argue that categorization is inevitable, and that rather than attempting to eliminate social categorization, researchers should focus on methods to broaden psychological boundaries so that stigmatized individuals are recategorized into new, more positively viewed social categories (see Park & Judd, 2005). Thus, recategorization models actually encourage social categorization and generally do not address the role of individuation.

Overall, these two prominent models suggest quite different paths to prejudice reduction. At their core, the models diverge in their perspectives on the roles that categorization and individuation play in prejudice and discrimination. Research support for each perspective is mixed (Park & Judd, 2005), and moreover, recent evidence suggests that previous work has typically confounded categorization and individuation (Gawronski, Ehrenberg, Banse, Zukova, & Klauer, 2003; Klauer & Wegener, 1998). Thus, the current literature does not definitively speak to how or why internally motivated individuals successfully respond without prejudice (Devine et al., 2002). Consistent with the decategorization perspective, it is possible that individuals who are internally motivated individuate stigmatized targets to a greater extent than do their less motivated counterparts—leading to a reduction in the reliance on social categories. On the other hand, motivated individuals might simply recategorize stigmatized targets into a nonstigmatized social category (i.e., a gay student is no longer thought of as gay, but rather, is simply viewed as a student), reducing the need for individuating information. Alternatively, motivated individuals may utilize categorization and individuation as tools to gather and organize information about stigmatized individuals. That is, motivated individuals might be hyper-aware of social categories, utilizing such information as a cue to engage in self-regulation efforts to avoid prejudiced responses (Monteith, Ashburn-Nardo, Voils, & Czopp, 2002). Moreover, these ensuing self-regulation efforts could include increased individuation of stigmatized targets (Ratcliff, 2003).

To examine all of these possibilities, the current work seeks to provide a detailed analysis of changes in individuation and categorization following increases in internal motivation to respond without prejudice. To this end, the impact of IM-G on the extent to which gay men are categorized and individuated will be examined. Additionally, the current work will investigate the impact of the consequent individuation and categorization processes on liking of, and willingness to interact with, gay men. These data will be the first to directly examine the unique and joint contributions of individuation and categorization to behaviors associated with sexual prejudice. In the following sections, the relevant literature is reviewed and experimental data are described in detail.

The Role of Categorization in Person Perception

Social psychologists have long recognized the need for perceivers to simplify and organize the person-perception process by activating and implementing categorical thinking (Allport, 1954; Brewer, 1988; Bruner, 1956; Fiske & Neuberg, 1990; Macrae & Bodenhausen, 2000; Tajfel, 1969; Taylor, 1981). That is, perceivers are said to infer the personal dispositions of others from social category memberships rather than from observed behaviors because such inferences are typically more efficient and less taxing on valuable cognitive resources. For example, a woman might be perceived as shy on the basis that she is a librarian rather than on the basis of her shy behaviors, because such a conclusion can be reasonably derived with very little effort by drawing on the stereotypes associated with librarians.

Most major theories of impression formation assume that perceivers generally act as such “cognitive misers” or “motivated tacticians”—giving precedence to categorical information over individuating information—in a quest to save valuable time and cognitive resources while navigating a social environment that inundates them with enormous quantities of information (Brewer, 1988; Brewer & Harasty-Feinstein; Fiske, Lin, & Neuberg, 1999; Fiske & Neuberg, 1990; Taylor, 1981). Research has subsequently shown that this inclination to conserve resources is in fact reasonable and functional in that the presence and use of social category labels during an impression-formation task enables perceivers to perform unrelated concurrent tasks with greater ease and facility (Macrae, Milne, & Bodenhausen, 1994).

Categorization as a Stepping Stone on the Pathway to Prejudice?

The relationships between categorization, stereotypes, and prejudice.

Although the utility of categorical thinking has been acknowledged in the literature (e.g., Allport, 1954; Brewer & Harasty-Feinstein; Fiske et al., 1999; Gilbert & Hixon, 1991; Macrae & Bodenhausen, 2000; Macrae et al., 1994; Tajfel, 1969), the pernicious effects of the stereotypes associated with the categorization process have also been widely documented (e.g., Fazio et al., 1995; Smith, Fazio, & Cejka, 1996; Stangor, Lynch, Duan, & Glass, 1992; Taylor & Falcone, 1981; Walker & Antaki, 1986; Zarate & Smith, 1990). Research has shown for instance, that once an individual is categorized as a member of a given social group the stereotypes associated with that group are also activated, even among individuals who are

presumably low in prejudice (Devine, 1989; Zarate & Smith, 1990; but see Lepore & Brown, 1997).

Importantly, these activated social stereotypes have been shown to influence person perception in critical and often detrimental ways. First, stereotypes can guide subsequent processing, influencing the perceptual encoding of information (e.g., Macrae & Bodenhausen, 2000; Ratcliff, 2003; von Hippel, Jonides, Hilton, & Narayan, S., 1993), and the representation of this information in memory (e.g., Gawronski et al., 2003; Stangor et al., 1992; Taylor, Fiske, Etcoff, & Ruderman, 1978; Walker & Antaki, 1986). Consequently, perceiver's recollections of a target's behaviors may be biased. Second, the contents of activated stereotypes are often applied in ensuing evaluations and impressions of a target individual (e.g., Macrae & Bodenhausen, 2000; Fazio et al., 1995; Higgins et al., 1977; Smith et al., 1996, but see Gilbert & Hixon, 1991) and as a result, stereotypic judgments and behaviors may emerge (e.g., Brewer, 1988; Fazio et al., 1995; Fiske & Neuberg, 1990).

The moderating role of perceiver attitudes and processing goals on the categorization/ individuation continuum. Although early researchers posited that category and stereotype activation invariably evoke prejudiced responses (Allport, 1954; Tajfel, 1969; Taylor, 1981), more recent evidence suggests that prejudice is not an inevitable consequence of exposure to stigmatized social category members (e.g., Brewer, 1988; Devine, 1989; Devine et al., 2002; Fazio et al., 1995; Gilbert & Hixon, 1991; Lepore & Brown, 1997; Locke, MacLeod, & Walker, 1994). Specifically, at least two perceiver characteristics have been found to moderate the impact of

category and stereotype activation: initial attitudes (i.e., prejudice levels) toward a given social group, and temporary processing goals (Macrae & Bodenhausen, 2000).

First, level of prejudice has been shown to predict the extent to which stigmatized targets are categorized on the basis of their social category membership (Lepore & Brown, 1997; Locke et al., 1994; Stangor et al., 1992; Taylor & Falcone, 1981; Walker & Antaki, 1986; Wittenbrink, Judd, & Park, 1997), with individuals higher in prejudice categorizing targets to a greater extent. In contrast to conventional wisdom, for example, Lepore and Brown (1997, Study 2) found that the subliminal presentation of prime words related to the category *Blacks* differentially influenced subsequent impressions of a target individual as a function of participants' level of racial prejudice. More specifically, following the priming manipulation, high prejudiced participants rated a race-neutral ambiguous target more negatively than did low prejudiced participants. Similarly, Walker and Antaki (1986) demonstrated that individuals high in sexual prejudice utilize sexual orientation to categorize group members and to organize related information in memory to a greater extent than do those individuals low in sexual prejudice. In all, these findings provide evidence that there is meaningful individual variation both in the extent that categorical cues activate stereotypic associations, and in the extent to which these cues are used to process subsequent information. Explanations for these differences have typically focused on the frequency and consistency with which individuals activate a given stereotype (Bargh, 1997), as well as variation in the content of the cognitive

representations of minority group members that individuals hold (Lepore & Brown, 1997).

Recent evidence suggests that the information-processing goals of the perceiver are another critical determinant of category activation and ensuing memory representations; a notion that has existed for nearly half of a century (Bruner, 1957; see also Jones & Thibaut, 1958). Expanding this idea, the continuum model of impression formation (Fiske et al., 1999; Fiske & Neuberg, 1990) postulates that perceivers initially utilize social category information when forming impressions of others, but if sufficiently motivated to go beyond category information, they will devote attentional resources to the target person's attributes. Returning to the prior example then, an individual who learns that they will be working with the librarian to present a project may not simply assume that she is shy based on her group membership (i.e., categorization) but rather, will examine her behavior more carefully to determine if she is capable of presenting the project to a group (i.e., individuation). That is, outcome dependency is one factor said to motivate perceivers to utilize precious cognitive resources for individuating targets more thoroughly (Brewer, Weber, & Carini, 1995; Fiske et al., 1999). According to the continuum model, it is this attention to target attributes that mediates the influence of motivation on judgments and behavior (see also Sherman, Stroessner, Conrey, & Azam, 2005)—a notion that is consistent with decategorization models.

Consistent with the propositions of the continuum model (Fiske et al., 1990; Fiske & Neuberg, 1999), some recent findings have confirmed that motivational

factors indeed influence the extent to which individuals categorize or individuate target persons. For instance, perceivers who are motivated to process person information have been shown to categorize target individuals at a more subordinate or individuated level (Pendry & Macrae, 1996), members of minority groups individuate members of their own group to a greater extent than they individuate outgroup members (Brewer et al, 1995), and individuals who are motivated to respond without prejudice are less likely to categorize individuals on the basis of race than are other individuals (Fazio & Dunton, 1997).

According to the continuum model (Fiske et al., 1999; Fiske & Neuberg, 1990), motivation can additionally impact subsequent judgments and behaviors by inducing perceivers to recategorize target individuals. That is, most people can be categorized on the basis of multiple social identities, and the social category that is activated may importantly hinge upon perceiver motives. For example, depending on an individual's orientation, George W. Bush can be categorized as a man, a Caucasian, a Republican, a politician, the President of the United States, or a simpleton. If a perceiver is motivated to view Bush as competent, he or she may initially categorize him as the President, whereas if a perceiver is motivated to view Bush as incompetent he or she may categorize him as a simpleton. Empirical evidence for this goal-directed person categorization can be found in a series of provocative studies conducted by Sinclair and Kunda (1999). More specifically, Sinclair and Kunda (1999) demonstrated that following positive feedback from a black doctor, participants exhibited enhanced category activation for *doctor* and inhibited category

activation for *blacks*. Conversely, following negative feedback from a black doctor, participants exhibited enhanced category activation for *blacks* and inhibited category activation for *doctors*. Substantiating the claims of both the continuum model and the recategorization model, these findings impressively demonstrate that perceiver motives not only regulate category activation, but they also regulate the inhibition of undesirable categories. Because category application in the form of prejudiced behaviors depends first upon this category activation (Gilbert & Hixon, 1991), a full understanding of factors that influence the activation of devalued social categories is imperative in the quest to ameliorate prejudice.

Measuring Social Categorization

Social categorization can be unobtrusively assessed via the “who said what?” paradigm devised by Taylor and her colleagues (1978). During this experimental task participants listen to an ostensible discussion between members of two different social categories (e.g., three men and three women, or three black men and three white men), with the respective speakers making an equal number of statements. Each statement is presented with a photograph identifying the speaker. Following all of the statements, participants are given a surprise recall test in which they are required to assign each statement to the appropriate speaker. The dependent variables of interest are the number and type of errors that participants make. Two types of errors can occur in this paradigm: within category and between category. A within-category error is said to occur when a statement is incorrectly assigned to a speaker who is a member of the same category as the correct speaker (e.g., a statement made by a

woman is assigned to a different woman). A between-category error is said to occur when a statement is incorrectly assigned to a speaker who is a member of a different category than the correct speaker (e.g., a statement made by a woman is assigned to a man). Following a correction to the between-category errors,⁸ the difference between the within-category and between-category errors is generally computed (i.e., the error-difference measure) and examined via analyses of variance (ANOVAs).

In a series of studies, Taylor et al., (1978) found that as a consequence of social categorization, participants made more within-category than between-category errors. More than fifty experiments utilizing the “who said what?” paradigm have since replicated this finding, lending support to the assumption that the statements are initially encoded and stored in memory on the basis of the speaker’s social-category membership (see Klauer & Wegener, 1998 for a list of relevant studies). It is important to note however, that research employing this paradigm has revealed that the extent to which category membership is utilized in encoding target-relevant information is malleable as a function of the attitudes and motivation of the perceiver (e.g., Stangor et al., 1992, Study 3; Walker & Antaki, 1986).

Problems with the Conventional Method of Analysis

Although they state that the “who said what?” paradigm is an elegant unobtrusive measure of social categorization, Klauer and Wegener (1998) also argue that the traditional method of analysis for data derived from this paradigm—the error-

⁸ Because there is a greater possibility for more between-category confusions (i.e., all members of the other category) than within-category confusions (i.e., all members of the category minus the correct speaker), the between-category errors are typically multiplied by the constant, $(n - 1)/n$, with n equal to the number of speakers in each category.

difference measure—can be misleading and difficult to interpret because it obscures the various cognitive processes that contribute to both between-category and within-category errors. More specifically, these researchers argue that the error-difference measure confounds memory for social categories with item discrimination, person discrimination, and expectancy-level guessing (see Bayen, Murnane, & Erdfelder, 1996 for a similar argument). To elaborate, the original paradigm is said to confound social categorization with item discrimination because participants are not provided with an opportunity to indicate that they do not remember a given item. Hence, when an item is not remembered, participants are forced to guess the speaker. Barring a correlation between speaker category membership and the content of the statements (e.g., females generally express anti-war sentiments, and males generally express pro-war sentiments), such blind guessing should be equally distributed across between- and within-category errors, thereby leveling differences between these errors. This issue is particularly problematic when experimental manipulations influence both memory for the individual statements and memory for the social categories of the speakers (Klauer & Wegener, 1998), making it impossible to pinpoint the process responsible for subsequent decreases or increases in the error-difference measure.

Similarly, because the error-difference measure does not differentiate between errors that arise due to deindividuation of the targets (i.e., less attention is paid to the individuating features of each speaker) and errors that arise because perceivers have organized the statements on the basis of social category membership, it confounds social categorization with person discrimination (i.e., individuation).

Correspondingly, when individuals are motivated to attend to the speaker's individuating features, the error-difference measure decreases, conveying the message that social categorization has been reduced, when in fact social categories may be highly salient as a function of this individuation (Klauer & Wegener, 1998). In this way, the error-difference measure can again be deceptive. Moreover, it does not allow researchers to disentangle the contributions of individuation and categorization to subsequent memory.

Finally, Klauer and Wegener (1998) argue that when the content of the statements is correlated with the category membership of the speakers, the traditional method of analysis confounds social categorization with expectancy-based guessing. For example, if individuals in Category A have generally expressed support for the Iraq war and individuals in Category B have generally expressed anti-war sentiments; expectancy-based guessing might reasonably lead individuals to guess that a statement in support of the war was made by a speaker from Category A. Such guessing increases the error-difference measure independently from actual memory for the speakers' social-category memberships, again potentially leading to erroneous conclusions.

Overall then, Klauer and Wegener (1998) argue that at least four distinct processes jointly contribute to data derived from the "who said what?" paradigm: item discrimination, whereby the participant remembers the statement that is to be assigned to a speaker; person discrimination, whereby the participant remembers both the item to be assigned and the appropriate speaker; category discrimination, whereby

the participant remembers the item to be assigned, fails to remember the appropriate speaker, but does recall the category membership of the speaker; and various forms of guessing, whereby the participant guesses a speaker because he or she does not remember the item, the speaker, or the category membership of the speaker. On this basis, Klauer and Wegener (1998) suggest that the error-difference measure should not be utilized to analyze such data and that a more sensitive measure instead be employed.

A Multinomial Model of the Modified “Who Said What?” Paradigm

To address the aforementioned shortcomings of the error-difference measure and to more accurately capture the four types of psychological processes purported to be at work in the “who said what?” paradigm, Klauer and Wegener (1998) proposed a modified version of the paradigm, as well as a multinomial model of social categorization⁹ to explain the results (see Figure 1).

The modified paradigm. To begin, the modified paradigm was designed to address the fact that the original “who said what?” paradigm (Taylor et al., 1978) confounded memory for speakers’ social categories (i.e., category discrimination) with memory for the statements (i.e., item discrimination). To deal with this problem, Klauer and Wegener (1998) added a step into the original paradigm wherein

⁹ Multinomial modeling is a statistically based procedure that enables researchers to assess the latent cognitive processes theoretically postulated to underlie the overt behavioral responses obtained in experiments (Riefer & Batchelder, 1988; Batchelder & Riefer, 1990). These models are predicated on the assumption that only a finite set of latent cognitive processes underlie such behavioral responses, and that the probability of each process can be represented in the model by hypothetical parameters that can then be statistically estimated from the observed data (Bayen et al., 1996). It is important to note that the hypothetical parameters specified in a given model are theoretically motivated and independent, enabling measurement of the effects of each process on subsequent behavior (Riefer & Batchelder, 1988).

participants are required to first discriminate between statements actually presented in the discussion (i.e., old statements) and those never presented (i.e., new statements) by identifying each statement as “old” or “new” before they move on to the assignment phase of the experiment. Following each “old” response, participants assign the statement to a speaker, whereas following a “new” response, the next statement appears. In this way, data is obtained that provides both an estimate of item discrimination (i.e., how well participants distinguish between old and new items) and source discrimination (i.e., how well participant distinguish between speakers), thereby disentangling the previously confounded processes.

As depicted in Table 3, the modified paradigm results in a contingency table comprising 11 cells (numbered 1 to 11) that is a function of both the actual source of the statement (a speaker from Category A, a speaker from Category B, or a new statement) and the assignments participants make for each statement (to the correct speaker, to a wrong speaker from Category A, to a wrong speaker from Category B, or to the new statements). It is noted by Klauer and Wegner (1998) that new statements can never be assigned to the correct speaker and therefore the cell denoting a new statements/correct speaker assignment is necessarily empty. When containing data, the remaining 11 cells of the matrix represent the frequency with which each type of response is made, aggregated across all participants.

A multinomial model of social categorization. Klauer & Wegener (1998) proposed a 2-high-threshold (2HT) multinomial model—related to the family of source monitoring models—for explaining the data obtained in the modified “who

said what?” paradigm.¹⁰ Such a model is the most appropriate choice for this task because 2HT source monitoring models provide more accurate measures of both item detection and source detection than do other types of models (Bayen et al., 1996; Yu & Bellezza, 2000). These models are sequential in nature; individuals are posited to move from one cognitive state to the next until an overt response is made. For example, before a correct assignment is made, the participant may first detect that a statement is “old” and then identify the correct speaker.

As previously mentioned, the model of social categorization (Klauer & Wegener, 1998) posits that four distinct cognitive processes account for the possible assignments in the “who said what?” paradigm; (a) item discrimination; (b) person discrimination; (c) category discrimination; and (d) guessing. Figure 1 depicts the processing-trees containing these hypothesized processes. Note that to allow for parameter values to vary as a function of the statement source, the model includes three trees, one for each source (i.e., statements made by speakers from Category A, statements made by speakers from Category B, and new statements). The rectangles in the figure represent observable events and correspond to the rows and columns of the data matrix (see Table 3). More specifically, the rectangles to the left indicate the source of a statement, and the rectangles on the right indicate the final speaker assignment provided by participants. The ellipses in between the rectangles represent

¹⁰ The two-high-threshold model of source monitoring is based on the assumption that the decision space is divided into three discrete areas by two thresholds (Bayen et al., 1996). In the present context, if one decision threshold is crossed, individuals will correctly indicate that a statement is “old”, and if the second decision threshold is crossed, the individual will correctly indicate that a statement is “new”. If neither threshold is crossed (i.e., the item is undetected) then the participant will guess either “old” or “new”.

the latent cognitive processes purported to lead to a given assignment. Because different processes can result in the same assignment, response categories may appear more than once.

Examination of the processing tree for statements made by a speaker from Category A reveals that the first branch of the tree represents the process for item discrimination. That is, given that a statement is made by a speaker from Category A, the participant will detect the statement as “old” with the probability D_A , and the participant will not detect the statement with the complementary probability $(1 - D_A)$. If the statement is detected as “old”, person discrimination is purported to occur next, and with the probability c_A the correct speaker will be identified, resulting in a correct speaker assignment. If however, the speaker is not identified with a probability of $(1 - c_A)$, then category discrimination will follow. That is, with the probability d_A , the participant will remember that the speaker was from Category A, and with the probability of $(1 - d_A)$ the participant will not remember that the speaker was from Category A. In the case in which the participant does correctly remember the category, the correct speaker will be guessed with the fixed probability $1/n$, and an incorrect speaker will be guessed with the corresponding fixed probability $(1 - 1/n)$, leading to a within-category error.¹¹ In contrast, if the category membership of the speaker is not recalled, then category membership will be guessed. Specifically, Category A will be guessed with the probability a_A , whereas Category B will be

¹¹ Consistent with the original paradigm (Taylor et al., 1978), these fixed probabilities take into account the fact that if participants are guessing the speaker, there are more opportunities for misattribution in the incorrect category (four possible incorrect assignments) than there are in the correct category (three possible incorrect assignments). Thus, n is equal to the number of speakers in a given category.

guessed with the probability $1 - a_A$. If Category B is guessed, then the wrong speaker will be assigned the statement, resulting in a between-category error. If on the other hand Category A is guessed, then the participant will next guess the speaker, with the correct speaker being assigned with the fixed probability $1/n$, and an incorrect speaker being assigned with the probability $(1 - 1/n)$ —a within-category error.

Moving back to the bottom half of the figure, if participants do not detect the statement as “old” with the probability $(1 - D_A)$, they will guess that the target is “old” with the probability b , or they will guess that the target is “new” with the probability $(1 - b)$. Guessing that the target is “new” automatically results in an incorrect assignment of “new”, whereas guessing that the statement is “old” leads to guessing the category of the speaker. If the participant then guesses that the speaker is from Category A with the probability a , they will next either guess the correct speaker with the fixed probability $1/n$, or they will guess the wrong speaker with the fixed probability $(1 - 1/n)$ —a within-category error. If the participant instead guesses that the speaker is from Category B with the probability $1 - a$, a between-category error will occur.

The probabilities for each possible assignment can be derived by summing the probabilities from each branch of a tree that leads to that assignment. For example, the probability of each assignment for statements made by speakers from Category A is given in the following equations (1 to 4):¹²

¹² The letter and subscript in quotation marks indicate the category assignment indicated by the participant (Category A = “A_{correct}”, Category B = “B_{correct}”, and new statements = “N_{correct}”) and whether or not the participant identified the correct speaker, whereas the second letter indicates the actual source of the statement (cf. Bayen et al., 1996).

$$P(\text{"A}_{\text{correct}}"|A) = D_A c_A + D_A(I - c_A) d_A (1/n) + D_A(I - c_A)(1 - d_A) a (1/n) + (1 - D_A)ba (1/n) \quad (1)$$

$$P(\text{"A}_{\text{incorrect}}"|A) = D_A(I - c_A) d_A (1-1/n) + D_A(I - c_A)(1 - d_A) a(1-1/n) + (1 - D_A)ba (1-1/n) \quad (2)$$

$$P(\text{"B}_{\text{incorrect}}"|A) = D_A(I - c_A)(1 - d_A)(1-a) + (1 - D_A) b (1-a) \quad (3)$$

$$P(\text{"N}_{\text{incorrect}}"|A) = (1 - D_A)(1-b) \quad (4)$$

The processing tree for statements made by speakers from Category B follows in a manner comparable to that for Category A speakers. However, the parameters in the trees differ in their subscripts to allow for divergent parameter strengths as a function of the speaker's category membership. Given that the statement was made by a speaker from Category B, the probability of a given assignments are represented in the equations below (equations 5 through 8):

$$P(\text{"B}_{\text{correct}}"|B) = D_B c_B + D_B(I - c_B) d_B (1/n) + D_B(I - c_B)(1 - d_B)(1 - a)(1/n) + (1 - D_B)b (1-a)(1/n) \quad (5)$$

$$P(\text{"B}_{\text{incorrect}}"|B) = D_B(I - c_B) d_B (1-1/n) + D_B(I - c_B)(1 - d_B)(1-a)(1-1/n) + (1 - D_B)b (1-a)(1-1/n) \quad (6)$$

$$P(\text{"A}_{\text{incorrect}}"|B) = D_B(I - c_B)(1 - d_B)a + (1 - D_B)ba \quad (7)$$

$$P(\text{"N}_{\text{incorrect}}"|B) = (1 - D_A)(1-b) \quad (8)$$

The processing tree for new statements is similar to the previous trees, but it is simpler than the others because fewer processes are posited. The probability of each assignment for new statements is represented in equations 9 through 11 below:

$$P(\text{"N}_{\text{correct}}"|N) = D_N + (1 - D_N) (1-b) \quad (9)$$

$$P(\text{"A}_{\text{incorrect}}"|N) = (1 - D_N) ba \quad (10)$$

$$P(\text{"B}_{\text{incorrect}}"|N) = (1 - D_N)b (1-a) \quad (11)$$

In all, the multinomial model of social categorization includes six distinct processes—three discrimination processes and three guessing processes—that are each assessed separately via their corresponding parameters. The first process is *item*

discrimination and it is represented in each statement tree by parameters D_A , D_B , and D_N according to the category of the statement. The second process is *guessing item status*, and a bias toward guessing “old” is represented by parameter b . The third process is that of *person discrimination*, which is represented by parameters c_A and c_B according to the speaker’s social category. The fourth process is that of *category discrimination*, represented by d_A and d_B by speaker’s social category. The fifth process is *guessing the category*, and a bias toward guessing Category A is represented in the model as parameter a . Finally, the sixth process is *guessing the person within the correct category*, and success at such guessing is represented in the model with the fixed probability of $1/n$, with n again equal to the number of speakers in the category. Klauer and Wegner (1998) demonstrate that each of the aforementioned parameters are process-pure, in that they only measure the process that they are associated with, and in this manner provide estimates for the role of each cognitive process in social categorization tasks such as the “who said what?” paradigm.

Identifiability, goodness of fit, and validation of the model parameters. For a model to provide accurate parameter values it first must be identifiable—that is, it should provide unique estimates for each of the parameters (Batchelder & Riefer, 1990; Kenny et al., 1998). Importantly, the model of social categorization has been shown to be identifiable after at least 1 degree of freedom is gained by placing theoretically driven restrictions on some of the parameters (Klauer & Wegener, 1998; see also Batchelder & Riefer, 1990). More specifically, Klauer and Wegener

(1998) argued that in most cases the category membership of the speaker should not impact memory for the items themselves, and thus they restrict D_A , D_B , and D_N (the parameters representing memory for the items) to be equal, obtaining an identifiable model.¹³

Moreover, if the model accurately describes the data—that is, the data map on to the processes described in the model—it will fit the data and the goodness-of-fit test (G^2) will not be significant (Reifer & Batchelder, 1988). The statistical fit of the model to the data is critical because it provides some evidence that the processes the model posits are in fact occurring in the order in which they are represented.

Importantly, across eight experiments, the multinomial model of social categorization has been shown to fit the data (Gawronski et al., 2003; Klauer & Wegener, 1998; Klauer, Wegener, & Ehrenberg, 2002).

Additionally, before a model is considered to be valid, it is crucial to demonstrate that the hypothetical parameters contained within it map onto the processes that they represent (e.g., Bayen et al., 1996; Buchner, Erdfelder, & Vaterrodt-Plünnecke, 1995; Klauer & Wegener, 1998). Accordingly, Klauer and Wegener (1998) conducted empirical tests to substantiate their claim that the parameters in their model provide process-pure estimates of the cognitive processes thought to occur during social categorization. Specifically, Klauer and Wegener conducted five experiments using the modified “who said what?” paradigm in which they independently manipulated the experimental factors corresponding to the

¹³ Different restrictions were imposed to obtain an identifiable model when item recognition was expected to vary (see Klauer & Wegener, 1998, Study 4).

respective hypothesized processes represented in the model. The goal of each experiment was to demonstrate that a manipulation intended to impact a specific process influenced the parameter said to capture that process in theoretically meaningful ways, and that it did not influence any of the other parameters, thereby establishing that each parameter assesses only what it is intended to. In the first of these experiments, parameter b or the tendency to guess “old” was examined by manipulating the number of new items (either 48 or 144) presented in the testing phase of the experiment. It was predicted that the more new items present, the more hesitant participants would be to guess “old” (Buchner et al., 1995) and the lower parameter b would be. Consistent with predictions, participants exposed to 144 new statements exhibited significantly lower parameter b values than did participants exposed to 48 new statements. Importantly, the groups did not differ on any of the other parameters in the model.

In the second validation experiment, Klauer and Wegener (1998) examined the item discrimination parameters (D_A , D_B , and D_N), or the ability of participants to detect old items, by manipulating the similarity of the new items with the old items. It was predicted that relative to the control group, item discrimination would be reduced in the group exposed to new items that were highly similar to the old items. Indeed, participants in the similar target-new group exhibited a significant decrease in their item discrimination relative to controls. Notably, discrimination for new items (D_N) was reduced to nearly zero in the similar target-new group. Again, the groups did not significantly differ on any of the other parameters.

In an effort to validate the category discrimination parameters (d_A and d_B), a third experiment was conducted in which the category defining each group was manipulated. Half of the participants were exposed to a group discussion in which the speakers differed in their hometown (Aachen vs. Münster), whereas the other half of the participants were exposed to a group discussion in which the speakers differed in their academic status (student vs. lecturer). Klauer and Wegener (1998) reasoned that given that academic status is more accessible to students than is hometown, and that the topic of the discussion—how the university could be improved—was more relevant for the groups defined by academic status, categorization based on academic status should be greater than that based on hometown. Consistent with predictions, category discrimination was greater in the group in which the categories were defined by academic status than in the group in which categories were defined by hometown. Additionally, none of the other parameters significantly differed as a function of the manipulation.

To examine the validity of the parameter associated with guessing category membership (a), response preferences for one category over the other were manipulated. Specifically, Klauer and Wegener (1998) varied the number of critical statements that male and female speakers made regarding the university, thereby creating a relation between the social category and statements. Hence, half of the participants viewed a discussion in which the women were more critical than the men, whereas the other half of the participants viewed a discussion in which the men were more critical than the women. The number of positive and negative statements

assigned to women and men in each group was coded. As predicted, the response bias parameter a , for assigning positive statements to women, was larger in the group with more critical men than in the group with critical women, whereas the response bias parameter a , for assigning negative statements to women, was larger in the group with critical women than with critical men. In line with the previous experiments, none of the other parameters differ significantly as a function of group.

Finally, to assess the validity of the person discrimination parameters (c_A and c_B) the similarity of the speakers within the categories was manipulated. In one experimental group, participants observed a discussion between similar looking men and distinct women, whereas in the second experimental group participants observed a discussion between distinct men and similar looking women. It was predicted that in the group with similar looking men, the person discrimination parameter for men would be reduced, whereas in the group with similar looking women, the person discrimination parameter for women would be reduced. Results partially conformed to predictions in that participants observing the group with similar women exhibited a smaller person discrimination parameter for women than for men. In contrast to predictions, however, there was no difference in the person discrimination parameters in the group with similar men. Klauer and Wegener (1998) argued that this result is not entirely surprising given that men are typically more discriminable than are women (see also Lorenzi-Cioldi, 1993, as cited in Klauer & Wegener, 1998). Importantly, the similarity manipulation only affected the person discrimination parameters, providing evidence for discriminant validity and process purity.

Overall, then, the multinomial model of social categorization (Klauer & Wegener, 1998) has been shown to be an impressive theory of the decision processes involved in the “who said what?” paradigm. The model is identifiable and its parameters have been empirically validated. Consequently, the values derived from the model provide unique and independent estimates of the various processes that contribute to assignment decisions in the “who said what?” paradigm, thereby importantly contributing to our current understanding of social categorization and individuation.

Study 2

The primary purpose of the current study is to examine whether enhancing males’ internal motivation to respond without prejudice toward gay men will lead to both greater liking for, and willingness to interact with gay men. Additionally, Study 2 will examine the impact of increasing IM-G on the individuation and categorization of gay male targets, processes thought to be fundamental to the process of stereotyping (Brewer, 1988; Fiske et al., 1999; Taylor, 1981). Finally, the role of individuation and categorization in liking for, and willingness to interact with gay men will be directly examined. To this end, femininity self-ascriptions will be manipulated with the conceptual priming task employed in Study 1. More specifically, half of the participants will be exposed to the feminine primes, whereas the other half of the participants will receive the control primes. Manipulation checks will then be administered to ensure that the primes impact femininity self-ascriptions.

To unobtrusively examine the influence of priming condition on individuation and categorization processes, the modified “who said what?” paradigm (Klauer & Wegener, 1998) will serve as the primary dependent measure. The paradigm will be adapted such that only male speakers will appear, and for half of the participants categorization will be based on sexual orientation (i.e., gay male speakers or heterosexual speakers), whereas for the other half of participants categorization will be based on hometown (i.e., Athens area or Pittsburgh area). Although the primary focus of the study will be to examine the impact of priming manipulation on the individuation and subsequent categorization of gay targets, the hometown condition will be included to act as a control for two reasons. First, the hometown condition will serve to test the notion that the priming manipulation should specifically influence cognitive processes related to sexual prejudice but not social categorization more generally. This prediction is consonant with the Motivation and Opportunity as Determinants (MODE) model (Fazio & Towles-Schwen, 1999), which asserts that motivation exerts an effect on behavior only when the opportunity to do so is available—thus, if one is motivated to behave in a nonprejudiced manner toward stigmatized targets, behavior will be altered toward such targets but will not change toward nonstigmatized targets. A second purpose of the control condition is to provide data to rule out the notion that merely providing category labels (heterosexual vs. gay and Athens vs. Pittsburgh) for the speakers invariably leads participants to organize information in memory by category membership (Brewer et al., 1995).

To examine the categorization and individuation data, the multinomial model of social categorization will be employed (Klauer & Wegener, 1998). The model will be fit with different parameters for each priming condition and category group, necessitating alteration of the parameter subscripts for the four resulting groups (see Table 9 for a detailed description of the subscripts, and see Figures 2, 3, 4, and 5 for the model diagrams). The model will not initially be identifiable, and thus a number of restrictions will be introduced (Bachelder & Riefer, 1990; Klauer & Wegener, 1998). To obtain an identifiable model, prior researchers have typically restricted the item discrimination parameters (e.g., Klauer & Wegener, 1998; Klauer et al., 2002). However, because previous research has provided some evidence that motivation to attend to one category or another can lead to differential item memory (Brewer, Weber, & Carini, 1995; Klauer et al., 2002; Simon & Hastedt, 1997), and the priming manipulation is expected to increase motivation to process information associated with the gay target, the item discrimination parameters (D_A , D_B) for statements made during the discussion, will be allowed to vary freely for each priming condition and category group. However, because the probability of guessing a statement is “old” should not be influenced by the experimental manipulations, the b parameters will be set equal across condition and group (cf. Klauer & Wegner, 1998, Study 3). Additionally, the experimental manipulations should not influence participants’ ability to detect new statements as new and thus the parameters for distractor detection (D_{N1} , D_{N2} , D_{N3} , D_{N4}) will be set equal. Finally, because the content of the statements will not be correlated with the social category membership of the speakers,

participants' tendency to guess that a statement was made by a speaker from Category A should not differ across conditions. Hence, all of the a parameters (a_1, a_2, a_3, a_4) will also be set equal.

Following the assignment task, participants will indicate their liking for each of the speakers and their willingness to interact with each. These items will serve as measures of outgroup and ingroup liking, and of willingness to interact with stigmatized and nonstigmatized individuals.

Finally, to ensure that the priming manipulation impacted internal motivation to respond without prejudice, but not external motivation to respond without prejudice, participants will complete the IM-G and EM-G scales.

The model parameters will be examined to assess the contributions of item discrimination, category discrimination, person discrimination, and guessing to subsequent memory processes. The primary parameters of interest will be the category and person discrimination parameters, as they provide unique estimates for categorization and individuation, respectively. One might presuppose that these processes are reciprocal, in that as individuation increases, categorization is reduced. For example, prior research has shown that categorization on the basis of devalued social group memberships is positively related to the perceiver's level of prejudice toward members of such groups (Stangor et al., 1992; Walker & Antaki, 1986). Hence, a reasonable prediction regarding the impact of motivation to respond without prejudice (i.e., the priming manipulation) on the category discrimination parameters is that as motivation increases categorization will decrease. Nevertheless, these

studies employed the original “who said what?” paradigm which did not enable researchers to disentangle the unique contributions of person and category discrimination (Klauer & Wegener, 1998). Consequently, it is not entirely clear how prejudice or motivation to respond without prejudice will actually influence categorization and individuation processes.

More recent data derived from Klauer and Wegener’s (1998) modified “who said what?” paradigm (Gawronski et al., 2003, Study 2) offers some insight into the problem by demonstrating that as the strength of stereotypic associations goes down, categorization actually increases. That is, Gawronski and his colleagues found that individuals with weak stereotypic associations categorize blacks on the basis of race to a greater extent than do individuals with strong stereotypic associations. In line with these findings, it is predicted that individuals who are highly motivated to respond without prejudice will exhibit relatively high category discrimination parameters. First, motivated perceivers individuate targets to a greater extent in general (Fiske et al., 1999; Fiske & Neuberg, 1990)—resulting in a greater focus on all aspects of the target including category membership. Second, motivated individuals may not feel that they have reason to inhibit category activation because they do not believe that they run the risk of corresponding stereotype activation (Devine et al., 2002; Sinclair & Kunda, 1999). Conversely, motivated individuals may be particularly concerned with social categories because they want to avoid inappropriate or prejudiced responses (Monteith et al., 2002). Thus, individuals who

are high in internal motivation to respond without prejudice should exhibit large category discrimination parameters (d_A , d_B).

In contrast with Gawronski et al.'s (2003) findings, it is not predicted that highly motivated individuals will exhibit lower category discrimination parameters than their less motivated counterparts. To begin, Gawronski's study differs from the proposed study in that it included statements that were consistent with stereotypes, and thus individuals with higher stereotypic associations could have found such statements easier to process, leading them to rely on the category information to a lesser extent than they typically would have (Gawronski et al., 2003; Sherman, Lee, Bessenoff, & Frost, 1998). Given that the proposed study will not vary the stereotypic content of the statements made by the speakers—that is, none of the statements seem like they would be more likely to be made by a gay speaker than by a heterosexual speaker—individuals who are less motivated to respond without prejudice should be inclined to rely on this category information. That is, research has reliably shown that prejudice is positively related to the accessibility of stigmatized social categories (Lepore & Brown, 1997), and further, that individuals who are not motivated to respond without prejudice exhibit such automatic associations and corresponding behavioral responses (Devine et al., 2002; Fazio et al., 1995). Overall then, less motivated participants should exhibit relatively high category discrimination parameters (i.e., d_A , d_B) for stigmatized targets, but for a different reason than their highly motivated counterparts. Thus, it is predicted that motivated and less motivated participants will not exhibit different category discrimination parameters for gay

speakers, but that both groups of participants will evince higher categorization parameters for gay speakers than for heterosexual speakers.

In contrast, because motivation has been consistently shown to lead individuals to focus more intently on target attributes (Pendry & Macrae, 1996; Sherman et al., 2005; Stangor et al., 1992), and a lack of motivation can lead to reduced individuation (Fiske, 1993), it is predicted that individuals motivated to respond without prejudice (i.e., in the feminine prime condition) will exhibit higher person discrimination parameters (i.e., c_A , c_B) for gay speakers than will less motivated individuals (see also Gawronski et al., 2003).

Because participants receiving the feminine primes are expected to individuate targets to a greater extent than control participants, and research has shown that the acquisition of information—as long as it is not negative or stereotype consistent—generally leads to greater liking (Hebl & Dovidio, 2005; Lassiter & Stone, 1984), it is predicted that those primed with femininity will exhibit more liking for gay speakers than will control participants. It is further anticipated that individuation, by increasing liking, will lead to an enhanced desire to interact with gay speakers, and thus those primed with femininity are expected to be more willing to interact with gay speakers than will those receiving the control sentences. As categorization parameters (i.e., d_A , d_B) are not expected to differ as a function of the priming manipulation, a main effect of categorization on liking and willingness to interact with gay speakers is not expected. However, because motivated and less motivated participants are expected to categorize for different reasons, it is expected

that categorization will interact with individuation to produce differential levels of liking for and willingness to interact with gay speakers. More specifically, it is anticipated that categorization will be positively related to liking for and willingness to interact with gay speakers when it is accompanied by high levels of individuation (i.e., c_A , c_B). However, categorization is expected to be negatively related to these variables when it is accompanied by low levels of individuation. A three-way interaction is also anticipated, as this pattern is expected to be stronger for those receiving the feminine primes than for those receiving the control primes.¹⁴

The present work will importantly contribute to the literature in several ways. To begin, it will be the first to examine whether increases in IM-G can influence behaviors related to prejudice, as well as the extent to which gay men are categorized and individuated. Answering this question is important because it will lend insight into whether or not increasing IM-G translates into behaviors and cognitive processes related to sexual prejudice (Hebl & Dovidio, 2005; Walker & Antaki, 1986). Furthermore, if the results show that behaviors related to more positive interactions between stigmatized and nonstigmatized individuals (Hebl & Dovidio, 2005) can be induced by priming men with femininity, these data will provide evidence that the gender gap in sexual prejudice can be bridged by encouraging men to get in touch with their feminine side.

Additionally, the current study will be the first to examine *how* motivation related to prejudice separately impacts categorization and individuation processes. As

¹⁴ As priming condition is not intended to impact processes related to nonstigmatized targets, predictions regarding the impact of the primes on ingroup liking and willingness to interact with heterosexual, Athens, and Pittsburgh speakers, are not made here.

previously mentioned, prior research has confounded these two processes and thus not much is known with certainty regarding how each process is influenced by motivation. Exploring this question is critical because it will provide insight into *why* IM impacts prejudice. For instance, Devine et al. (2002) found that motivation to respond without prejudice importantly predicts implicit prejudice, but it is not apparent why this is the case. It is posited here that motivated individuals utilize social categorization as a cue to avoid prejudice, and that they subsequently individuate stigmatized targets to a greater extent (Monteith et al., 2002). That is, categorization and individuation are utilized in conjunction by motivated individuals to circumvent prejudice. However, the data will also address the possibility that motivated individuals avoid prejudiced responses by recategorizing or decategorizing stigmatized individuals (Gaertner et al., 2000; Park & Judd, 2005).

It is possible, for example, that individuals who are highly internally motivated to respond without prejudice do not exhibit automatic prejudice because they recategorize targets as members of nonstigmatized social categories (e.g., the individual is categorized as a *man* rather than a *black*; Sinclair & Kunda, 1999). If the activated category makes the target an ingroup member (i.e., male) rather than an outgroup member (i.e., black), positive associations should be activated (Perdue, Dovidio, Gurtman, & Tyler, 1990), potentially explaining the reduction in automatic prejudice that Devine and her colleagues found. The pattern of data that would fit this recategorization explanation includes lower categorization parameters for gay speakers in the feminine-prime condition than in the control condition. Moreover, in

the feminine-prime condition, categorization parameters for gay and heterosexual speakers would not differ from one another. Finally, individuation parameters would not likely change as a function of priming condition.

On the other hand, individuals who are highly motivated may not exhibit implicit prejudice because they individuate stigmatized targets to a greater extent than do less motivated individuals, and as such, they hold cognitive representations of stigmatized targets that differ from those of their less motivated counterparts (i.e., that do not include the stigmatized category; Lepore & Brown, 1997). The pattern of data that could provide support for this decategorization perspective would include increased individuation parameters and decreased categorization parameters for gay speakers in the feminine-prime condition relative to the control-prime condition.

Hypotheses

Hypothesis 1: The impact of the primes on self ascriptions. Consistent with results from Study 1, it is predicted that individuals who receive the feminine primes will endorse femininity self-ascriptions to a greater extent than will participants receiving the control primes. No differences are expected to arise in masculinity self-ascriptions or compassion self-ascriptions as a function of prime condition

Hypothesis 2: The impact of the primes on mood. Also in line with Study 1, no differences in mood are expected to arise as a function of prime condition.

Hypothesis 3: Relationships between femininity-self ascriptions, IM-G, and EM-G. It is predicted that femininity self-ascriptions and IM-G will be positively

related to IM-G and unrelated to EM-G. No specific predictions are made regarding the relationship between IM-G and EM-G.

Hypothesis 4: The impact of the primes on IM-G and EM-G. It is predicted that relative to individuals in the control condition, those individuals exposed to the feminine primes will exhibit greater IM-G. The priming manipulation is not expected to influence EM-G scores.

Hypothesis 5: The model fit and restrictions. It is predicted that the saturated model¹⁵ with the aforementioned restrictions will fit the data. That is, the G^2 statistic will be nonsignificant.

Hypothesis 6: Item discrimination parameters (Ds). As motivation to attend to one category or another can lead to differential item memory (Brewer et al., 1995; Klauer et al., 2002; Simon & Hastedt, 1997), and the priming manipulation is expected to increase motivation to process information associated with the gay target, it is predicted that only the item discrimination parameters (D_s) for statements made by gay speakers will be influenced by the priming manipulation. More specifically, the following four predictions are made:

1. In the group in which the categories are defined by hometown, the item discrimination parameters for statements made by Pittsburgh speakers will not differ as a function of priming manipulation (i.e., $D_{B3} = D_{B4}$).

¹⁵ A saturated model is one that utilizes the same number of parameters as there are degrees of freedom (Klauer & Wegener, 1998).

2. In the group in which the categories are defined by hometown, the item discrimination parameters for statements made by Athens speakers will not differ as a function of priming condition (i.e., $D_{A3} = D_{A4}$).
3. In the group in which the categories are defined by sexual orientation, the item discrimination parameters for statements made by heterosexual speakers will not differ as a function of priming manipulation (i.e., $D_{B1} = D_{B2}$).
4. In the group in which the categories are defined by sexual orientation, the item discrimination parameters for statements made by gay speakers will be larger in the feminine-prime condition than in the control-prime condition (i.e., $D_{A1} > D_{A2}$).

Hypothesis 7: Category discrimination parameters (ds). Individuals who are motivated to respond without prejudice are expected to individuate targets to a greater extent than those who are less motivated (Fiske et al., 1999; Fiske & Neuberg, 1990)—resulting in a greater focus on all aspects of the target including category membership. Less motivated participants are also expected to have high category discrimination parameters for gay speakers due to their reliance on categorical information. Thus, it is predicted that category discrimination parameters will not vary as a function of priming condition. Additionally, because the priming manipulation is expected to motivate participants to individuate gay targets specifically, it is expected that only the category discrimination parameters (*ds*) for

the category defined by sexual orientation will be influenced by the priming manipulation. The following predictions are made:

1. In the category comprising Athens speakers, the category discrimination parameters will not differ as a function of priming condition ($d_{A3} = d_{A4}$).
2. In the category comprising Pittsburgh speakers, the category discrimination parameters will not differ as a function of priming condition ($d_{B3} = d_{B4}$).
3. In the category comprising heterosexual speakers, the category discrimination parameter will not differ as a function of priming condition ($d_{B1} = d_{B2}$).
4. In the category comprising gay speakers, the category discrimination parameter will not differ as a function of priming condition ($d_{A1} = d_{A2}$).
5. Participants in both priming conditions are expected to evince higher category discrimination parameters for gay speakers than for heterosexual speakers [$(d_{A1} = d_{A2}) > (d_{B1} = d_{B2})$].
6. It is predicted that among participants in the control condition, those observing the group in which the categories are defined by sexual-orientation will have higher categorization parameters than will those observing the group in which the categories are defined by hometown [$(d_{A2} = d_{B2}) > (d_{A4} = d_{B4})$]. That is, providing category labels in the experimental task will not inevitably lead to categorization, but rather, categorization effects will diverge as a function of the nature of the categories themselves (see also, Klauer & Wegner, 1998, Study 3).

Hypothesis 8: Person discrimination parameters (cs). Perceivers who are motivated to process target-related information have been shown to attend to the target's personal attributes to a greater extent than do less motivated participants (Brewer et al., 1995; Pendry & Macrae, 1996). Thus, it is expected that the feminine prime—by increasing motivation to individuate gay speakers—will lead participants to exhibit higher person-discrimination parameters than will individuals in the control condition. Moreover, because the feminine prime should only influence motivation related to gay speakers, the priming manipulation is only expected to impact the person discrimination parameters (cs) for gay speakers. The following specific predictions are made:

1. The person discrimination parameters for Athens speakers will not differ as a function of priming condition ($c_{A3} = c_{A4}$).
2. The person discrimination parameters for Pittsburgh speakers will not differ as a function of priming condition ($c_{B3} = c_{B4}$).
3. The person discrimination parameters for heterosexual speakers will not differ as a function of priming condition ($c_{B1} = c_{B2}$).
4. The person discrimination parameter for gay speakers will be larger in the feminine-prime condition than in the control-prime condition ($c_{A1} > c_{A2}$).
5. In the feminine-prime condition, the person discrimination parameter will be higher for gay speakers than for heterosexual speakers ($c_{A1} > c_{B1}$).

Hypothesis 9: Relationships between prime condition, categorization, and individuation. As participants primed with femininity are expected to exhibit higher

internal motivation to respond without prejudice than will those individuals in the control-prime condition, it is expected that those in the feminine-prime condition will exhibit greater individuation of gay speakers than will those in the control condition (see Figure 6). Categorization of gay speakers is not expected to differ as a function of priming condition (see Figure 6).

Hypothesis 10: Relationships between prime condition, individuation, categorization, and liking for and willingness to interact with gay targets. As individuals in the feminine-prime condition are expected to individuate gay targets to a greater extent than those in the control condition, and individuation should lead to enhanced liking (cf. Lassiter & Stone, 1984), participants in the feminine-prime condition are expected to evince both greater liking for and greater willingness to interact with gay speakers than will control participants (see Figure 7).

It is further anticipated that individuation and categorization will independently and jointly contribute to liking of and willingness to interact with gay speakers. Priming condition, individuation, and categorization are also expected to interact. The following specific predictions are made:

1. A main effect of individuation is expected, such that individuation will be positively related to liking of and willingness to interact with gay speakers.
2. No main effect of categorization is predicted for liking of, and willingness to interact with gay speakers.
3. A two-way interaction between individuation and categorization is expected, such that categorization will be positively related to liking of and willingness

to interact with gay speakers when it is accompanied by high levels of individuation. However, categorization is expected to be negatively related to these variables when it is accompanied by low levels of individuation.

4. A three-way interaction is anticipated, such that the pattern described above (i.e., prediction 3) will be stronger for individuals in the feminine-prime condition than in the control-prime condition.

Hypothesis 11: Individuation as a mediator of the relationship between priming condition and liking for, and willingness to interact with gay targets. As mentioned in Hypothesis 10, it is expected that individuation will serve as a mediator for both the relationship between priming condition and liking of gay speakers (see Figure 8) and the relationship between priming condition and willingness to interact with gay speakers (see Figure 9).

Hypothesis 12: Relationships between Internal Motivation, Individuation, and Categorization. It is predicted that examination of the relationships between IM-G, individuation, and categorization will reveal the following pattern:

1. IM-G will be positively related to individuation
2. IM-G will be unrelated to categorization.
3. Categorization and Individuation will not be related.

Method

Participants

Ninety-three male introductory psychology students at Ohio University participated for partial course credit. To ensure a reasonable distribution of prejudice

levels across the conditions, participants were recruited on the basis of their level of prejudice (i.e., either high or low; Herek, 1988). Approximately twenty-three participants were randomly assigned to each experimental group (cf. Gawronski et al., 2003; Klauer & Wegener, 1998).

Instruments

Attitudes toward gay men (ATG) scale. Prejudice scores were obtained using the ATG subscale of the ATLG scale (Herek, 1988; see Appendix G). The ATLG is a 20-item measure of prejudice toward lesbians and gay men consisting of two subscales: Attitudes toward Lesbians (ATL) and Attitudes toward Gay Men (ATG), each comprising 10 items measured on a 1 (*strongly disagree*) to 9 (*strongly agree*) rating scale, with higher scores indicating greater prejudice. The ATG contains different items, each assessing disgust (e.g., “I think male homosexuals are disgusting.”) as well as corresponding endorsement of social inequity (e.g., “Male homosexuals should *not* be allowed to teach school.”). Reliability analyses indicated a high level of internal consistency for the ATG ($\alpha = .93$).

Scrambled Sentence Tests. As in Study 1, the adapted Scrambled Sentence Test (Srull & Wyer, 1979) was employed to either nonconsciously enhance feminine self-ascriptions or to serve as a control (see Appendices A and B).

Measure of compassion, masculinity self-ascriptions, and femininity self-ascriptions. The degree to which participants endorse compassion, masculinity, and femininity as true of the self was again ascertained via the 60-item Bem (1974) Sex-Role Inventory (BSRI; see Appendix C).

Measure of mood and arousal. Global mood was assessed via the modified version of the Affect-Arousal Scale (Chartrand, 2001; Rosenhan et al., 1981; see Appendix D). Reliability for the entire scale was not satisfactory ($\alpha = .41$). However, reliability for the affect subscale was satisfactory ($\alpha = .85$), and thus subsequent analyses focus on this subscale.

Pool of statements for the categorization task. A pilot study was conducted ($N = 78$) to generate statements for the categorization task (see full description of the task below). Participants were told that the purpose of the study was to obtain feedback from Ohio University students regarding how various aspects of the university could be improved, and that their task was to make suggestions—in complete sentence format—on how several areas of the university could be enhanced. In the end, the final pool included 152 viable and nonredundant statements related to six topic categories (i.e., (a) course requirements; (b) classrooms/professors; (c) the library and other study facilities; (d) dining options and locations; (e) campus parking and housing issues; (f) recreation and the ping center; see Appendix H for a complete list).

Photographs for the categorization task. Eight head and shoulder color pictures of Caucasian male college-age students, previously normed to be average in attractiveness (Ratcliff, 2003), served as the photographs in the categorization task (see below). These same eight photographs were employed in both experimental conditions and were divided into categories in the same manner for both conditions. For example, the photographs of “Alan”, “Tom”, “Matt”, and “John” served to

represent both the heterosexual and the Athens speakers, whereas the photographs of “David”, “Joe”, “Steven”, and “Bill” served to represent both the gay and the Pittsburgh speakers.

Categorization task. The categorization task was a variant of the “who said what?” paradigm, modeled after the procedures employed by Klauer and Wegener (1998). At the start of the task participants were randomly assigned to either the condition in which the group in which social categories are defined by sexual orientation (i.e., half of the speakers will be identified as heterosexual and the other half will be identified as gay), or the group in which the social categories are defined by hometown (i.e., half of the speakers will be identified as hailing from the Athens area and the other half will be identified as hailing from the Pittsburgh, Pennsylvania area). Participants in the sexual-orientation condition received the following instructions (cf. Klauer & Wegener, 1998; Walker & Antaki, 1986):

We are interested in gaining an understanding of Ohio University students concerns regarding the university, and thus we have recruited students who represent a variety of perspectives on campus to participate in discussion groups related to the conditions on campus. In the next task you will observe snippets from one of our discussion groups. The eight speakers whom you will be observing today are male undergraduate students who are either gay or heterosexual. As each person speaks, his statement will appear beneath his photograph. Captions will appear above the photographs to identify the

speaker by both his name and the group from which he was recruited. Your task is to try to form an impression of the discussion group as a whole.

Participants in the hometown condition instead received the following instructions:

We are interested in gaining an understanding of Ohio University students concerns regarding the university, and thus we have recruited students who represent a variety of perspectives on campus to participate in discussion groups related to the conditions on campus. In the next task you will observe snippets of one of our discussion groups. The eight speakers whom you will be observing today are male undergraduate students whose hometown is either in the Athens, Ohio area or in the Pittsburgh, Pennsylvania area. As each person speaks, his statement will appear beneath his photograph. Captions will appear above the photographs to identify the speaker by both his name and the group from which he was recruited. Your task is to try to form an impression of the discussion group as a whole.

After the presentation of the instructions, participants watched a succession of statements (in large 20 pt type font) that appeared on the computer screen beneath a given speaker's photograph. A caption (also in large 20 pt type font) appeared above each picture to identify the speaker by name and the appropriate group membership (i.e., either "heterosexual" or "gay" in the sexual-orientation condition, or "Athens" or "Pittsburgh" in the hometown condition). Each statement and photograph remained on the screen for 7 s with an interstimulus interval of 0.5 s. Respective speakers made 1 statement per round and there were 6 rounds, for a total of 6 statements per speaker

and 48 statements total. The order of the speakers within each round was randomized for every participant.

During the test phase of the task, all of the statements appearing during the discussion, as well as 48 new statements¹⁶ were individually presented to participants in a random order. Participants were instructed to indicate “old” if they recognized the statement from the discussion, or to indicate “new” if they did not recognize the statement. Following a “new” response, the next statement appeared. If the participant responded “old”, they were then asked to indicate which speaker made the statement by clicking on a picture of the appropriate speaker. Participants were instructed to guess if they did not remember the speaker.

Liking and Willingness to interact questions. To assess liking for and willingness to interact with stigmatized and nonstigmatized targets, participants were shown slides depicting each of the speakers in a randomized order. Their task was to answer questions regarding liking and willingness to interact with each speaker (Vescio, Judd, & Kwan, 2004; see Appendix I). The questions were presented one at a time with each speaker’s photograph appearing above the question. Each question was asked for each speaker before the next question was asked. Reliability analyses revealed satisfactory levels of internal consistency for both liking toward all gay/Pittsburgh speakers ($\alpha = .93$), liking toward all heterosexual/Athens speakers ($\alpha = .92$), willingness to interact with the gay/Pittsburgh speakers ($\alpha = .83$), and willingness to interact with the heterosexual/Athens speakers ($\alpha = .83$). Hence, rating

¹⁶ Participants were randomly assigned to receive one of two sets of actual statements and distractor statements. The statements were counterbalanced across participants in each condition.

scores were averaged across items to represent a liking score for each speaker. Then, indices of outgroup and ingroup liking were computed by averaging across scores for gay and heterosexual targets, respectively. (cf. Vescio et al., 2004). Similar indices were created for willingness to interact with each group of speakers (i.e., gay, heterosexual, Pittsburgh, Athens).

IM-G and EM-G. Motivation to respond without prejudice toward gay men was again assessed via the adapted version of the combined IM-G and EM-G scales (see Appendix E). Reliability analyses revealed satisfactory levels of internal consistency for both IM-G ($\alpha = .83$), and EM-G ($\alpha = .76$).

Funnel debriefing questionnaire. To probe for general suspicion or awareness concerning the priming manipulation, participants completed the same funnel debriefing questionnaire employed in Study 1 (see Appendix F). In addition, as a manipulation check participants indicated the social category membership of each speaker (i.e., gay/heterosexual or Athens/Pittsburgh).

Procedure

On arrival, participants—run in groups of 1 to 4—were greeted by a female experimenter and seated at a desk in front of a computer monitor to complete a study on “Understanding Ohio University students’ experiences on campus.” Participants were then randomly assigned to receive either the feminine or the control version of the Scrambled Sentence Test. The experimenter explained that working on the scrambled sentences was intended to help participants’ clear their minds before the actual experiment began (cf. Chartrand, 2001).

Following the Scrambled Sentence Test, participants began the computerized portion of the experiment, during which time they first completed the BSRI and Affect-Arousal Scale. Then participants were randomly assigned to one of the two categorization conditions. After the test phase of the categorization task ended, participants first completed the liking and willingness to interact questions, and then the IM-G and EM-G scales.¹⁷ At the conclusion of the experiment, participants were paced through the funnel-debriefing questionnaire and were fully informed of the true purpose of the research.

Results

Manipulation Checks

Funnel debriefing. Examination of responses to the funnel debriefing questions revealed that no participant guessed the true purpose of the priming manipulation, nor had they previously encountered the Scrambled Sentence Test. All participants also successfully identified the category memberships of each speaker. However, six participants identified with a sexual orientation other than heterosexual, and eleven participants were judged by the experimenter to have rushed through the experiment without attending to directions. Thus, seventeen participants were removed from the data set. Additionally, due to a computer malfunction, data from four participants were lost. Hence, the final data set included 72 participants.

¹⁷ Although it is desirable to measure mediators before outcome variables if possible (Kenny et al., 1998), the IM-G and EM-G are measured after the categorization task in order to avoid participant awareness bias. That is, completing the IM-G and EM-G may lead participants to conclude that the purpose of the experiment is to examine prejudice toward gay men, thereby introducing demand characteristics that result in participants altering their responses on the categorization task.

Hypothesis 1: Impact of primes on self-ascriptions. To assess the impact of primes on self-ascriptions, the feminine, masculine, and compassion items from the BSRI were subjected to separate independent t -tests. Replicating Study 1, participants reported higher femininity self-ascriptions in the feminine-prime condition than in the control-prime condition (see Table 5 for means), $t(70) = 2.39, p = .02, d = .56$.

The masculinity and compassion self-ascriptions were subjected to similar analyses. Examination of the data revealed that priming condition did not impact either masculinity self-ascriptions ($t < 1$), or compassion self-ascriptions ($t < 1$; see Table 5).

Hypothesis 2: Impact of primes on affect and arousal. To test the possibility that the priming manipulation impacted mood, affect scores were examined as a function of priming condition. As predicted, priming condition did not significantly impact mood, ($t < 1$; see Table 5).

Relationships between Femininity Self-ascriptions, IM-G, and EM-G

Hypothesis 3: Correlations between femininity self-ascriptions and motivational variables. Consistent with Study 1, femininity self-ascriptions were positively related to IM-G ($r = .31, p < .01$) and unrelated to EM-G ($r = .03, p > .05$). Additionally, IM-G and EM-G were unrelated ($r = .16, p > .05$).

Priming and Motivation to Respond Without Prejudice

Hypothesis 4: The impact of priming manipulation on IM-G and EM-G. To examine the impact of the priming manipulation on internal motivation to respond without prejudice toward gay men, IM-G scores were subjected to an independent t -

test. As depicted in Table 6, individuals primed with femininity exhibited marginally greater internal motivation to respond without prejudice toward gay men than did those in the control-prime condition $t(70) = 1.69, p < .10, d = .40$.¹⁸

A similar analysis conducted on EM-G scores revealed no significant differences as a function of priming condition ($t < 1$; see Table 6).

Multinomial Model Analyses

As testing hypotheses with multinomial models differs from hypothesis testing via traditional statistical methods (Klauer & Wegener, 1998, Appendix A; Riefer & Bachelder, 1988), the process as it relates to the proposed study will be briefly described here. To begin, in order to examine the impact of both priming conditions on the categorization of gay and heterosexual speakers, the original model (see Figure 1) must be doubled—one representation per condition (see Figures 2 and 3). To additionally examine the impact of priming condition on the categorization of groups defined by hometown, the revised model is then doubled (see Figures 4 and 5). Next, the parameters of the final joint model (i.e., Figures 2, 3, 4, and 5 combined) are indexed by both priming condition—feminine primes vs. control primes—and categorization condition—sexual orientation categories vs. hometown categories—to allow for different parameter estimates in each of the resulting four conditions (see Table 4 for the parameter subscripts). If the initial model fits the data, then specific hypotheses can then be tested by placing restrictions on the parameters under scrutiny

¹⁸ As with Study 1, femininity self-ascriptions could serve to mediate the relationship between priming condition and IM-G. Indeed, a test for mediation revealed that this relationship does drop from marginally significant to nonsignificant when femininity is added to the model. However, the change in the coefficients is minimal (i.e., from $B = 1.68$ to $B = 1.04$) and nonsignificant, $Z = .41$.

and examining the impact of those restrictions on the change in the goodness-of-fit test (ΔG^2). If power is satisfactory and two parameters are restricted to be equal, a significant increase in the goodness of fit test¹⁹ indicates that the parameters are significantly different, whereas if there is not a significant increase, the parameters are considered to be equivalent. For instance, the hypothesis that the priming manipulation will not impact the categorization parameters in the group defined by hometown, but will differentially impact the categorization parameters in the group defined by sexual orientation, can be tested by first setting the categorization parameters in the hometown group equal to one another. If there is not a significant increase in the chi-square value following the restriction, it can be concluded that the categorization parameters do not differ as a function of priming condition. To test the second part of the prediction, the categorization parameters in the sexual-orientation condition would then be restricted to be equivalent. If a significant increase results, the hypothesis that these categorization parameters differ as a function of priming condition is supported.

Hypothesis 5: Model fit and restrictions. The frequencies for each cell of the data matrix (see Table 7) were calculated separately for each of the four conditions and entered into the Apple Tree software program. To obtain an identifiable model, the item discrimination parameters (D_s) had to be set equal to one another. However, setting all of the item discrimination parameters to be equal resulted in a model that did not fit the data. Therefore, the item discrimination parameters were set to be equal

¹⁹ The loss of goodness of fit is obtained by subtracting the goodness of fit of the unrestricted model from the restricted model. To test the significance of this chi-square distributed loss value, the difference in the degrees of freedom for the two models is calculated (Klauer & Wegener, 1998).

within each experimental condition (i.e., $D_{A1} = D_{B1} = D_{N1}$; $D_{A2} = D_{B2} = D_{N2}$; $D_{A3} = D_{B3} = D_{N3}$; $D_{A4} = D_{B4} = D_{N4}$). The resulting model achieved an excellent goodness-of-fit ($G^2 = 3.31$, $df = 4$, $p = .51$; see Table 8 for parameter estimates and confidence intervals). Given the nonsignificant goodness-of-fit test, it was then appropriate to test the experimental hypotheses.

Guessing parameters. Although not directly stated in a hypothesis, it was predicted that the experimental manipulations would not influence the probability of guessing that a statement is “old” (bs), and therefore the b parameters were set equal across condition and group (i.e., $b_1 = b_2 = b_3 = b_4$). As expected, this did not yield a significant difference in model fit, $\Delta\chi^2(3) = 6.31$, $p > .05$. Similarly, the experimental manipulations were not expected to impact the tendency to guess that a statement was made by a speaker from Category A (as), and thus these guessing parameters were set equal across condition and group (i.e., $a_1 = a_2 = a_3 = a_4$). As predicted, this restriction did not lead to a significant change in model fit, $\Delta\chi^2(3) = 5.16$, $p > .05$.

Hypothesis 6: Item discrimination parameters (Ds). Due to the aforementioned need to set the item discrimination parameters equal within experimental condition to obtain an identifiable model, the predictions for these parameters were not tested.

Hypothesis 7: Category discrimination parameters. To examine the prediction that the priming manipulation would influence only the category discrimination parameters in the categories defined by sexual orientation, the following steps were

taken and at each step the goodness-of-fit test was examined for significant increase²⁰:

1. The category discrimination parameters for Athens speakers were set equal across priming condition ($d_{B3} = d_{B4}$). This restriction did not result in a significant increase in the goodness of fit test, $\Delta\chi^2(1) = .10, p > .05$, suggesting that category discrimination for Athens speakers did not differ across priming condition.
2. The category discrimination parameters for Pittsburgh speakers were set equal across priming condition ($d_{A3} = d_{A4}$). This restriction did not result in a significant increase in the goodness of fit test, $\Delta\chi^2(1) = 1.57, p > .05$, suggesting that priming condition did not impact the categorization of Pittsburgh speakers.
3. The category discrimination parameters for heterosexual speakers were set equal across priming condition ($d_{B1} = d_{B2}$). This restriction did not result in a significant increase in the goodness of fit test, $\Delta\chi^2(1) = 1.07, p > .05$, suggesting that priming condition did not impact the categorization of heterosexual speakers.
4. The category discrimination parameters for gay speakers were set equal across priming condition ($d_{A1} = d_{A2}$). Consonant with predictions, this restriction did not result in a significant increase in the goodness of fit test, $\Delta\chi^2(1) = .27, p >$

²⁰ If a restriction resulted in a significant increase in the chi-square value, then the restriction was removed before moving on to the next step.

.05, suggesting that priming condition did not impact the categorization of gay speakers.

5. To test the prediction that participants would have higher category discrimination parameters for gay speakers than for heterosexual speakers, the category discrimination parameters for heterosexual speakers and gay speakers were set equal across priming condition $[(d_{A1} = d_{A2}) = (d_{B1} = d_{B2})]$.²¹

In contrast with the hypothesis, this restriction did not result in a significant increase in the goodness of fit test, $\Delta\chi^2(1) = .22, p > .05$, suggesting that priming condition did not impact the categorization of gay and heterosexual speakers differentially.

6. Among participants in the control-prime condition, the categorization parameters were set to be equal across groups $[(d_{A2} = d_{B2}) = (d_{A4} = d_{B4})]$. Inconsistent with predictions, this restriction did not result in a significant increase in the goodness of fit test, $\Delta\chi^2(2) = .85, p > .05$, suggesting that participants did not differentially categorize speakers whose category memberships were defined by hometown or sexual orientation.

Hypothesis 8: Person discrimination parameters. To examine the prediction that the priming manipulation would only impact person discrimination for gay speakers, the following steps were taken and at each step the goodness-of-fit test was examined for significant increases:

1. The person discrimination parameters for Athens speakers were set equal across priming condition ($c_{B3} = c_{B4}$). Inconsistent with predictions, this

²¹ Prior to setting this and the following restrictions, the d parameters were freed.

restriction did result in a significant increase in the goodness of fit test, $\Delta\chi^2(1) = 5.7, p < .05$, suggesting that priming condition influenced the extent to which participants individuated Athens speakers. More specifically, examination of the parameter values (see Table 8), reveals that participants in the control condition (c_{B4}) individuated Athens speakers to a greater extent than did those who were primed with femininity (c_{B3}).

2. The person discrimination parameters for Pittsburgh speakers were set equal across priming condition ($c_{A3} = c_{A4}$). In line with predictions, this restriction did not result in a significant increase in the goodness of fit test, $\Delta\chi^2(1) = .28, p > .05$, suggesting that priming condition did not impact the extent to which Pittsburgh speakers were individuated.
3. The person discrimination parameters for heterosexual speakers were set equal across priming condition ($c_{B1} = c_{B2}$). As expected, this restriction did not result in a significant increase in the goodness of fit test, $\Delta\chi^2(1) = 2.33, p > .05$, suggesting that priming condition did not impact the extent to which heterosexual speakers were individuated.
4. The person discrimination parameters for gay speakers were set equal across priming condition ($c_{A1} = c_{A2}$). Inconsistent with predictions, this restriction did not result in a significant increase in the goodness of fit test, $\Delta\chi^2(1) = 2.20, p > .05$, suggesting that priming condition did not impact the extent to which participants individuated gay speakers.

Hypothesis 9: Relationships between prime condition, individuation, and categorization of stigmatized targets. To assess the impact of priming condition on the individuation and categorization of gay targets, individuation and categorization estimates were attained by running the model separately for each participant.²² The parameter estimates representing each person's level of individuation and categorization (i.e., *c* and *d*) were then entered into the SPSS spreadsheet. Individuation and categorization scores for individuals in the sexual orientation condition were then examined as a function of priming condition (feminine vs. control). Contrary to predictions, individuals in the feminine prime condition ($M = .25$) did not exhibit individuation parameters that were greater than those evinced by individuals in the control condition ($M = .30$), $F < 1$. Similarly—but consistent with predictions—the feminine prime ($M = .17$) did not lead participants to categorize gay speakers to a lesser extent than did the control prime ($M = .24$), $F < 1$.

Hypothesis 10: Relationships between prime condition, individuation, categorization, and liking for and willingness to interact with stigmatized targets. To examine the impact of priming condition, individuation, and categorization on liking of, and willingness to interact with, gay targets, separate hierarchical regression analyses were conducted on scores for outgroup liking and willingness to interact with gay targets. Priming condition, individuation, categorization, and the various interactions served as predictors. Four steps were used to build each equation:

priming condition was entered in the first step (control prime = -1, feminine prime =

²² Because the model will not run with zeros in a given cell, and most participants had a zero for one of the cells in the data matrix, a score of “1” was added to each data cell for every participant prior to running the model (cf. Upton, 1978).

1), followed by the individuation and categorization parameters, all two way interactions, and the three-way interaction between priming condition, individuation, and categorization. All interaction terms were created by multiplying the continuous individuation and categorization variables by the dichotomous priming variable and one another. The priming variable was entered on the first step because it was expected to influence all other variables. Two such analyses were conducted: one with ingroup liking serving as the dependent measure, and one with willingness to interact with gay targets serving as the dependent measure. As shown in Table 9, the only effect to attain significance was the interaction between priming condition and individuation regressed on liking, $t(29) = 2.53, p = .02$. Examination of the interaction revealed that for participants who received the femininity prime, individuation increased liking, whereas for individuals in the control condition, individuation decreased liking. None of the other predictors or their interaction terms added significantly to the explained variance in either of the dependent variables.

Hypothesis 11: Individuation as a mediator of the relationship between priming condition and outgroup liking, and willingness to interact with stigmatized individuals. Given that there was not a significant relationship between priming condition and liking for stigmatized individuals (outgroup liking measure; $r = .02, ns$), it was not feasible to test the notion that individuation mediates this relationship. Likewise, the relationship between priming condition and willingness to interact with

gay speakers did not attain significance ($r = -.15$, *ns*), and therefore a test for mediation was not conducted.²³

Hypothesis 12: Relationships between Internal Motivation, Individuation, and Categorization. To examine the direct relationship between IM-G and individuation and categorization, a correlation matrix was computed (see Table 10). Consistent with predictions, IM-G was positively related to the extent to which participants individuated gay speakers and was unrelated to the extent to which participants categorized gay speakers. Finally, as expected, individuation and categorization were unrelated.

Supplementary Analyses

Categorization results with conventional analyses. To examine the utility of the multinomial model for understanding categorization and individuation processes, it is generally fruitful to compare the results of the model with analyses conducted in the traditional manner (Klauer & Wegener, 1998). Hence the error-difference measure (Taylor et al., 1978) was examined as a function of priming condition and the social category of the speakers. That is, between-category errors²⁴ were subtracted from within-category errors to obtain an estimate of categorization, with higher numbers indicating greater categorization. The resulting estimate of categorization was subjected to a 2 (priming condition: feminine vs. control) X 2 (social category

²³ Both of these analyses were conducted substituting IM-G scores for priming condition, and neither met the criteria for mediation. The lack of mediation was due to the fact that individuation did not remain a significant predictor of liking for, or willingness to interact with, gay speakers when IM-G was in the model.

²⁴ Between-category errors were first multiplied by .75 to account for the fact that there are more opportunities to misattribute a statement made by a speaker from a given category to a speaker from the wrong category (four possible speakers) than to a wrong speaker from the same social category as the speaker (three possible speakers).

membership of speaker: sexual orientation vs. hometown) ANOVA. Contrary to what was expected, results revealed that the priming manipulation did not directly impact categorization, nor did it interact with the social-category membership of the speakers to impact categorization (both F s < 1). However, a marginally significant main effect of social-category membership emerged, with individuals categorizing to a greater extent in the hometown condition ($M = 6.30$) than in the sexual orientation condition ($M = 4.24$), $F(1, 68) = 3.17$, $p < .08$, $\eta^2 = .05$.

It is possible that the priming manipulation did not significantly impact categorization scores because it only had a marginal influence on internal motivation to respond without prejudice (IM-G) scores. Accordingly, categorization scores were also examined as a function of participants' levels of IM-G.²⁵ Specifically, categorization scores were subjected to a 2 (level of IM-G: high vs. low) X 2 (social category membership of speaker: sexual orientation vs. hometown) ANOVA. Results revealed that individuals low in IM-G ($M = 6.51$) categorized speakers to a greater extent than did those high in IM-G ($M = 4.25$), $F(1, 68) = 3.99$, $p = .05$, $\eta^2 = .06$. A marginally significant main effect of social category also emerged, with speakers defined by their hometowns ($M = 6.40$) being categorized to a greater extent than those defined by their sexual orientation ($M = 4.36$), $F(1, 68) = 3.23$, $p = .08$, $\eta^2 = .05$. The interaction between IM-G and social category was nonsignificant, $F < 1$.

Relationships between motivation, individuation, categorization, liking, and willingness to interact with gay speakers. In addition to the relationships between IM-

²⁵ Participants were categorized as either low (scores of 5 to 29) or high (scores of 30 to 45) in internal motivation to respond without prejudice toward gay men, on the basis of norms established in prior research (Ratcliff et al., 2006).

G, individuation (c_{AI}), and categorization (d_{AI}), the relationships between liking for gay speakers, willingness to interact with gay speakers, and EM-G were examined in a correlation matrix (see Table 10). These data revealed that, as might be expected, IM-G was positively related to liking for, and willingness to interact with, gay speakers. EM-G was not significantly related to IM-G, individuation, categorization, liking for, or willingness to interact with gay speakers. Additionally, the extent to which participants individuated the gay speakers was positively related to willingness to interact with, but was unrelated to liking for, gay speakers. Finally, categorization did not predict either liking for or willingness to interact with gay speakers.

Relationships between motivation, individuation, categorization, liking, and willingness to interact with heterosexual speakers. As depicted in Table 11, the extent to which participants individuated heterosexual speakers was positively related to IM-G. Additionally, liking for heterosexual speakers was positively related to willingness to interact with such speakers.

Relationships between motivation, individuation, categorization, liking, and willingness to interact with Pittsburgh and Athens speakers. Although predictions were not made regarding the relationship between IM-G and individuation and categorization of speakers from Pittsburgh or Athens—the control conditions—it is important to note that IM-G was unrelated to the individuation and categorization of both speakers from Pittsburgh (see Table 12), and those from Athens (see Table 13). Consistent with the sexual orientation conditions, liking of Pittsburgh/Athens

speakers was positively related to willingness to interact with Pittsburgh/Athens speakers.

Liking as a predictor of willingness to interact with gay speakers. To assess the independent contributions of internal motivation to respond without prejudice and liking to willingness to interact with gay speakers, the continuous IM-G and liking variables, and their interaction were regressed on willingness to interact scores in a hierarchical analysis. When it was entered on the first step, IM-G was a reliable predictor of willingness to interact with gay speakers, $t(70) = 1.98, p = .05$ (see Table 14). When liking was entered on the second step, IM-G was no longer a significant predictor of willingness to interact, $t < 1$, but liking accounted for additional variance, $t(69) = 7.02, p < .0001$ (see Table 14). The interaction term entered in the third block did not add significantly to the explained variance in willingness to interact with gay speakers.

General Discussion

Research has uncovered robust gender differences in attitudes toward gay men, with females expressing less prejudice than males (Herek, 1988). Recent correlational evidence suggests that these gender differences are partially mediated by females' greater internal motivation to respond without prejudice (IM), and that this greater IM derives, in part, from females' stronger endorsement of a feminine self-concept as true of the self (Ratcliff et al., 2006). The primary purpose of the present work was to extend these findings by demonstrating that regardless of gender, viewing the self as more feminine would lead to corresponding increases in IM

(Studies 1 and 2). In addition, the present work attempted to examine whether experimentally enhancing IM would lead to a greater liking for, and willingness to interact with, gay men (Study 2). Finally, given that IM impacted liking for, and willingness to interact with sexual minorities, a third aim of the present work was to examine the mechanism by which IM exerts an influence on these variables (Study 2). In the following sections, the success of each of these goals is addressed.

The Role of Femininity Self-Ascriptions in Motivation to Respond Without Prejudice

The present work partially accomplished the first aim—to more directly link femininity self-ascriptions with increases in egalitarian personal standards. More specifically, across two experimental studies, the conceptual priming task successfully enhanced the degree to which both males and females endorsed femininity self-ascriptions as true of the self. Additionally, exposing participants to femininity primes resulted in elevated levels of IM in both studies; albeit only marginally in Study 2. Importantly, the data from Study 1 revealed that priming males with femininity enhances the extent to which they express IM such that it is equivalent to the levels that female participants communicate at baseline (i.e., in the control condition)—a finding that suggests that the gender gap in egalitarian standards might be bridged by encouraging males to “get in touch with their feminine side”.

The Relationship between IM and Liking for, and Willingness to Interact with, Sexual Minorities

As previously stated, a second purpose of the current work was to examine the implications of enhancing IM for liking for, and willingness to interact with, sexual minorities. Because it was predicted that the feminine prime would increase individuation of gay targets, and increases in individuation were expected to be related to greater liking for, and subsequently greater willingness to interact with gay targets, the feminine prime was expected to lead to both enhanced liking of and greater willingness to interact with gay speakers, relative to the control prime. Contrary to predictions, results revealed that the priming condition did not influence the extent to which individuals individuated gay targets, nor did the prime enhance liking for, or willingness to interact with sexual minorities (see Table 9). Nevertheless, the priming manipulation also only marginally impacted IM-G scores, and it is therefore possible that the priming manipulation did not have an influence on liking and willingness to interact simply because the manipulation was not entirely effective. Correspondingly, examination of the relationships between participants' actual levels of IM (as measured by the IM-G scale), and individuation, liking for, and willingness to interact with sexual minorities (see Table 10), indicates that IM has a positive impact on all three variables. Thus, as anticipated, enhancing IM—if successful—would conceivably lead to beneficial consequences for intergroup relations, such as greater liking for and enhanced willingness to interact with outgroup members.

It is also noteworthy that the current results are consonant with the Motivation and Opportunity as Determinants (MODE) model (Fazio & Towles-Schwen, 1999), which asserts that motivation exerts an effect on attitudes and/or behavior only when the attitude or behavior is relevant to the motive—that is, the behavior or attitude provides an *opportunity* to attain the goal. For example, as depicted in Tables 10 through 13, IM-G exerts an influence on liking for and willingness to interact with gay targets only. IM-G does not influence these variables as they relate to the heterosexual, Pittsburgh, or Athens speakers.²⁶

The Impact of Motivation to Respond Without Prejudice on Social Categorization

The third goal of the current work was to investigate the mechanism by which IM exerts an effect on liking for, and willingness to interact with stigmatized individuals. Thus, the multinomial model of social categorization (Klauer & Wegener, 1998) was employed to explore the cognitive processes influenced by the priming manipulation.²⁷ The results of each component of the analysis are discussed in the following sections.

Model fit, item discrimination, and guessing parameters. Critically, the model fit the data once the item discrimination parameters (*Ds*) were appropriately constrained, and the *n* parameter was set equal to .25. This result suggests that the

²⁶ Although IM-G influences the extent to which participants individuate both gay and heterosexual speakers, this finding is not necessarily inconsistent with the MODE model (Fazio, 1999) in that individuating the gay speakers to a greater extent should logically lead individuals to have greater memory for statements made by the heterosexual speakers during the discussion.

²⁷ All analyses discussed below were also conducted using participants' actual level of IM-G. Results do not vary as a function of which variable was utilized.

processes described in the model were actually occurring for participants in the experiment. It also enabled further examination of the model parameters.

After establishing that the model fit, all of the b parameters, the probability of guessing that an item is “old”, were set to be equal to one another. As anticipated, this restriction did not lead to a significant increase in the goodness of fit statistic, indicating that the parameters were indeed equal. Examination of the parameter estimates (see Table 8) further shows that the probability of guessing old was relatively small across all four conditions. This finding is consistent with the fact that the probability of correctly identifying old items was relatively high across conditions (see Table 8).

It was further predicted that the probability of guessing that a statement was made by a speaker from category A (a ; i.e., either gay or Pittsburgh) would not differ as a function of priming condition, and thus the a parameters were set to be equal across conditions. This restriction did not lead to a significant increase in the goodness of fit statistic, suggesting that the parameters were equivalent across conditions. Examination of the parameter values (see Table 8), is at first misleading, because participants in the feminine prime condition (i.e., groups 1 and 3) appear to have a greater tendency to guess that a statement was made by a speaker from category A. Nonetheless, the confidence intervals for all of the groups overlap, suggesting that the parameters are not significantly different from one another. Hence, as hypothesized, the tendency to guess that a statement was made by a speaker from category A was not impacted by the priming manipulation.

Categorization parameters. Because individuals high in IM and those low in IM were expected to categorize gay speakers to a similar extent—albeit for different reasons—it was not anticipated that the category discrimination parameters (d s) would differ as a function of priming condition. Consistent with predictions, category discrimination parameters did not vary as a function of priming condition for gay speakers (see Table 8). Similarly, category discrimination parameters did not differ as a function of priming condition for Athens, Pittsburgh, or heterosexual speakers. Participants were also expected to evince higher category discrimination parameters for gay speakers than for heterosexual speakers across priming condition. Results revealed no difference in the extent to which participants categorized gay relative to heterosexual speakers.

It was additionally anticipated that all participants would exhibit higher category discrimination parameters when observing a group in which the social categories were defined by sexual orientation relative to when observing a group in which the social categories were defined by hometown. This prediction was not borne out in the data. As depicted in Table 8, participants in both social category conditions evinced category discrimination parameters that appear to be higher for speakers from Category A (i.e., gay or Pittsburgh) than for Category B (i.e., heterosexual or Athens). However, this assumption was not directly tested, and it is critical to note that the confidence intervals were relatively large for the d parameters.²⁸ Hence, interpretation

²⁸ One explanation for the large confidence intervals and small parameter values for the d parameters is that there are fewer responses at this point in the tree to base the estimates on. That is, given the category recognition falls further down in the processing tree, by the time participants reach that point, fewer responses remain.

of the results pertaining to these parameters (when aggregated across participants in the model) should be made with caution. A possible explanation for this contrary finding is discussed further in the limitations section.

Finally, categorization parameters for each individual participant were calculated and the relationships between participants' actual levels of IM, categorization, individuation, liking for, and willingness to interact with gay speakers were examined (see Table 10). As predicted, IM was not related to the extent gay speakers were categorized. Nor were the categorization parameters predictive of liking for, or willingness to interact with gay speakers—a result that suggests that the extent to which individuals utilized categorical processing in the current experiment was not particularly influential in determining responses toward sexual minorities. At the outset of Study 2, it was suggested that categorization would differentially impact reactions to stigmatized individuals as a function of whether it is accompanied by high or low levels of individuation. Contrary to this hypothesis, the hierarchical regression analyses revealed that individuation and categorization did not interact to predict liking for, or willingness to interact with sexual minorities (see Table 9), indicating that categorization may not be particularly influential to these processes, even when accompanied by high levels of individuation. There is also an alternative explanation for the lack of influence of the categorization estimates in the current study that is discussed in the limitations section.

Critically, the individual estimates of categorization and individuation that were calculated for each participant were unrelated across all four conditions (see

Tables 10 through 13). This lack of a relationship between categorization and individuation is consistent with the notion that it is inappropriate to assume that these measures are reciprocal (e.g., if categorization is high, then individuation is necessarily low). This is an important result in that it further impugns the widely employed conventional measure of social categorization (Taylor et al., 1978). That is, the results of the conventional measure are typically taken to indicate the extent to which social categories are utilized in person perception. As discussed by Klauer and Wegener (1998), this assumption is problematic in that the measure confounds social categorization with individuation. Specifically, these authors argue that the error-difference measure is sensitive to both categorization and individuation and that these processes cannot be disentangled in the measure. For example, although an increase in within category errors may suggest that categorization has increased, it is equally likely that categorization has not *increased*, but rather, that individuation has *decreased*. In light of this argument, and given the current finding that these processes are not reciprocal, the error difference measure is particularly troublesome because one cannot simply assume that increases in the error-difference measure imply that categorization has increased and individuation has decreased.

Individuation parameters. Of critical interest to the current work was the impact of the priming manipulation, and IM more generally, on the extent to which participants individuated gay speakers. Specifically, it was predicted that individuals in the feminine prime condition would individuate gay speakers to a greater extent than would those in the control condition, and that it was this change in individuation

that would partially explain why those high in IM would be more likely than others to like and desire to work with sexual minorities. The priming manipulation was not expected to influence individuation of heterosexual, Athens, or Pittsburgh speakers.

Surprisingly, results revealed that restricting the person discrimination parameters to be equivalent across priming condition for Athens speakers resulted in a significant increase in the goodness of fit statistic. This finding suggests that the priming manipulation influenced the extent to which Athens speakers were individuated. Examination of the parameter values (see Table 8) indicates that participants individuated Athens speakers more in the control condition than in the feminine prime condition. Theoretically, this finding is not particularly logical. For instance, it may be possible that individuals from Athens are viewed by Ohio University students as derogated group members, but even if this were the case, one would expect that the feminine prime would lead participants to individuate Athens speakers to a greater extent. It is reasonable, then, that this finding is simply a Type I error—a possibility that gains merit by examining the categorization parameters that were computed for each individual (see Table 13). Because the categorization parameters computed for each individual are not aggregated across participants, these estimates are actually more sensitive than are the parameters in the model (see more on this point in the limitations section). As depicted in Table 13, IM-G is not related to either categorization or individuation of Athens speakers according to this more sensitive estimate. Moreover, an additional analysis examining the impact of priming

condition on individually computed categorization estimates revealed that the relationship was not significant, $F < 1$.

As hypothesized, the priming manipulation did not influence the extent to which participants individuated Pittsburgh or heterosexual speakers. Contrary to predictions, priming condition also did not influence the extent to which participants individuated the gay speakers. One explanation for this lack of variation is the fact that the priming manipulation was not particularly efficacious in influencing IM-G. Thus, one might think that it may be more fruitful to examine these parameters as a function of participants' actual levels of IM. Indeed, such analysis were conducted and did not produce results that differ from those discussed above. See the limitations section for another explanation for the failure of IM to predict individuation within the model.

As with the categorization estimates, individuation estimates were computed for each participant. Results indicated that the priming manipulation did not influence these estimates of individuation. However, hierarchical regression analyses (see Table 9) indicated that individuation interacted with the priming manipulation to differentially influence liking. An exploration of the interaction revealed that participants in the feminine prime condition liked gay targets more as individuation increased, whereas individuals in the control condition liked gay targets less as individuation increased. Although this finding might seem surprising, recent work has shown that nonconscious goals can influence the manner in which individuals organize information about other persons in memory, thereby producing divergent

judgments of the same behavior (Ratcliff & Lassiter, in press). Similarly, in the current work, it is feasible that the feminine prime led participants to organize the information that they received about the target in a manner that resulted in more favorable judgments. It is also reasonable to assume that participants in the control condition came to more negative conclusions about the gay speakers following greater information gain (i.e., individuation), because the information obtained was primarily negative in nature. That is, the speakers made statements that were negative in nature. Acquisition of negative information, may have led participants to feel more adversely toward the speakers (cf. Lassiter & Stone, 1984).

The aforementioned finding may at first seem incompatible with the subsequent finding that the extent individuals individuated gay speakers was positively related to both liking for, and willingness to interact with gay targets (see Table 10). However, it is important to note that these were different analyses. The hierarchical regression analysis included priming condition and categorization in the model while assessing the variance that individuation explained. Hence, it is feasible that the direct relationships between individuation and liking for, and willingness to interact with sexual minorities might be more difficult to detect in the regression analyses relative to the correlational analyses. Indeed, individuation was a marginally significant predictor of liking in the first hierarchical regression analysis (see Table 9). Additionally, the correlational analyses cut across the priming conditions. Accordingly, although individuation led to greater liking in the feminine prime condition, it also led to less liking in the control condition, and therefore cutting

across these two conditions might wipe out any effect of individuation on liking. In future work, it would be interesting to look at these variables when more neutral statements are espoused by speakers. It is notable, however, that even cutting across priming condition, individuation led participants to be more willing to interact with gay speakers—a result that is consistent with the notion that acquisition of information about a person reduces uncertainty, thereby leading individuals to feel more comfortable with, and perhaps more willing to interact, with the person.

Finally, it was predicted that individuation would mediate the relationships between priming condition and liking for and willingness to interact with sexual minorities. Because priming condition did not have an impact on liking or willingness to interact, it was not possible to test these specific predictions. Nevertheless, it was feasible to test the role of individuation in mediating the relationships between participants' actual level of IM-G and liking and willingness to interact.

Unfortunately, these tests of mediation also failed because individuation did not significantly predict liking and willingness to interact when IM-G was in the model. This result suggests that individuation does not mediate these relationships. However, as previously mentioned, a drawback of the current work was that the information acquired from the speakers was negative in valence, and as such, information gain may not have led to more positive impressions because the speakers themselves may have become associated with the negativity they espoused (cf. Skowronski, Carlston, Mae, & Crawford, 1998). For this reason, it is possible that if the statements were more positive (or neutral) in nature, that individuation would mediate these

relationships. However, although it is logical that IM predicts liking and willingness to interact, the current lack of mediation leaves open the question of *why* exactly IM does so (see Table 10). One viable interpretation is that individuals high in IM are also particularly concerned with avoiding prejudiced responses, ergo they express greater liking for and willingness to interact with gay speakers than they actually feel. Consequently, future research might use newly developed techniques to unobtrusively assess motivation to respond without prejudice (Glaser & Knowles, in press).

Implications for decategorization and recategorization explanations. At the outset of Study 2, it was suggested that the current work could provide insight into the reason why individuals high in IM are often successful in avoiding prejudiced responses (Devine et al., 2002; Fazio et al., 1995). Specifically, the current results were expected to assist in disentangling recategorization (Perdue et al., 1990; Sinclair & Kunda, 1999) and decategorization (Lepore & Brown, 1997) explanations for nonprejudiced behaviors. It was suggested that a decategorization explanation would be supported if individuals high in IM exhibited categorization parameters that did not differ for gay and heterosexual speakers, but that were lower in the feminine prime condition than in the control condition. Moreover, individuation parameters should not change as a function of priming condition. The current results do not support this interpretation, however, because categorization parameters for gay speakers did not vary as a function of either priming condition or IM-G. Conversely, it was anticipated that a recategorization explanation would be supported if individuals high in IM led participants to exhibit increased individuation parameters

and decreased categorization parameters for gay speakers, relative to those individuals low in IM. This explanation was also not supported because IM was not related to reductions in categorization parameters. Rather, according to the results of Study 2, IM primarily increased the extent to which participants individuated gay (and heterosexual) speakers. However, due to some drawbacks of the multinomial model in Study 2 (see limitations below), the current findings do not conclusively address the question of why IM leads to more positive reactions to sexual minorities. Hence, neither decategorization nor recategorization explanations can be entirely ruled out.

Conventional analysis of social categorization. Despite the fact that the conventional measure of social categorization (Taylor et al., 1978) confounds categorization and individuation processes (Klauer & Wegener, 1998), such analyses were conducted here to examine whether the current results replicated prior findings in the literature (e.g., Sharp, Devine, & Plant, 2006; Walker & Antaki, 1986). Because the priming manipulation only marginally influenced IM-G, the discussion will focus on the analysis that employed participants' actual IM-G scores as the independent variable. Results from this analysis were partially consistent with the prior literature in that participants low in IM-G categorized speakers to a greater extent than did individuals high in IM-G. Unfortunately, IM-G did not interact with social category to predict categorization scores, indicating that individuals high in IM-G exhibited reduced errors for speakers regardless of their category membership. This finding suggests that perhaps individuals high in IM-G were more motivated to

process information in general, regardless of the category membership of the speaker. Nevertheless, as discussed extensively above, this error difference measure is problematic on a variety of levels and should be interpreted with caution.

Limitations

Issues related to the current conception of “femininity.” The failure of self-reported femininity self-ascriptions to mediate the relationship between priming condition and IM-G across two studies weakens the assumption that the priming manipulation influenced IM-G by increasing femininity self-ascriptions. Thus, although several alternatives for what the prime might have influenced were ruled out (e.g., mood, compassion, and masculinity), it is currently unclear *why* the priming manipulation led to enhanced levels of IM. One possibility is that the priming manipulation *did* impact an aspect of femininity, but not the particular aspect that was measured in the current work. That is, femininity has been shown to be multidimensional and therefore composed of a variety of separate factors (Ratcliff & Conley, 1981). It is feasible that the single measure of femininity employed in the current work did not capture the particular aspect of the feminine gender-role self-concept that contributes to internalized egalitarian standards. Ratcliff and her colleagues (2006) initially hypothesized that the feminine self-concept was an antecedent to IM because it comprises traits related to communal, nurturing behaviors. It might therefore be more appropriate to examine the role that dispositional communal orientations (Clark & Finkel, 2005) play in individual’s levels of IM, rather than assessing more global feelings of femininity. Similarly, it

may be advantageous to examine the role of a prosocial value orientation, or the tendency to minimize the difference between one's own outcome and that of others (Van Lange, Otten, De Bruin, & Joireman, 1997), in predicting IM.

Issues related to Klauer and Wegener's (1998) multinomial model of social categorization. Although the multinomial model of social categorization (Klauer & Wegener, 1998) fit the data, thereby providing evidence that the processes described in the model were indeed occurring, some limitations of the model for the current study should be acknowledged. First, the categorization parameters (d s) were quite small in most instances, and the confidence intervals for these parameters were extremely large. As alluded to earlier, one explanation for these problematic results is that the probability of correctly remembering the category membership of a speaker (d) falls *after* several other processes, and therefore the potential number of data observations available to estimate d are more limited than for many of the other parameters. It has been suggested that to reliably estimate each parameter, a minimum number of observations are required for each (Riefer & Batchelder, 1988). Hence, it is possible that the number of observations available to estimate that categorization parameters were not sufficient, explaining why the confidence intervals were so large. However, previous research utilizing the current model obtained more reasonable estimates of d with even fewer observations (Gawronski et al., 2002; Klauer & Wegener, 1998), thereby weakening this argument.

If it is assumed that the category parameter estimates obtained in Study 2 were reliable, interpretation of the parameters indicates that when participants do not

remember a given speaker, they also do not remember the social category membership of that speaker—a finding that suggests that there is a quality inherent in the social categories utilized in the current work (i.e., sexual orientation and hometown) that make them difficult for participants to remember. Accordingly, a notable discrepancy between the present work and previous studies finding more reasonable estimates of d , is the extent to which the social category membership of each speaker was a visually salient characteristic. More specifically, prior work utilized social categories that were immediately detectable based on apparent physical characteristics of the speakers (e.g., black vs. white; mature adults vs. young adults), whereas the speakers in the current work did not differ on any obvious physical characteristic. It is therefore possible that given the lack of readily available visual stimuli associated with a given social category, participants were simply unable to utilize category information effectively.

An additional issue with the model was the apparent failure to detect variation in the individuation parameters (cs) within the model (see Table 8), yet variation in individuation found in the individually computed parameters was evinced (see Table 10). Examination of the individual participants' data is enlightening in this regard, because it reveals that participants—within the same experimental conditions—varied greatly in their person discrimination parameters. One reason for this variation might be due in part to the recruitment and distribution of participants high and low in prejudice equally across all conditions. That is, such distribution of these two populations (high and low prejudice) within the same condition might have created

variability *within* the conditions that eliminated potential differences in the parameter values *between* the conditions (cf. Stahl & Klauer, 2007). Because of this variability within conditions, aggregating across participants in the model may have therein led to misleading findings. In contrast, computing each individual's parameter estimates and examining the relationships between those parameters and IM, liking, and willingness to interact, resulted in a more sensitive test because data were not aggregated across divergent populations, enabling individual variation to contribute to the results.

Future Directions

The role of social categorization in motivation to respond without prejudice toward racial minorities. To address the failure of Study 2 to show differences in category discrimination across levels of IM, future studies investigating the impact of IM on social categorization might utilize pictures of speakers whose social category membership is immediately discriminable based on their physical characteristics. In conjunction with the current work, such a study may also contribute to a new body of evidence that suggests that reactions to stigmatized individuals differs as a function of the particular characteristics of the group to which they belong (Cottrell & Neuberg, 2005), by showing that even basic cognitive processes such as the categorization and individuation of stigmatized individuals may vary in relation to the characteristics that their social group possesses.

Additionally, future studies examining the impact of individuation on liking for, and willingness to interact with stigmatized individuals might utilize statements

in the discussion portion of the categorization task that are neutral or positive in valence. To test the specific assumption that liking did not necessarily increase as a function of individuation in the current work because the valence of the statements was negative in nature, future studies could directly manipulate the valence of the statements—that is, some participants could receive statements framed in a negative manner whereas other participants could receive statements framed in a positive manner.

The role of liking in intergroup relations. An overarching goal of the current work was to utilize the findings to derive suggestions for reducing behaviors associated with prejudice. This focus on reducing negative attitudes and behaviors may not have been the most fruitful approach to take. More recent evidence suggests that to genuinely improve intergroup relations, a focus on enhancing positive rather than reducing negative emotions, may prove more effective (Pittinsky, Rosenthal, & Montoya, 2007). The final supplementary analysis conducted in Study 2 also speaks to this point (see Table 14), in that liking for gay speakers predicted willingness to interact with sexual minorities above and beyond a motivation to respond without prejudice. Moreover, the variance in willingness to interact explained by IM-G was actually eliminated when liking was added into the model, demonstrating that liking for gay speakers was a more robust predictor of willingness to interact than was IM-G. This finding suggests that to more directly encourage positive intergroup contact, which has been shown to reliably predict more lasting positive attitudes toward outgroup members (Pettigrew, 1998; Pettigrew & Tropp, 2000), including sexual

minorities (Herek & Capitano, 1996), future research might focus on understanding the antecedents and predictors of liking for gay men and lesbians.

As the current work demonstrated that liking for gay speakers was particularly predictive of willingness to interact with such speakers, future work might further investigate factors that lead to greater liking of stigmatized individuals. To date, it is known that close personal relationships with stigmatized individuals are more likely to lead to global feelings of liking for members of that specific outgroup (Herek & Capitano, 1996). It would be interesting to explore whether additional variables that have been shown to reduce prejudice such as outcome dependency (Brewer et al., 1995; Fiske et al., 1999) similarly impact liking for stigmatized individuals. It will also be useful to uncover variables that differentially impact prejudice toward and liking for stigmatized individuals, and to further examine any divergent downstream consequences that might occur as a function of prejudice and/or liking. Specifically, a reasonable hypothesis might be that liking for stigmatized individuals will predict proactive behaviors, or actions taken in an attempt to eliminate disparities experienced by marginalized individuals, whereas reduced prejudice would not predict such behaviors (cf. Pittinsky et al., 2007).

Social norms related to proactive behaviors. Margaret Mead is frequently quoted as stating that, “A small group of thoughtful people could change the world. Indeed, it's the only thing that ever has.” Mead’s inspirational statement suggests, as the civil rights movement also demonstrated, that social change importantly depends upon the willingness of individuals to take a proactive stance. Thus, examination of

factors that predict or inhibit an individual's willingness to engage in proactive behaviors aimed at reducing the social disparities that stigmatized individuals experience, seems to be a worthwhile endeavor. One variable that might predict an inhibition of proactive behaviors is the perception that most other individuals from one's own social group feel negatively toward a particular stigmatized population. For instance, Ratcliff and Markman (2007) found that most Ohio University students believe that other Ohio University students feel negatively toward gay marriage, and this belief in a negative consensus predicts how personally important students rated the gay marriage issue to be. Likewise, it is feasible that a belief in a negative consensus would inhibit even those individuals who support gay rights issues from taking a proactive stance, whereas perceiving a positive consensus might lead individuals to be more willing to take a proactive stance. Future research might examine this possibility.

Concluding Remarks

The present studies integrate recent developments regarding sources of motivation to respond without prejudice with the existing literature on gender differences in attitudes toward gay men and lesbians. The current findings support previous research suggesting that internal motivation to respond without prejudice may be at the crux of gender differences in sexual prejudice. By demonstrating that experimentally manipulated femininity self-ascriptions are related to increases in IM, the current data suggest that entrenched gender-role belief systems may importantly contribute to males' lower levels of IM, and it is therefore advocated that rather than

pointing an accusatory finger at the prejudiced individual, researchers instead examine the rigid gender-role expectations that society prescribes.

As gender-based behaviors are susceptible to change via normative channels (Deaux & Major, 1987), an approach to prejudice reduction that focuses on altering normative attitudes and beliefs offers promise for the eventual amelioration of sexual prejudice. Recent research has shown that individuals can encourage a more accepting normative climate by vocalizing their personal nonprejudiced standards (Monteith & Walters, 1998), and by directly confronting the perpetrators of sexual prejudice (Czopp & Monteith, 2003). Remaining silent, in contrast, actually contributes to the problem, and can in fact be deadly. Savin-Williams (1999, p. 208) noted that prior to the murder of Matthew Shepard "... a local billboard advertising guns had been altered from 'Shoot a day or two' to 'Shoot a gay or two.' For more than a month, hundreds, if not thousands, of residents had remained silent..." Through their silence, unsuspecting community members may have implicitly communicated acceptance of hostility toward lesbians and gay men. Thus it is imperative for future research to continue to work toward a greater understanding of how to best encourage nonprejudiced individuals to voice their egalitarian standards.

References

- Allport, G. W. (1954). *The nature of prejudice*. Reading, MA: Addison-Wesley.
- Bargh, J. A. (1997). The automaticity of everyday life. In R. S. Wyer, Jr. (Ed.), *The automaticity of everyday life: Advances in social cognition* (Vol. 10, pp. 1-61). Mahwah, NJ: Erlbaum.
- Bargh, J. A., & Chartrand, T. L. (2000). The mind in the middle: A practical guide to priming and automaticity research. In H.T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (pp. 253-285). New York, NY: Cambridge University Press.
- Bargh, J. A., Gollwitzer, P. M., Lee-Chai, A., Barndollar, K., & Trötschel, R. (2001). The automated will: Nonconscious activation and pursuit of behavioral goals. *Journal of Personality and Social Psychology*, 81, 1014-1027.
- Bargh, J. A., Raymond, P., Pryor, J. B., & Strack, F. (1995). An automatic power → sex association and its consequences for sexual harassment and aggression. *Journal of Personality and Social Psychology*, 68, 768-781.
- Batchelder, W. H., & Riefer, D. M. (1990). Multinomial processing models of source monitoring. *Psychological Review*, 97, 548-564.
- Bayen, U. J., Murnane, K., & Erdfelder, E. (1996). Source discrimination, item detection, and multinomial models of source monitoring. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 22, 197-215.
- Bem, S. L. (1974). The measurement of psychological androgyny. *Journal of Consulting and Clinical Psychology*, 42, 155-162.

- Bem, S. L. (1993). *The lenses of gender: Transforming the debate on sexual inequality*. New Haven, Conn.: Yale University Press.
- Brewer, M. B. (1988). A dual process model of impression formation. In T. K. Srull & R. S. Wyer (Eds.), *Advances in Social Cognition* (Vol. 1, pp. 1-36). Hillsdale, NJ: Erlbaum.
- Brewer, M. B., & Harasty-Feinstein, A. S. (1999). Dual processes in the representation of persons and social categories. In S. Chaiken and Y. Trope (Eds.), *Dual-process theories in social psychology* (pp.255-270). New York: Guilford Press.
- Brewer, M. B., Weber, J. G., & Carini, B. (1995). Person memory in intergroup contexts: Categorization versus individuation. *Journal of Personality and Social Psychology*, 69, 29-40.
- Bruner, J. S. (1957). On perceptual readiness. *Psychological Review*, 64, 123-152.
- Buchner, A., Erdfelder, E., & Vaterrodt-Plünnecke, B. (1995). Toward unbiased measurement of conscious and unconscious memory processes within the process dissociation framework. *Journal of Experimental Psychology: General*, 124, 137-160.
- Chartrand, T.L. (2001). *Mystery moods and perplexing performance: Consequences of succeeding and failing at a nonconscious goal*. Unpublished manuscript, Ohio State University, Columbus.

- Chartrand, T. L., & Bargh, J. A. (1996). Automatic activation of impression formation and memorization goals: Nonconscious goal priming reproduces effects of explicit task instructions. *Journal of Personality and Social Psychology*, 71, 464-478.
- Clark, M. S., & Finkel, E. J. (2005). Willingness to express emotion: The impact of relationship type, communal orientation, and their interaction. *Personal Relationships*, 12, 169-180.
- Cottrell, C. A., & Neuberg, S. L. (2005). Different emotional reactions to different Groups: A sociofunctional threat-based approach to “prejudice”. *Journal of Personality and Social Psychology*, 88, 770-789.
- Crandall, C., & Eshleman, A. (2003). A justification-suppression of the expression and experience of prejudice. *Psychological Bulletin*, 129, 414-446.
- Czopp, A. M., Monteith, M. J. (2003). Confronting Prejudice (Literally): Reactions to confrontations of racial and gender bias. *Personality and Social Psychology Bulletin*, 29, 532-544.
- Deaux, K., & LaFrance, M. (1998). Gender. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (4th ed., pp. 788-827). New York: Oxford University Press.
- Deaux, K., & Major, B. (1987). Putting gender into context: An interactive model of gender-related behavior. *Psychological Review*, 94, 369-389.

- Devine, P. G., Plant, E. A., Amodio, D. M., Harmon-Jones, E., & Vance, S. L. (2002). The regulation of explicit and implicit race bias: The role of motivation to respond without prejudice. *Journal of Personality and Social Psychology*, 82, 835-848.
- Dijksterhuis, A., & van Knippenberg, A. (1998). The relation between perception and behavior or how to win a game of Trivial Pursuit. *Journal of Personality and Social Psychology*, 74, 865-877.
- Dunton, B. C., & Fazio, R. H. (1997). An individual difference measure of motivation to control prejudiced reactions. *Personality and Social Psychology Bulletin*, 23, 316-326.
- Eagly, A. H., Diekmann, A. B., Johannesen-Schmidt, & Koenig, A. M. (2004). Gender gaps in sociopolitical attitudes: A social psychological analysis. *Journal of Personality and Social Psychology*, 87, 796-815.
- Fazio, R. H., & Dunton, B. C. (1997). Categorization by race: The impact of automatic and controlled components of racial prejudice. *Journal of Experimental Social Psychology*, 33, 451-470.
- Fazio, R. H., & Hilden, L. E. (2001). Emotional reactions to a seemingly prejudiced response: The role of automatically activated racial attitudes and motivation to control prejudiced reactions. *Personality and Social Psychology Bulletin*, 27, 538-549.

- Fazio, R. H., Jackson, J. R., Dunton, B. C., & Williams, C. J. (1995). Variability in automatic activation as an unobtrusive measure of racial attitudes: A bona-fide pipeline? *Journal of Personality and Social Psychology*, 69, 1013-1027.
- Fazio, R. H., & Olson, M. A. (2003). Implicit measures in social cognition research: Their meaning and use. *Annual Review of Psychology*, 54, 297-327.
- Fazio, R. H., & Towles-Schwen, T. (1999). The MODE model of attitude-behavior Processes. In S. Chaiken, & Y. Trope (Eds.), *Dual process theories in social Psychology* (pp. 97- 116). New York,, NY: Guilford Press.
- Fiske, S. T. (1993). Controlling other people: The impact of power on stereotyping. *American Psychologist*, 46, 621-628.
- Fiske, S. T., Lin, M., & Neuberg, S. L. (1999). The continuum model: Ten years later. In S. Chaiken and Y. Trope (Eds.), *Dual-process theories in social psychology* (pp.255-270). New York: Guilford Press.
- Fiske, S. T., & Neuberg, S. L. (1990). A continuum of impression formation, from Category-based to individuating processes: Influences of information and Motivation on attention and interpretation. *Advances in Experimental Social Psychology*, 23, 1-74.
- Gaertner, S. L., Dovidio, J. F., Banker, B. S., Houlette, M., Johnson, K. M., & McGlynn, E. A. (2000). Reducing intergroup conflict: From superordinate goals to decategorization, recategorization, and mutual differentiation. *Group Dynamics: Theory, Research, and Practice*, 4, 98-114.

- Gawronski, B., Ehrenberg, K., Banse, R., Zukova, J., & Klauer, K. C. (2003). It's in the mind of the beholder: The impact of stereotypic associations on category-based and individuating impression formation. *Journal of Experimental Social Psychology, 39*, 16-30.
- Gilbert, D. T., & Hixon, J. G. (1991). The trouble of thinking: Activation and application of stereotypic beliefs. *Journal of Personality and Social Psychology, 60*, 509-517.
- Glaser, J., & Knowles, E. D. (in press). Implicit motivation to control prejudice. *Journal of Experimental Social Psychology*.
- Haddock, G., Zanna, M. P., & Esses, V. M. (1993). Assessing the structure of prejudicial attitudes: The case of attitudes toward homosexuals. *Journal of Personality and Social Psychology, 65*, 1105-1118.
- Haidt, J., & Hersh, M. A. (2001). Sexual morality: The cultures and emotions of conservatives and liberals. *Journal of Applied Social Psychology, 31*, 191-221.
- Haley, H., Sidanius, J., Lowery, B., & Malamuth, N. (2004). The interactive nature of sex and race discrimination: A social dominance perspective. In G. Philogene (Ed.), *Race identity in context: The legacy of Kenneth B. Clark* (pp. 149-160). Washington DC: American Psychological Association.
- Hebl, M.R., & Dovidio, J.F. (2005). Promoting the "social" in the examination of social stigmas. *Personality and Social Psychology Review, 9*, 156-182.

- Herek, G. M. (1988). Heterosexuals' attitudes toward lesbians and gay men: Correlates and gender differences. *Journal of Sex Research*, 25, 451-477.
- Herek, G. M. (2000a). The psychology of sexual prejudice. *Current Directions in Psychological Science*, 9, 19-22.
- Herek, G. M. (2000b). Sexual prejudice and gender: Do heterosexuals' attitudes toward lesbians and gay men differ? *Journal of Social Issues*, 56, 251-266.
- Herek, G. M., Capitano, J. P. (1996). "Some of my best friends": Intergroup contact, concealable stigma, and heterosexuals' attitudes toward gay men and lesbians. *Personality and Social Psychology Bulletin*, 22, 412-424.
- Herek, G. M., Gillis, J. R., & Cogan, J. C. (1999). Psychological sequelae of hate-crime victimization among lesbian, gay, and bisexual adults. *Journal of Consulting and Clinical Psychology*, 67, 945-951.
- Higgins, E. T. (1996). Knowledge activation: Accessibility, applicability, and salience. In E. T. Higgins & A. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 133-168). New York: Guilford Press.
- Higgins, E. T., Rholes, W. S., & Jones, C. R. (1977). Category accessibility and impression formation. *Journal of Experimental Social Psychology*, 13, 141-154.
- Jones, E. E., & Thibaut, J. W. (1958). Interaction goals as bases of inference in interpersonal perception. In R. Taguiri & L. Petrullo (Eds.), *Person perception and interpersonal behavior* (pp. 151-178). Stanford, CA: Stanford University Press.

- Kenny, D. A., Kashy, D. A., & Bolger, N. (1998). Data analysis in social psychology. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (4th ed., pp. 233-265). New York: Oxford University Press.
- Kite, M. E. & Whitley, B. E. Jr. (1996). Sex differences in attitudes toward homosexual persons, behavior, and civil rights: A meta-analysis. *Personality and Social Psychology Bulletin*, 22, 336-353.
- Kite, M. E. & Whitley, B. E. Jr. (1998). Do heterosexual women and men differ in their attitudes toward homosexuality? A conceptual and methodological analysis. In G. M. Herek (Ed.), *Stigma and sexual orientation: Understanding prejudice against lesbians, gay men, and bisexuals* (pp. 39-61). Thousand Oaks, CA: Sage.
- Klauer, K. C. & Wegener, I. (1998). Unraveling social categorization in the "Who Said What?" paradigm. *Journal of Personality and Social Psychology*, 75, 1155-1178.
- Klauer, K. C., Wegener, I., & Ehrenberg, K. (2002). Perceiving minority members as Individuals: The effects of relative group size in social categorization. *European Journal of Social Psychology*, 32, 223-245.
- Lamar, L. & Kite, M. E. (1998). Sex differences in attitudes toward gay men and lesbians: A multidimensional perspective. *The Journal of Sex Research*, 35, 189-196.

- Lassiter, G. D., & Stone, J. I. (1984). Affective consequences of variation in behavior perception: When liking is in the level of analysis. *Personality and Social Psychology Bulletin*, 10, 253-259.
- Lepore, L., & Brown, R. (1997). Category and stereotype activation: Is prejudice inevitable? *Journal of Personality and Social Psychology*, 72, 275-287.
- Locke, V., MacLeod, C., & Walker, I. (1994). Automatic and controlled activation of Stereotypes: Individual differences associated with prejudice. *British Journal of Social Psychology*, 33, 29-46.
- Macrae, C. N., & Bodenhausen, G. V. (2000). Social cognition: Thinking categorically about others. *Annual Review of Psychology*, 51, 93-120.
- Macrae, C. N., Milne, A. B., & Bodenhausen, G. V. (1994). Stereotypes as energy-saving devices: A peek inside the cognitive toolbox. *Journal of Personality and Social Psychology*, 66, 37-47.
- Maddux, W.W., Barden, J., Brewer, M. B., & Petty, R. E. (2005). Saying no to negativity: The effects of context and motivation to control prejudice on automatic evaluative responses. *Journal of Experimental Social Psychology*.
- Monteith, M. J., Ashburn-Nardo, Voils, & Czopp (2002). Putting the brakes on prejudice: On the development and operation of cues for control. *Journal of Personality and Social Psychology*, 83, 1029-1050.
- Monteith, M. J., & Walters, G. L. (1998). Egalitarianism, moral obligation, and prejudice-related personal standards. *Personality and Social Psychology Bulletin*, 24, 186-199.

- Park, B., & Judd, C.M. (2005). Rethinking the link between categorization and prejudice within the social cognition perspective. *Personality and Social Psychology Review*, 9, 108-130.
- Pendry, L. F., & Macrae, C. N. (1996). What the disinterested perceiver overlooks: Goal-directed social categorization. *Personality and Social Psychology Bulletin*, 22, 18249-256.
- Perdue, C. W., Dovidio, J. F., Gurtman, M. B., & Tyler, R. B. (1990). Us and them: Social categorization and the process of intergroup bias. *Journal of Personality and Social Psychology*, 59, 475-486.
- Pettigrew, T. F. (1998). Intergroup contact theory. *Annual Review of Psychology*, 49, 65-85.
- Pettigrew, T. F., & Tropp, L. R. (2000). Does intergroup contact reduce prejudice: Recent meta-analytic findings. In S. Oskamp (Ed.), *Reducing prejudice and discrimination* (pp. 93-114). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Pittinsky, T. L., Rosenthal, S. A., & Montoya, R. M. (2007). *Positive intergroup attitudes: Development and validation of the allophilia scale*. Manuscript submitted for publication.
- Plant, E. A., & Devine, P. G. (1998). Internal and external motivation to respond without prejudice. *Journal of Personality and Social Psychology*, 75, 811-32.
- Ratcliff, J. J. (2003). *Consequences of prejudice-related discrepancies: Compunction alters the perception of ongoing behavior*. (Unpublished masters thesis, Ohio University, Athens).

- Ratcliff, J.J., & Lassiter, G.D. (in press). On the induction and consequences of variation in behavior perception. *Current Psychology*.
- Ratcliff, J.J., Lassiter, G.D., Markman, K.D., & Snyder, C.J. (2006). Gender differences in attitudes toward gay men and lesbians: The role of motivation to respond without prejudice. *Personality and Social Psychology Bulletin*, 33, 1325-1338.
- Ratcliff, J. J. & Markman, K. D. (2007). [Perceptions of consensus and attitudes toward homosexuality]. Unpublished raw data.
- Ratcliff, E. S., & Conley, J. (1981). The structure of masculinity-femininity: Multidimensionality and gender differences. *Social Behavior and Personality*, 9, 41-47.
- Riefer, D. M., & Batchelder, W. H. (1988). Multinomial modeling and the measurement of cognitive processes. *Psychological Review*, 95, 318-339.
- Rosenhan, D. L., Salovey, P., & Hargis, K. (1981). The joys of helping: Focus of attention mediates the impact of positive affect on altruism. *Journal of Personality and Social Psychology*, 40, 899-905.
- Roskos-Ewoldsen, D. R., & Fazio, R. H. (1992). On the orienting value of attitudes: Attitude accessibility as a determinant of an object's attraction of visual attention. *Journal of Personality and Social Psychology*, 63, 198-211.
- Rudman, L. A., & Borgida, E. (1995). The afterglow of construct accessibility: The behavioral consequences of priming men to view women of sexual objects. *Journal of Experimental Social Psychology*, 31, 493-517.

- Savin-Williams, R. C. (2003). Matthew Shepard's death: A professional awakening. In L. D. Garnets & C. C. Kimmel (Eds.), *Psychological perspectives on lesbian, gay and bisexual experiences* (pp. 157-164). New York: Columbia University Press.
- Segal, S. J., & Cofer, C. N. (1960). The effect of recency and recall on word association. *American Psychologist*, 15, 451.
- Sharp, L., Devine, P., & Plant, E. A. (2006, January). *Viewing the world in black and white: Motivations to respond without prejudice as they relate to categorical and individuated person perception*. Paper presented at the annual meeting of the Society for Personality and Social Psychology, Palm Springs, CA.
- Sherman, J. W., Lee, A.Y., Bessenoff, G.R., & Frost, L.A. (1998). Stereotype efficiency reconsidered: Encoding flexibility under cognitive load. *Journal of Personality and Social Psychology*, 75, 589-606.
- Sherman, J. W., Stoessner, S. J., Conrey, F. R., & Azam, O. A. (2005). Prejudice and stereotype maintenance processes: Attention, attribution, and individuation. *Journal of Personality and Social Psychology*, 89, 607-622.
- Sidanius, J. (1993). The psychology of group conflict and the dynamics of oppression: A social dominance perspective. In W. McGuire & S. Iyengar (Eds.), *Current approaches to political psychology* (pp. 183-219). Durham, NC: Duke University Press.
- Sidanius, J. & Pratto, F. (1999). *Social dominance*. New York: Cambridge University Press.

- Simon, B., & Hastedt, C. (1997). When misery loves categorical company: Accessibility of the individual self as a moderator in category-based representation of attractive and unattractive ingroups. *Personality and Social Psychology Bulletin*, 23, 1254-1264.
- Sinclair, L., & Kunda, Z. (1999). Reactions to a black professional: Motivated inhibition and activation of conflicting stereotypes. *Journal of Personality and Social Psychology*, 77, 885-904.
- Skowronski, J. J., Carlston, D. E., Mae, L., & Crawford, M. T. (1998). Spontaneous trait transference: Communicators take on the qualities they describe in others. *Journal of Personality and Social Psychology*, 74, 837-848.
- Smith, E. R., Fazio, R. H., & Cejka, M. A. (1996). Accessible attitudes influence Categorization of multiply categorizable objects. *Journal of Personality and Social Psychology*, 71, 888-898.
- Spence, J. T. (1993). Gender-related traits and gender ideology: Evidence for a multifactorial theory. *Journal of Personality and Social Psychology*, 64, 624-635.
- Srull, T. K., & Wyer, R. S., Jr. (1979). The role of category accessibility in the interpretation of information about persons: Some determinants and implications. *Journal of Personality and Social Psychology*, 37, 1660-1672.
- Stahl, C., & Klauer, K. C. (2007). *HMMTree: A computer program for latent-class hierarchical multinomial processing tree models*. Unpublished manuscript, Universität Freiburg.

- Stangor, C., Lynch, L., Duan, C., & Glass, B. (1992). Categorization of individuals on the Basis of multiple social features. *Journal of Personality and Social Psychology*, 62, 207-218.
- Tajfel, H. (1969). Cognitive aspects of prejudice. *Journal of Social Issues*, 25, 79-97.
- Taylor, S. E. (1981). A categorization approach to stereotyping. In D. L. Hamilton (Ed.), *Cognitive processes in stereotyping and intergroup behavior* (pp. 88-114). Hillsdale, NJ: 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. L., & Ruderman, A. J. (1978). Categorical and contextual bases of person memory and stereotyping. *Journal of Personality and Social Psychology*, 36, 778-793.
- Upton, G. J. G. (1978). The analysis of cross-tabulated data. Chichester, England: Wiley.
- Van Lange, P. A. M., Otten, W., De Bruin, E. M. N., & Joireman, J. A. (1997). Development of prosocial, individualistic, and competitive orientations: Theory and preliminary evidence. *Journal of Personality and Social Psychology*, 73, 733-746.
- Vescio, T.K., Judd, C.M., & Kwan, V.S.Y. (2004). The crossed-categorization hypothesis: Evidence of reductions in the strength of categorization, but not intergroup bias. *Journal of Experimental Social Psychology*, 40, 478-496.

- von Hippel, W., Jonides, J., Hilton, J. L., & Narayan, S. (1993). Inhibitory effect of schematic processing on perceptual encoding. *Journal of Personality and Social Psychology*, 64, 921-935.
- Walker, P., & Antaki, C. (1986). Sexual orientation as a basis for categorization in recall. *British Journal of Social Psychology*, 25, 337-339.
- Whitley, B. E. Jr. (1987). The relationship of sex-role orientation to heterosexuals' attitudes toward homosexuals. *Sex Roles*, 17, 103-113.
- Whitley, B. E. Jr. (2001). Gender-role variables and attitudes toward homosexuality. *Sex Roles*, 45, 691-721.
- Whitley, B. E. Jr., & Lee, S. E. (2000). The relationship of authoritarian and related constructs to attitudes toward homosexuality. *Journal of Applied Social Psychology*, 30, 144-170.
- Wittenbrink, B., Judd, C. M., & Park, B. (1997). Evidence for racial prejudice at the Implicit level and its relationship with questionnaire measures. *Journal of Personality and Social Psychology*, 71, 262-274.
- Wood, W. P., Christensen, N., Hebl, M. R., & Rothergerber, H. (1997). Conformity to sex-typed norms, affect, and the self-concept. *Journal of Personality and Social Psychology*, 73, 523-535.
- Yu, J., & Bellezza, F. S. (2000). Process dissociation as source monitoring. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 26, 1518-1533.
- Zarate, M. A., & Smith, E. R. (1990). Person categorization and stereotyping. *Social Cognition*, 8, 161-185.

Table 1

Femininity Self-ascriptions as a Function of Priming Condition and Gender of the Respondent, Study 1 (N = 49)

Gender of Respondent	<u>Priming Condition</u>			
	<u>Femininity Prime</u>		<u>Control Prime</u>	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Female	6.08	1.04	5.42	1.51
Male	2.91	1.64	1.85	1.14

Table 2

Differences in Motivation to Respond without Prejudice as a Function of Priming Condition and Gender of the Respondent, Study 1 (N = 49)

	<u>Priming Condition</u>							
	<u>Femininity Prime</u>				<u>Control Prime</u>			
	<u>Females</u>		<u>Males</u>		<u>Females</u>		<u>Males</u>	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Motivation Source								
IM-G	7.46	1.87	6.44	1.48	6.42	1.67	5.40	1.97
EM-G	3.85	1.51	4.24	1.98	3.52	1.16	3.43	1.89

Note. IM-G = internal motivation toward gay men score; EM-G = external motivation toward gay men score

Table 3

Data Matrix of the Modified “Who Said What?” Paradigm (taken from Klauer & Wegener, 1998)

Source of Statement	Assignment			
	To the correct speaker	To a wrong speaker from Category A	To a wrong speaker from Category B	To the set of new statements
Category A	1	2	3	4
Category B	5	6	7	8
New		9	10	11

Note. A new statement that is assigned to a speaker rather than to the set of new statements can be assigned only to a wrong speaker, because it was never made by any speaker in the discussion phase. Therefore, the cell in the lower left corner must remain empty. The other cells are numbered 1 to 11.

Table 4

*Model Parameter Subscripts as a Function of Prime Condition and Social Category**Membership of the Speakers, Study 2*

	<u>Social Category Membership of Speaker</u>			
	<u>Gay</u>	<u>Heterosexual</u>	<u>Pittsburgh</u>	<u>Athens</u>
Prime Conditon				
Femininity	A1	B1	A3	B3
Control	A2	B2	A4	B4

Note. The first letter in each subscript (A or B) represents which social category the speaker was from (Gay/Pittsburgh = A; Heterosexual/Athens = B). The number in each subscript indicates both the priming condition and the category by which the speakers' group membership is defined (Femininity Prime/Sexual Orientation = 1; Control Prime/Sexual Orientation = 2; Femininity Prime/Hometown = 3; Control Prime/Hometown = 4).

Table 5

Femininity, Masculinity, and Compassion Self-ascriptions, and Affect as a Function of Priming Condition, Study 2 (N = 72)

Dependent Variable	<u>Priming Condition</u>			
	<u>Femininity Prime</u>		<u>Control Prime</u>	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Femininity	2.49	1.40	1.81	.97
Masculinity	5.03	1.15	5.32	1.23
Compassion	5.37	1.17	5.57	.93
Affect	34.34	6.24	33.41	6.08

Table 6

Internal and External Motivation as a Function of Priming Condition, Study 2 (N = 72)

Motivational Source	<u>Priming Condition</u>			
	<u>Femininity Prime</u>		<u>Control Prime</u>	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
IM-G	32.17	7.74	28.81	9.05
EM-G	19.37	8.18	18.22	6.88

Note. IM-G = internal motivation toward gay men score; EM-G = external motivation toward gay men score

Table 7

Frequencies in the Data Matrix as a Function of Priming Condition and the Social Category Membership of the Speakers, Study 2 (N = 72)

Group	Cells of the basic data Matrix										
	1	2	3	4	5	6	7	8	9	10	11
1	117	117	115	83	131	104	123	74	4	1	859
2	138	104	113	77	148	83	120	81	3	11	850
3	138	126	87	57	123	97	129	59	4	2	810
4	149	133	116	58	177	94	133	52	4	7	901

Note. Group 1 includes all participants in the feminine prime condition who observed a discussion in which social categories were defined by sexual orientation; Group 2 includes all participants in the control prime condition who observed a discussion in which social categories were defined by sexual orientation; Group 3 includes all participants in the feminine prime condition who observed a discussion in which social categories were defined by hometown; Group 4 includes all participants in the control prime condition who observed a discussion in which social categories were defined by hometown.

Table 8

Parameter Estimates and 90% Confidence Intervals (CIs), Study 2 (N = 72)

Parameter	Experimental Group							
	Group 1		Group 2		Group 3		Group 4	
	Estimate	CI	Estimate	CI	Estimate	CI	Estimate	CI
<i>D</i>	.81	.79-.84	.80	.77-.83	.85	.83-.88	.87	.85-.89
<i>d_A</i>	.0001	-.76-.76	.34	.10-.57	.0001	-1.12-1.12	.39	.09-.68
<i>d_B</i>	.33	-.005-.71	.0001	-.63-.63	.46	.13-.78	.05	-.73-.83
<i>c_A</i>	.22	.16-.28	.30	.24-.36	.28	.21-.34	.27	.21-.32
<i>c_B</i>	.25	.19-.31	.31	.25-.38	.23	.17-.29	.33	.27-.39
<i>a</i>	.58	.27-.89	.33	.13-.53	.66	.29-1.03	.36	.08-.65
<i>b</i>	.03	.004-.06	.08	.04-.12	.05	.01-.09	.09	.04-.14

Note. Group 1 = feminine prime/sexual orientation condition; Group 2 = control prime/ sexual orientation condition; Group 3 = feminine prime/hometown condition; Group 4 = control prime/hometown condition.

Table 9

*Summary of Hierarchical Regression Analyses for Predicting Liking of, and
Willingness to Interact with, Gay Speakers, Study 2 (n = 35)*

	Variable	B (β)	F	Change R ²
<u>Liking</u>				
Step 1	Prime ^a	-.017 (-.018)	.011	.0001
Step 2	<i>c_A</i>	.423 (.075)	.246	.023
	<i>d_A</i>	-.519 (-.133)		
Step 3	Prime X <i>c_A</i>	2.26 (.759)*	2.06	.276
	Prime X <i>d_A</i>	-1.21 (-.400)		
	<i>c_A</i> X <i>d_A</i>	3.50 (.362)		
Step 4	Prime X <i>c_A</i> X <i>d_A</i>	-.949 (-.113)	1.72	.002
<u>Willllingness to Interact</u>				
Step 1	Prime	.215 (.151)	.793	.023
Step 2	<i>c_A</i>	2.63 (.314)	2.00	.135
	<i>d_A</i>	-1.22 (-.208)		
Step 3	Prime X <i>c_A</i>	2.23 (.501)	2.12	.146
	Prime X <i>d_A</i>	-.366 (-.081)		
	<i>c_A</i> X <i>d_A</i>	-9.19 (.637)		
Step 4	Prime X <i>c_A</i> X <i>d_A</i>		1.76	.0001

Note. *c_A* = individuation of gay speakers; *d_A* = categorization of gay speakers.

^a -1 = control, 1 = feminine. * $p < .05$

Table 10

Correlations between Motivation, Individuation, Categorization, Liking, and
Willingness to Interact with Gay Speakers, Study 2 (n = 35)

Measure	IM-G	EM-G	c_{AI}	d_{AI}	Liking	Willing
<u>Sexual Orientation</u>						
IM-G		.230	.364*	-.098	.588**	.457**
EM-G			.211	.038	.072	.120
c_A				.052	.072	.279*
d_A					-.125	-.206
Liking						.588**
Willing						
Mean	29.72	19.36	.27	.20	5.24	5.02
SD	7.35	6.77	.17	.25	.97	1.45

Note. IM-G = internal motivation to respond without prejudice toward gay men score; EM-G = external motivation to respond without prejudice toward gay men score; c_A = individuation of gay speakers; d_A = categorization of gay speakers; Liking = the extent to which liking was expressed toward gay speakers; Willing = the extent to which participants expressed a willingness to interact with gay speakers

* $p < .05$; *** $p < .01$.

Table 11

Correlations between Motivation, Individuation, Categorization, Liking, and Willingness to Interact with Heterosexual Speakers, Study 2 (N = 35)

Measure	IM-G	EM-G	c_B	d_B	Liking	Willing
<u>Sexual Orientation</u>						
IM-G		.230	.396*	.071	.182	.009
EM-G			.121	.317	.136	.154
c_B				.342	.158	.190
d_B					.198	.194
Liking						.764*
Willing						
Mean	29.72	19.36	.28	.25	5.67	5.67
SD	7.35	6.77	.18	.26	.94	1.30

Note. IM-G = internal motivation to respond without prejudice toward gay men score; EM-G = external motivation to respond without prejudice toward gay men score; c_B = individuation of heterosexual speakers; d_B = categorization of heterosexual speakers; Liking = the extent to which liking was expressed toward heterosexual speakers; Willing = the extent to which participants expressed a willingness to interact with heterosexual speakers

* $p < .05$; *** $p < .01$.

Table 12

Correlations between Motivation, Individuation, Categorization, Liking, and Willingness to Interact with Pittsburgh Speakers, Study 2 (N = 37)

Measure	IM-G	EM-G	c_{A1}	d_{A1}	Liking	Willing
<u>Hometown</u>						
IM-G		.125	-.088	-.319	.272	.058
EM-G			-.151	.093	.277	.209
c_A				.042	-.201	-.284
d_A					-.201	.048
Liking						.782**
Willing						
Mean	31.17	18.19	.28	.26	5.02	5.01
SD	9.65	8.24	.17	.21	.96	1.39

Note. IM-G = internal motivation to respond without prejudice toward gay men score; EM-G = external motivation to respond without prejudice toward gay men score; c_A = individuation of Pittsburgh speakers; d_A = categorization of Pittsburgh speakers; Liking = the extent to which liking was expressed toward Pittsburgh speakers; Willing = the extent to which participants expressed a willingness to interact with Pittsburgh speakers

** $p < .01$.

Table 13

Correlations between Motivation, Individuation, Categorization, Liking, and
Willingness to Interact with Athens Speakers, Study 2 (N = 37)

<i>Measure</i>	<i>IM-G</i>	<i>EM-G</i>	<i>c_B</i>	<i>d_B</i>	<i>Liking</i>	<i>Willing</i>
<u>Hometown</u>						
IM-G		.125	-.149	-.157	.252	.144
EM-G			-.202	.111	.373	.148
<i>c_B</i>				.052	-	.074
					.001	
<i>d_B</i>					.088	-.214
Liking						.698**
Willing						
Mean	31.17	18.19	.29	.28	5.24	5.44
<i>SD</i>	9.65	8.24	.18	.25	.90	1.36

Note. IM-G = internal motivation to respond without prejudice toward gay men score; EM-G = external motivation to respond without prejudice toward gay men score; *c_B* = individuation of Athens speakers; *d_B* = categorization of Athens speakers; Liking = the extent to which liking was expressed toward Athens speakers; Willing = the extent to which participants expressed a willingness to interact with Athens speakers
 ***p* < .01.

Table 14

Summary of Hierarchical Analyses Regressing IM-G and Liking on Willingness to Interact with Gay Speakers (n = 35)

	Variable	B (β)	F	Change R ²
Step 1	IM-G	.038 (.230)*	3.92	.053*
Step 2	IM-G	-.061 (-.037)	27.97	.395***
	Liking	1.00 (.683)***		
Step 3	IMG	.003 (.019)	18.39	.0001***
	Liking	1.06 (.720)*		
	IMG X Liking	-.002 (-.079)		

Note. IM-G = internal motivation to respond without prejudice toward gay men score; Liking = the extent to which liking was expressed toward gay speakers; Willing = the extent to which participants expressed a willingness to interact with gay speakers

* $p < .05$; *** $p < .001$.

Figure Captions

Figure 1. The two-high-threshold multinomial model of social categorization in the modified “who said what?” paradigm (adapted from Klauer & Wegener, 1998). A = speakers from category A; B = speakers from category B; D_A = probability of detecting a statement made by a speaker from Category A; D_B = probability of detecting a statement made by a speaker from Category B; D_N = probability of detecting that a new statement is new; d_A = probability of correctly discriminating the category of a statement made by a speaker from Category A; d_B = probability of correctly discriminating the category of a statement made by a speaker from Category B; c_A, c_B = person discrimination parameters; a = probability of guessing that a statement is made by a speaker from Category A; b = probability of guessing that a statement is old.

Figure 2. The two-high-threshold multinomial model of social categorization in the modified “who said what?” paradigm (adapted from Klauer & Wegener, 1998) for participant responses in the feminine-prime condition, in which the categories are defined by sexual orientation. A = gay speakers; B = heterosexual speakers; D_{AI} = probability of detecting a statement made by a speaker from Category A; D_{BI} = probability of detecting a statement made by a speaker from Category B; D_{NI} = probability of detecting that a new statement is new; d_{AI} = probability of correctly discriminating the category of a statement made by a speaker from Category A; d_{BI} = probability of correctly discriminating the category of a statement made by a speaker from Category B; c_{AI}, c_{BI} = person discrimination parameters; a_I = probability of

guessing that a statement is made by a speaker from Category A; b_1 = probability of guessing that a statement is old.

Figure 3. The two-high-threshold multinomial model of social categorization in the modified “who said what?” paradigm (adapted from Klauer & Wegener, 1998) for participant responses in the control-prime condition, in which the categories are defined by sexual orientation. A = gay speakers; B = heterosexual speakers; D_{A2} = probability of detecting a statement made by a speaker from Category A; D_{B2} = probability of detecting a statement made by a speaker from Category B; D_{N2} = probability of detecting that a new statement is new; d_{A2} = probability of correctly discriminating the category of a statement made by a speaker from Category A; d_{B2} = probability of correctly discriminating the category of a statement made by a speaker from Category B; c_{A2}, c_{B2} = person discrimination parameters; a_2 = probability of guessing that a statement is made by a speaker from Category A; b_2 = probability of guessing that a statement is old.

Figure 4. The two-high-threshold multinomial model of social categorization in the modified “who said what?” paradigm (adapted from Klauer & Wegener, 1998) for participant responses in the feminine-prime condition, in which the categories are defined by hometown. A = Pittsburgh speakers; B = Athens speakers; D_{A3} = probability of detecting a statement made by a speaker from Category A; D_{B3} = probability of detecting a statement made by a speaker from Category B; D_{N3} = probability of detecting that a new statement is new; d_{A3} = probability of correctly discriminating the category of a statement made by a speaker from Category A; d_{B3} =

probability of correctly discriminating the category of a statement made by a speaker from Category B; c_{A3}, c_{B3} = person discrimination parameters; a_3 = probability of guessing that a statement is made by a speaker from Category A; b_3 = probability of guessing that a statement is old.

Figure 5. The two-high-threshold multinomial model of social categorization in the modified “who said what?” paradigm (adapted from Klauer & Wegener, 1998) for participant responses in the control-prime condition, in which the categories are defined by hometown. A = Pittsburgh speakers; B = Athens speakers; D_{A4} = probability of detecting a statement made by a speaker from Category A; D_{B4} = probability of detecting a statement made by a speaker from Category B; D_{N4} = probability of detecting that a new statement is new; d_{A4} = probability of correctly discriminating the category of a statement made by a speaker from Category A; d_{B4} = probability of correctly discriminating the category of a statement made by a speaker from Category B; c_{A4}, c_{B4} = person discrimination parameters; a_4 = probability of guessing that a statement is made by a speaker from Category A; b = probability of guessing that a statement is old.

Figure 6. Expected categorization and individuation parameter values as a function of priming condition. Higher numbers equal larger parameter values.

Figure 7. Expected mean liking for, and willingness to interact with gay speakers as a function of priming condition. Higher numbers equal greater liking and willingness to interact.

Figure 8. Expected path diagram and coefficients (standardized beta weights) predicting outgroup liking (Study 4). Solid paths are significant, $p \leq .05$; path c' is not significant when individuation is included in the model.

Figure 9. Expected path diagram and coefficients (standardized beta weights) predicting willingness to interact with a gay target (Study 4). Solid paths are significant, $p \leq .05$; path c' is not significant when individuation is included in the model.

Figure 1: Model Figure for Modified “Who Said What?” Paradigm

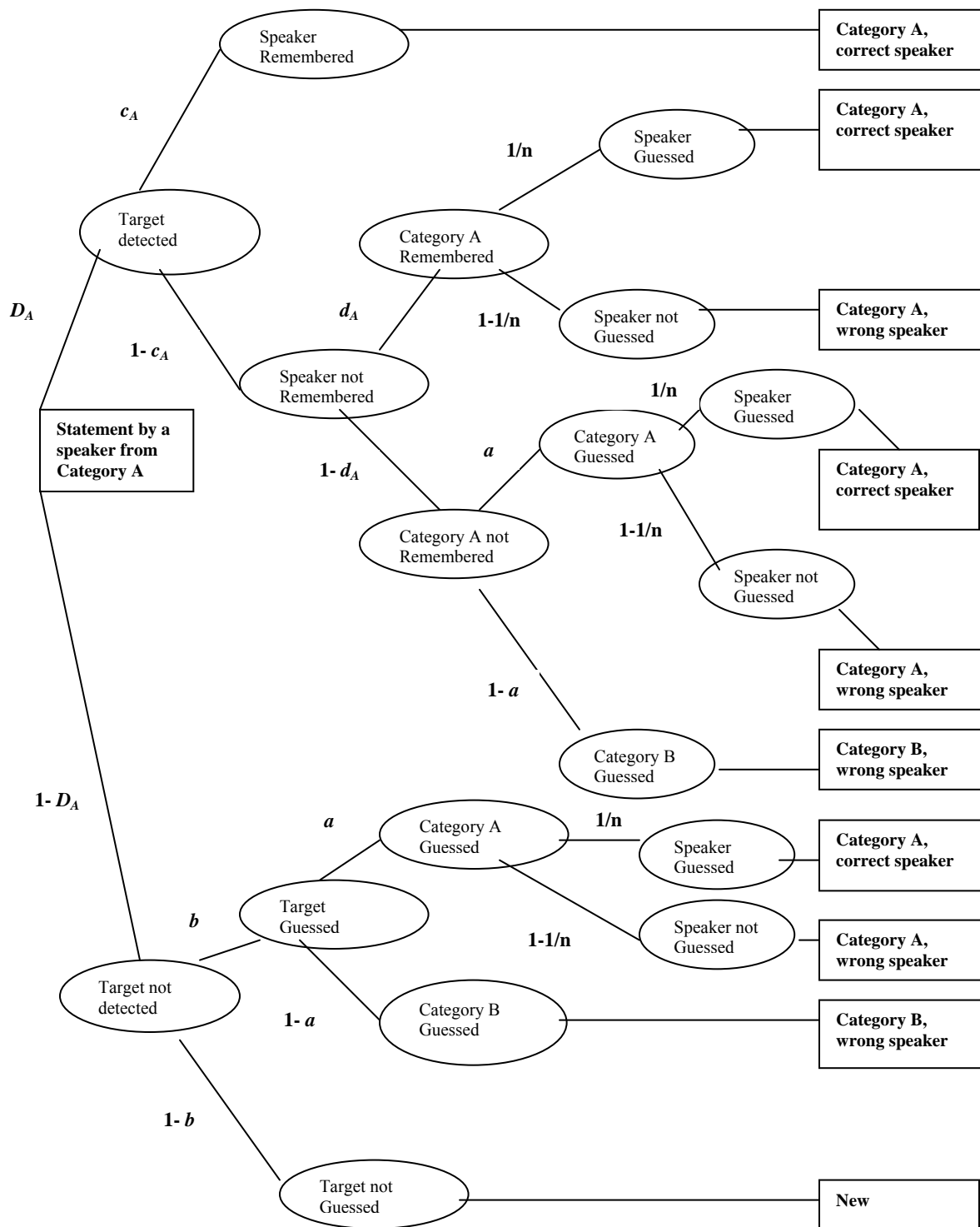


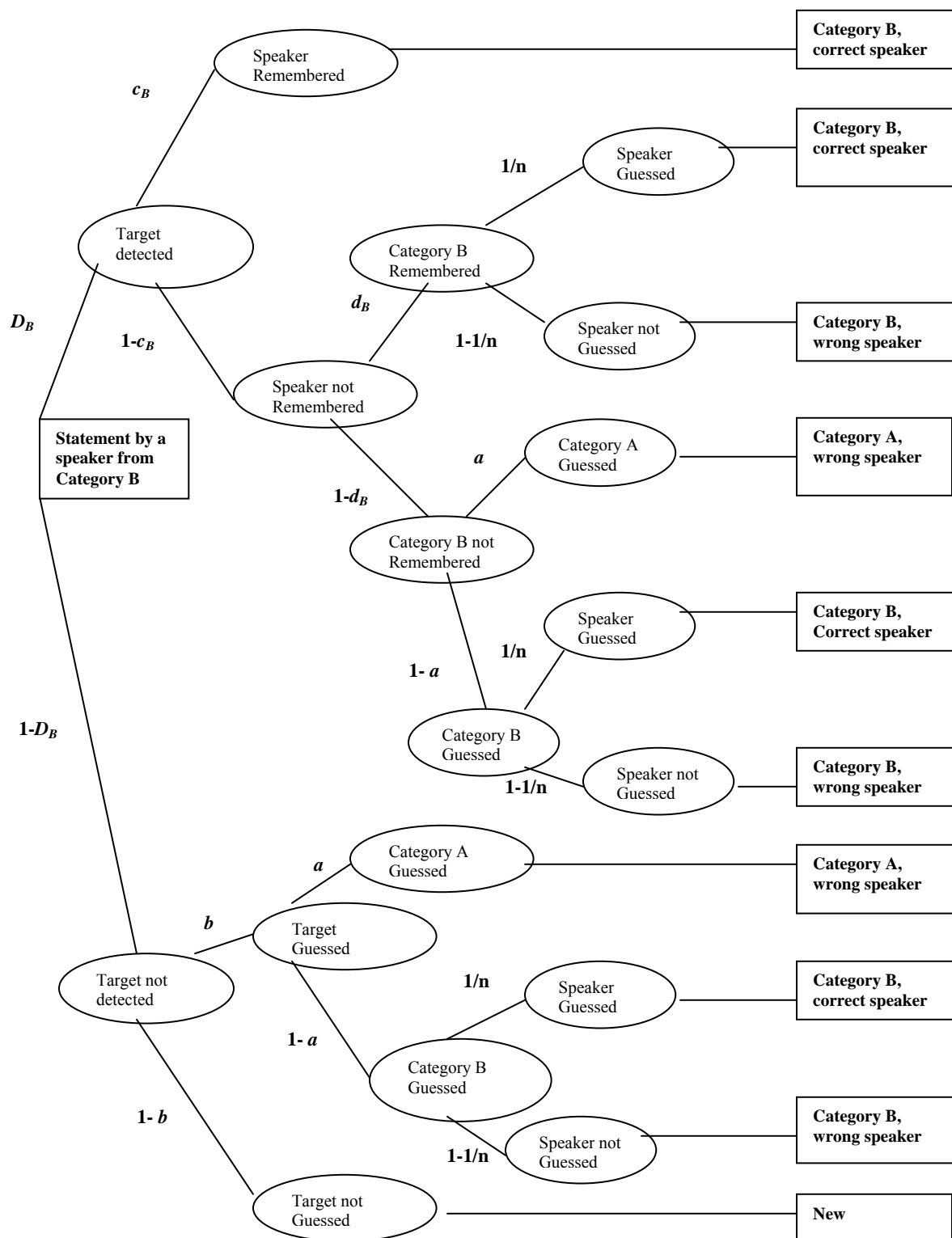
Figure 1
continued

Figure 1
continued

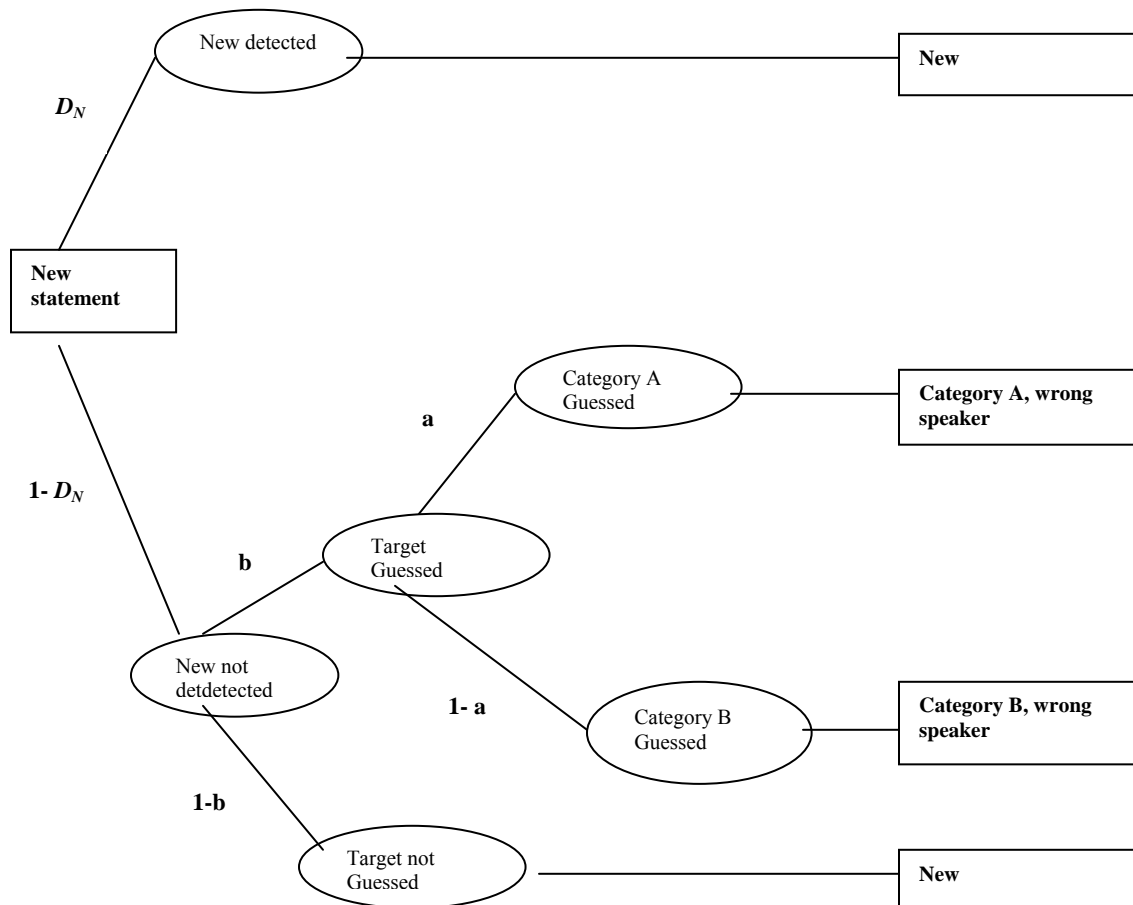


Figure 2: Model Figure or Feminine-Prime, Sexual-Orientation Condition

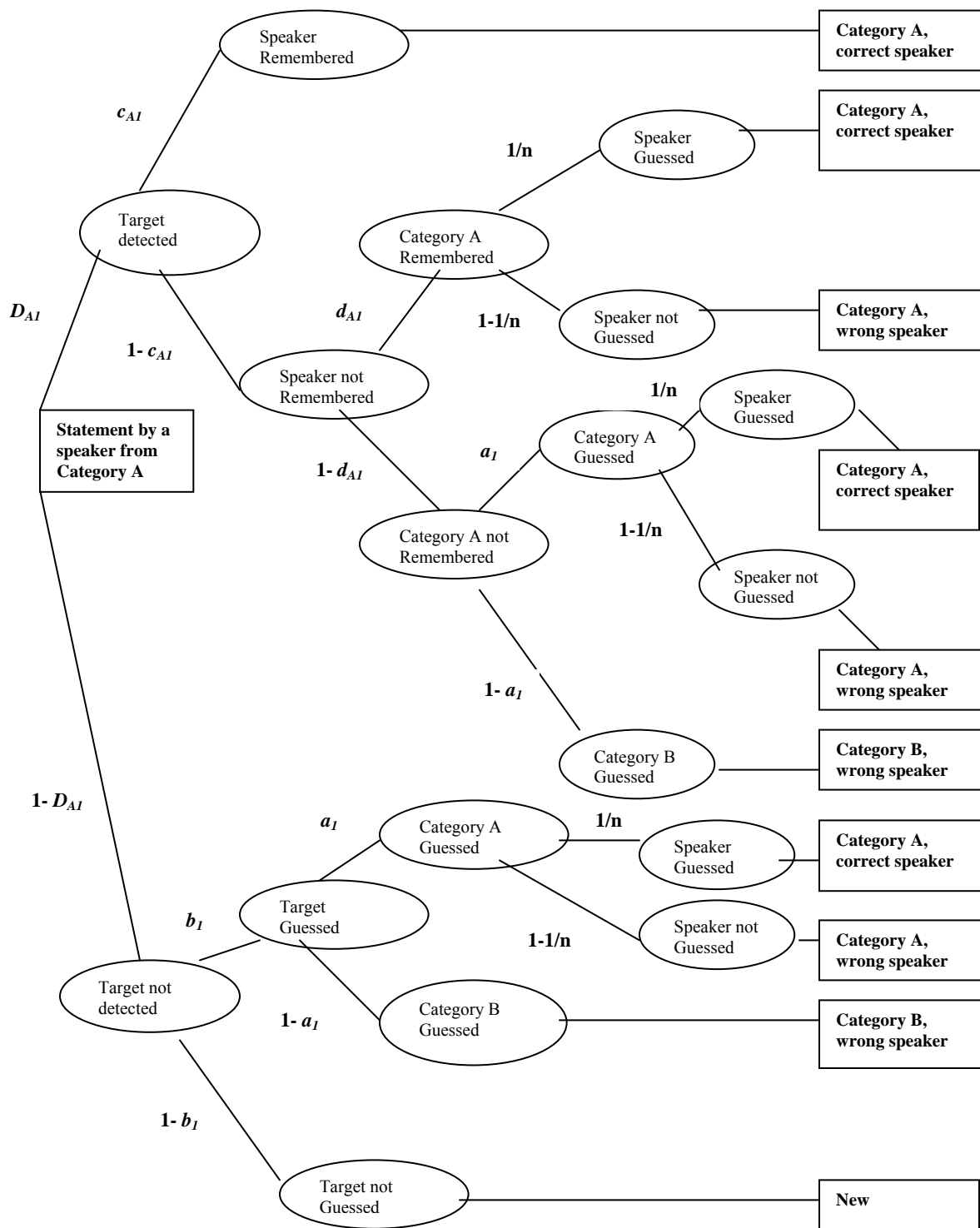


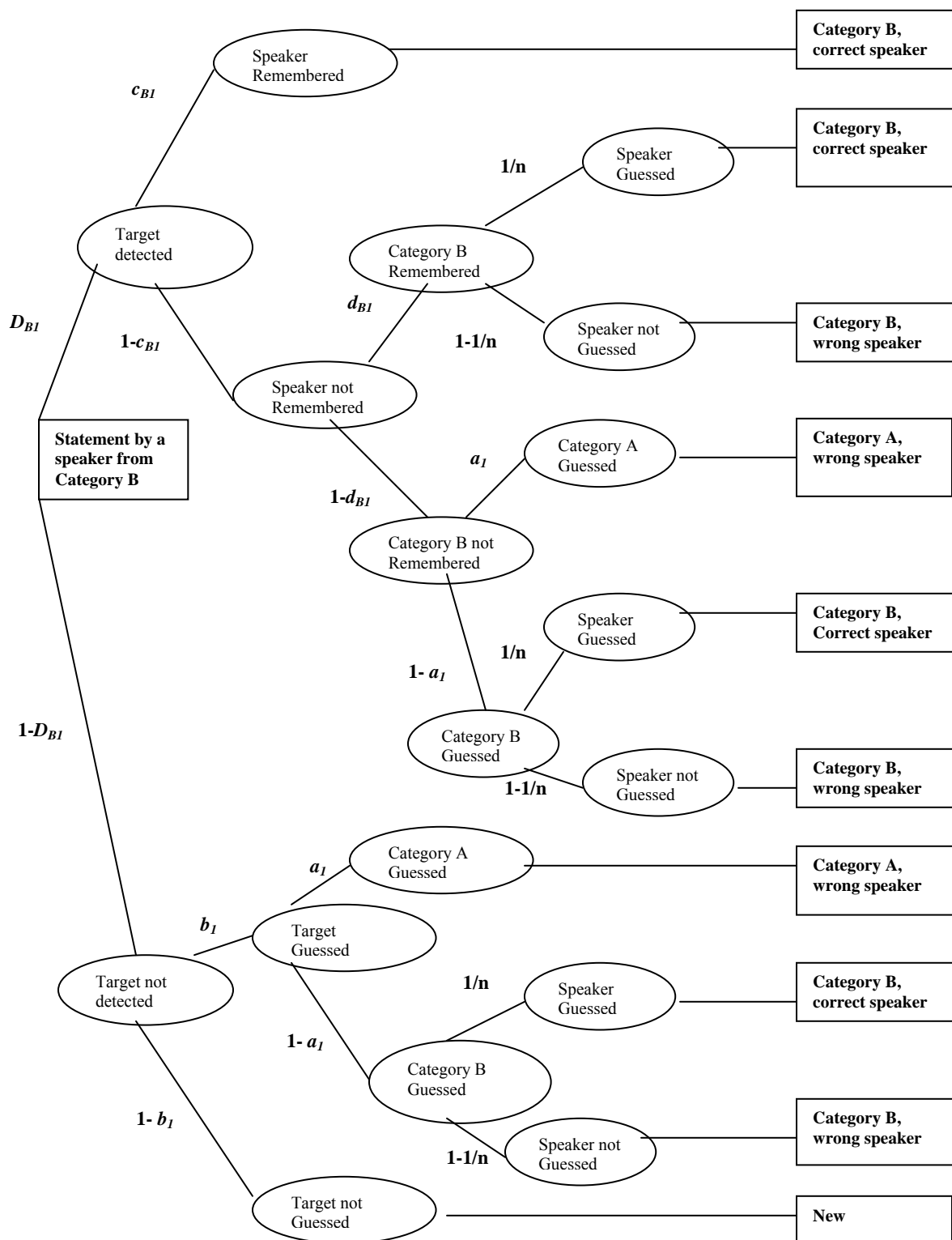
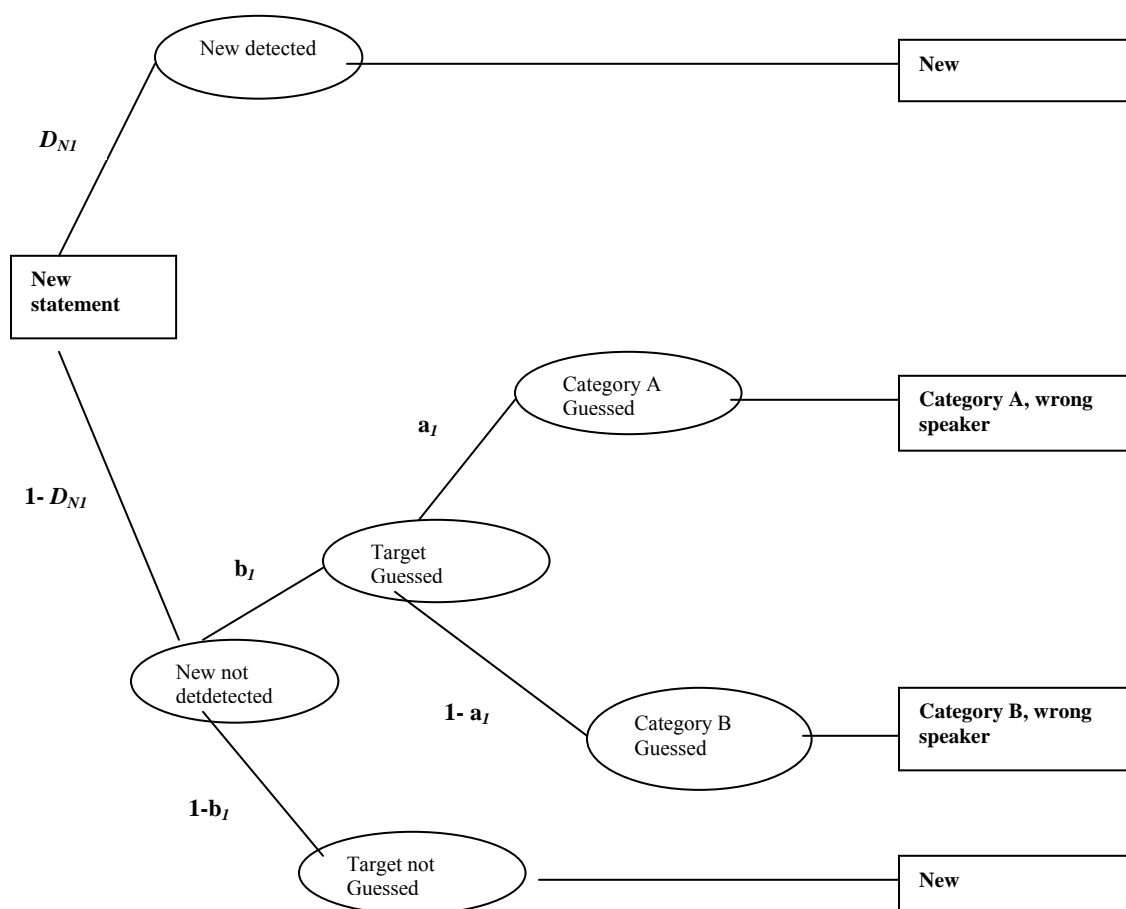
Figure 2
continued

Figure 2
continued



Figures 3: Model Figure for Control-Prime, Sexual-Orientation Condition

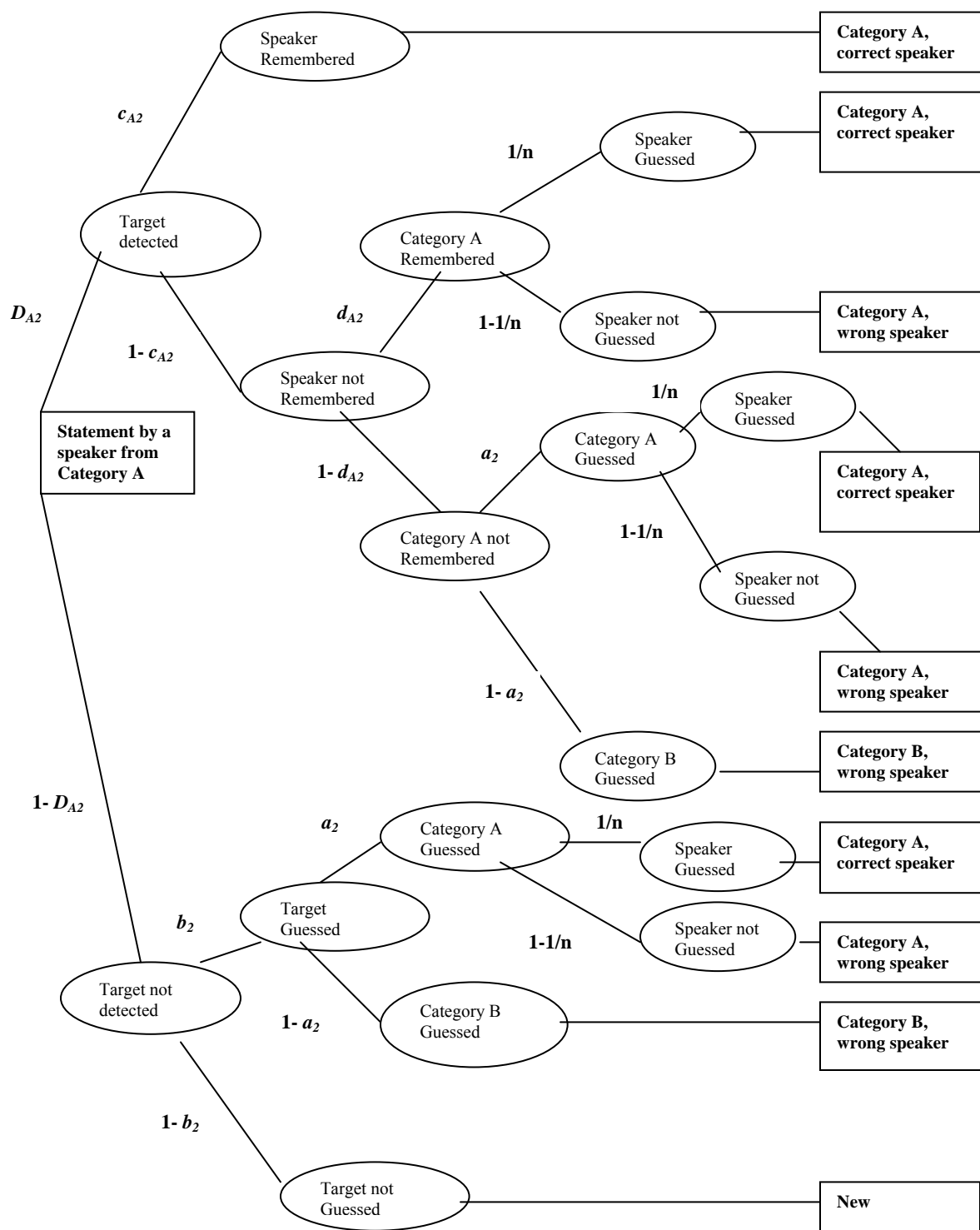


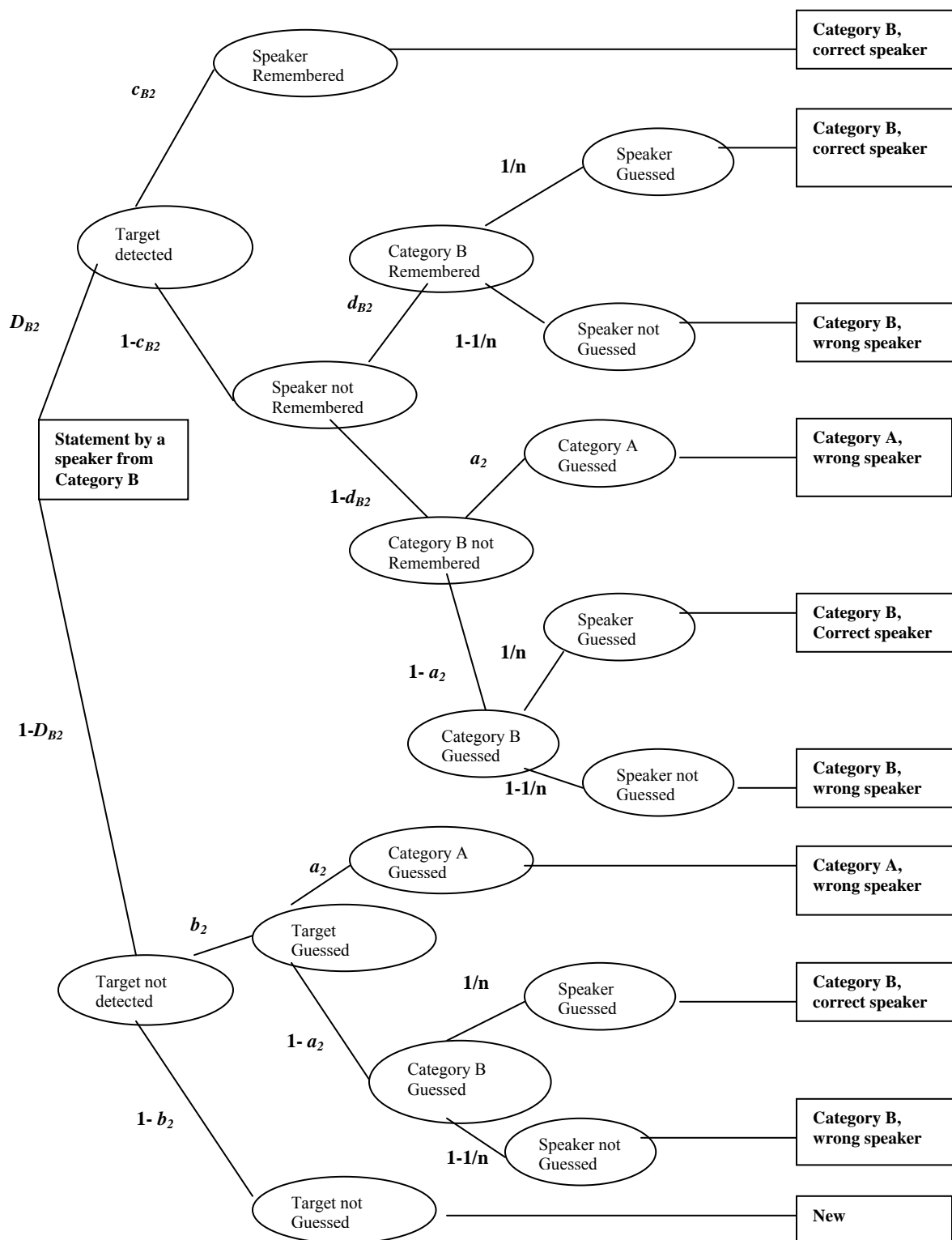
Figure 3
continued

Figure 3
continued

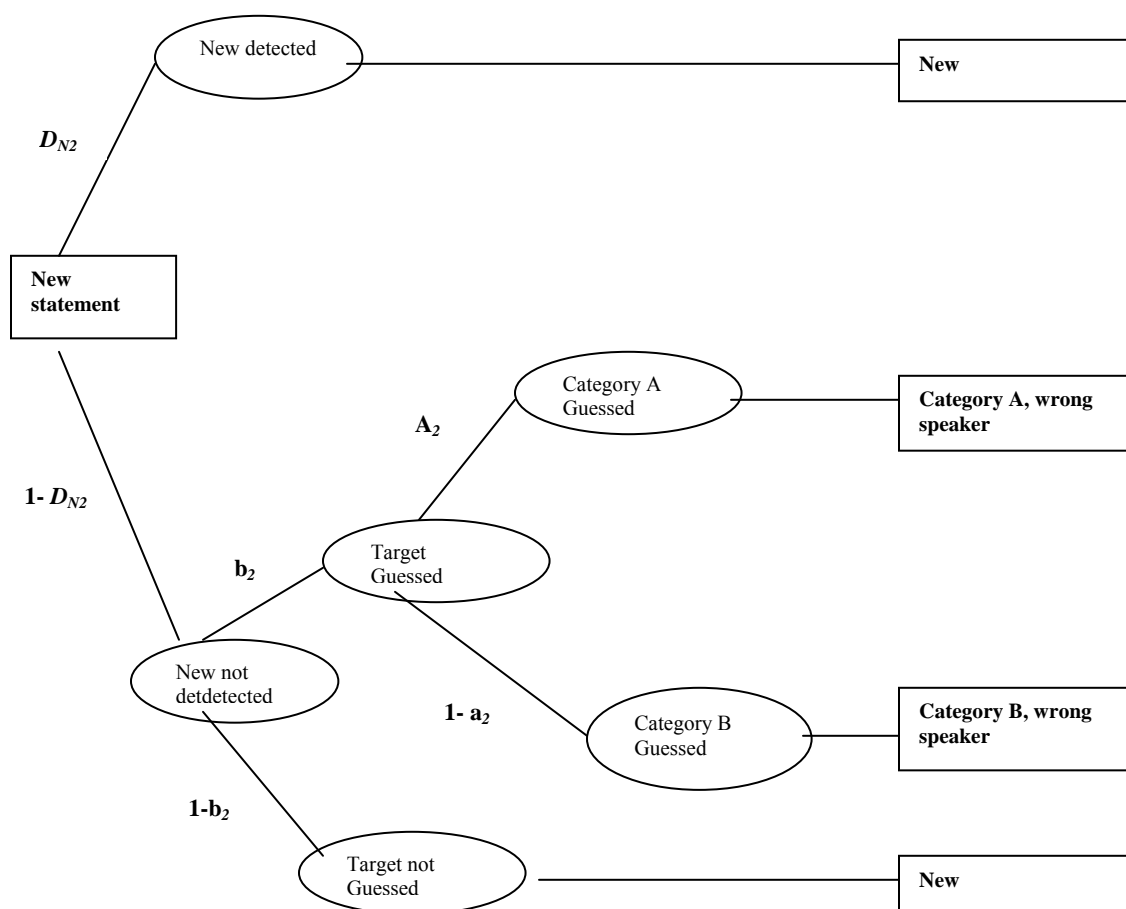


Figure 4: Model Figure for Feminine-Prime, Hometown Condition

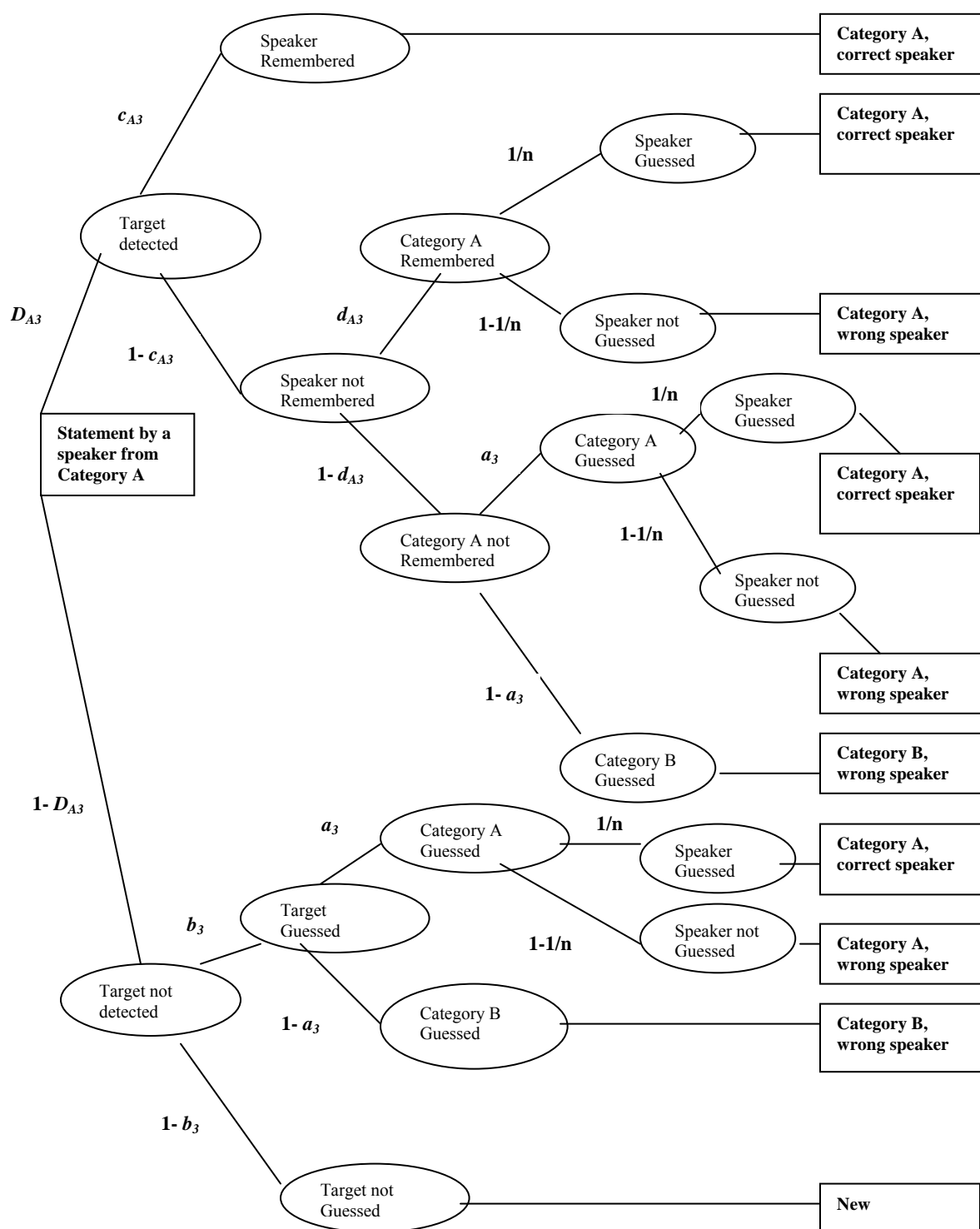


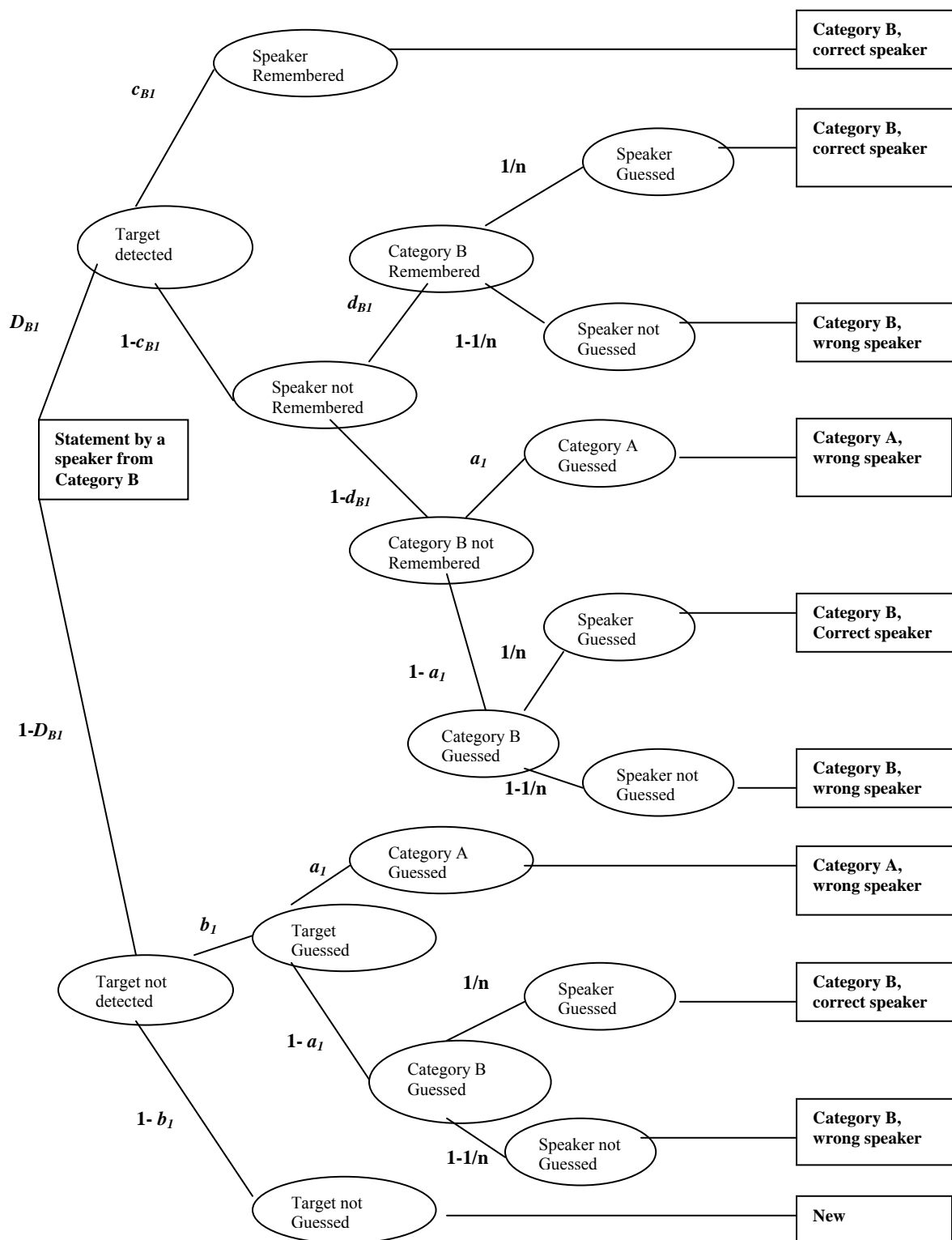
Figure 4
continued

Figure 4
continued

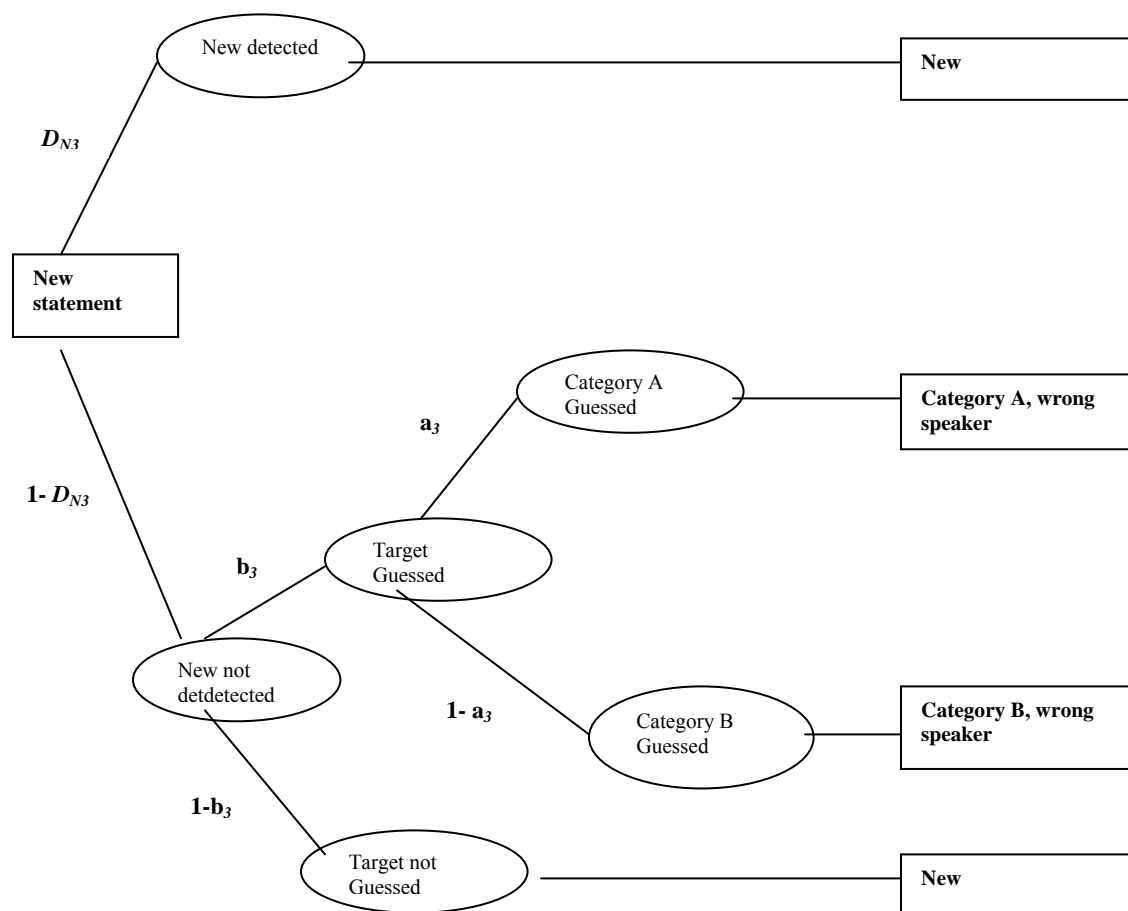


Figure 5: Model Figure for Control-Prime, Hometown Condition

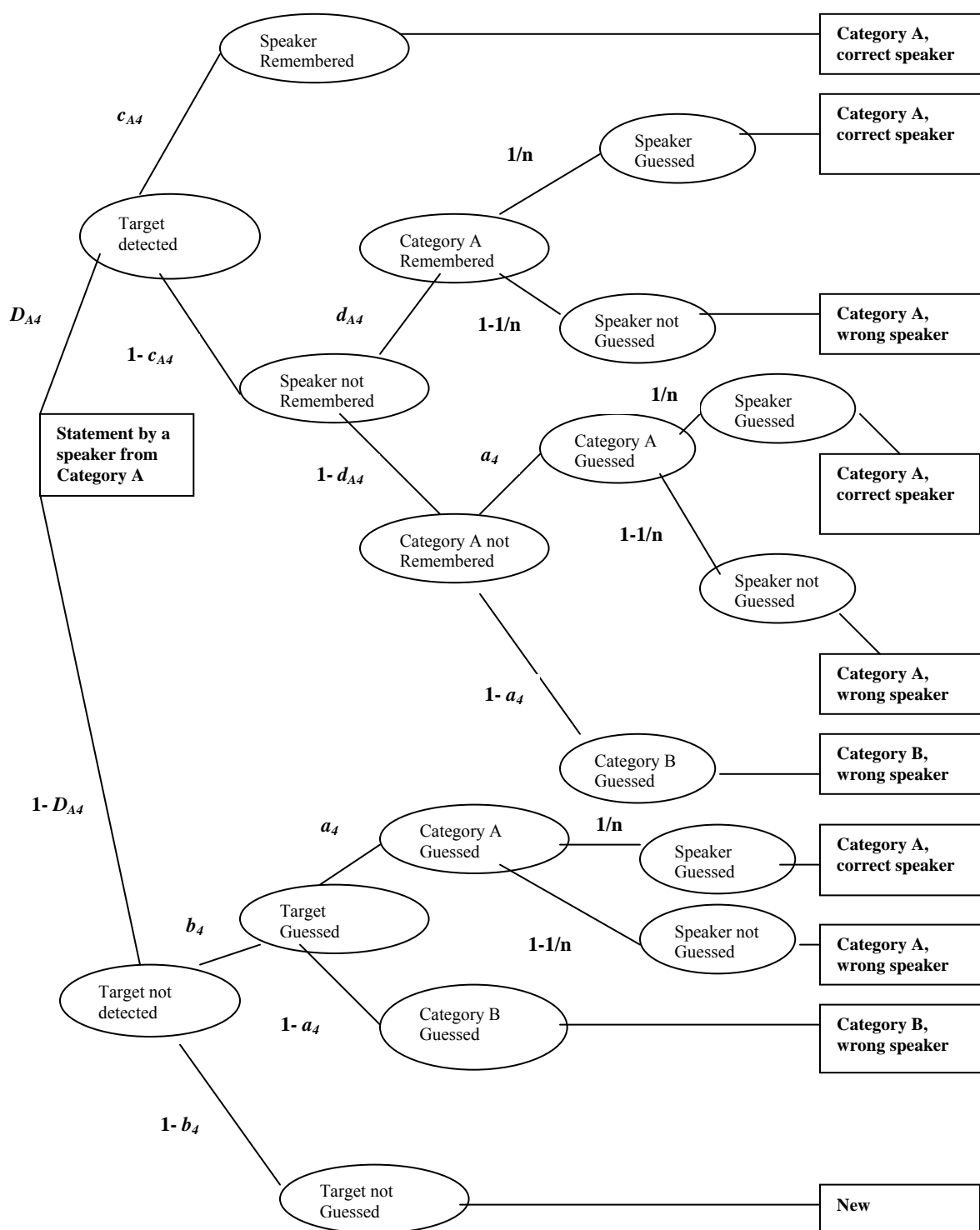


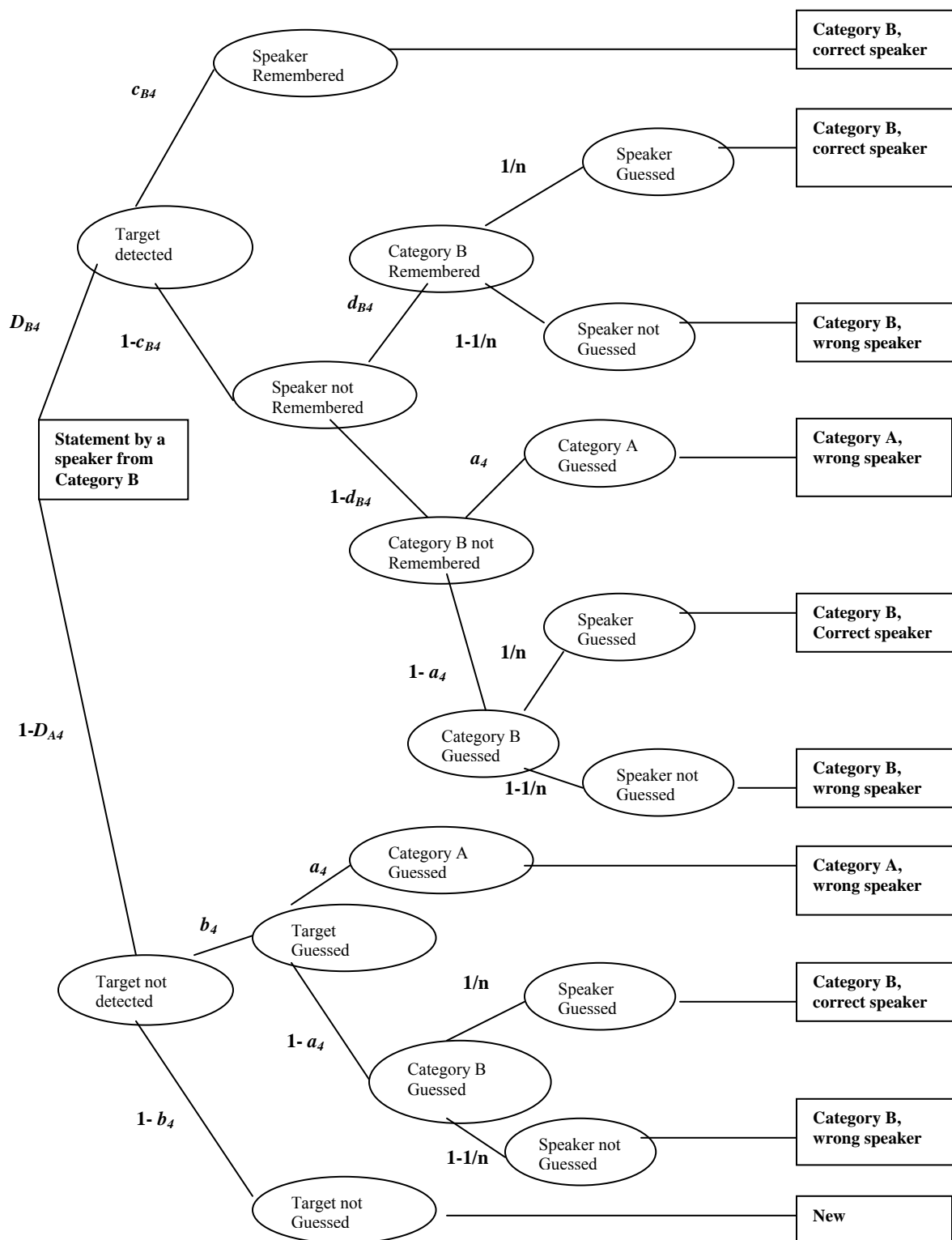
Figure 5
continued

Figure 5
continued

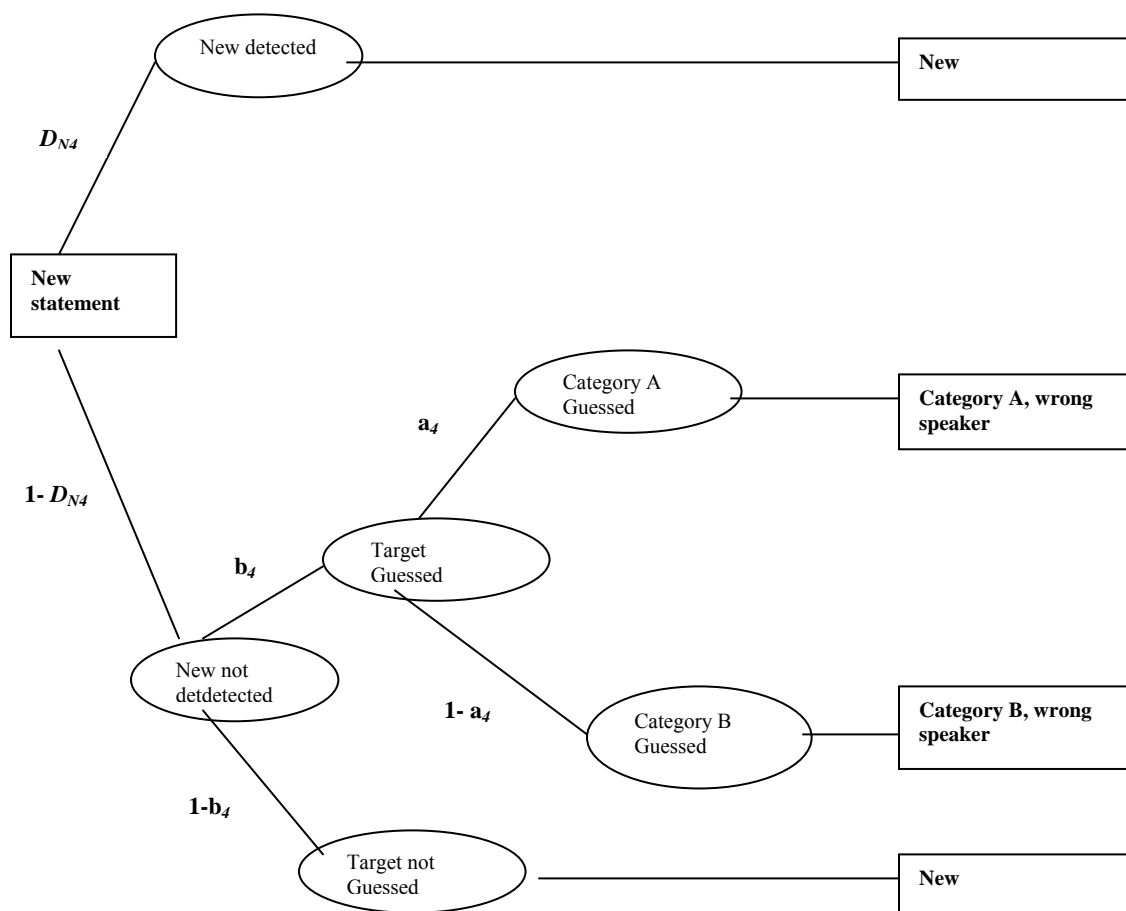


Figure 6: Expected Categorization and Individuation Parameters

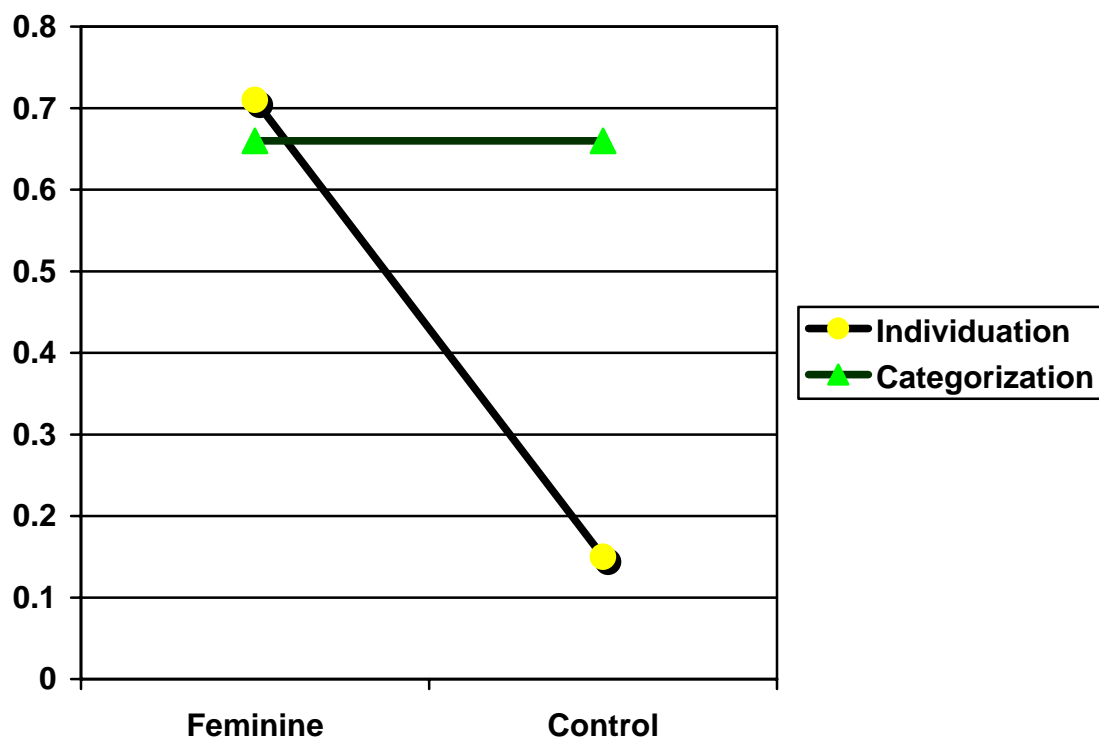


Figure 7: Expected Liking and Willingness to Interact with Gay Speakers

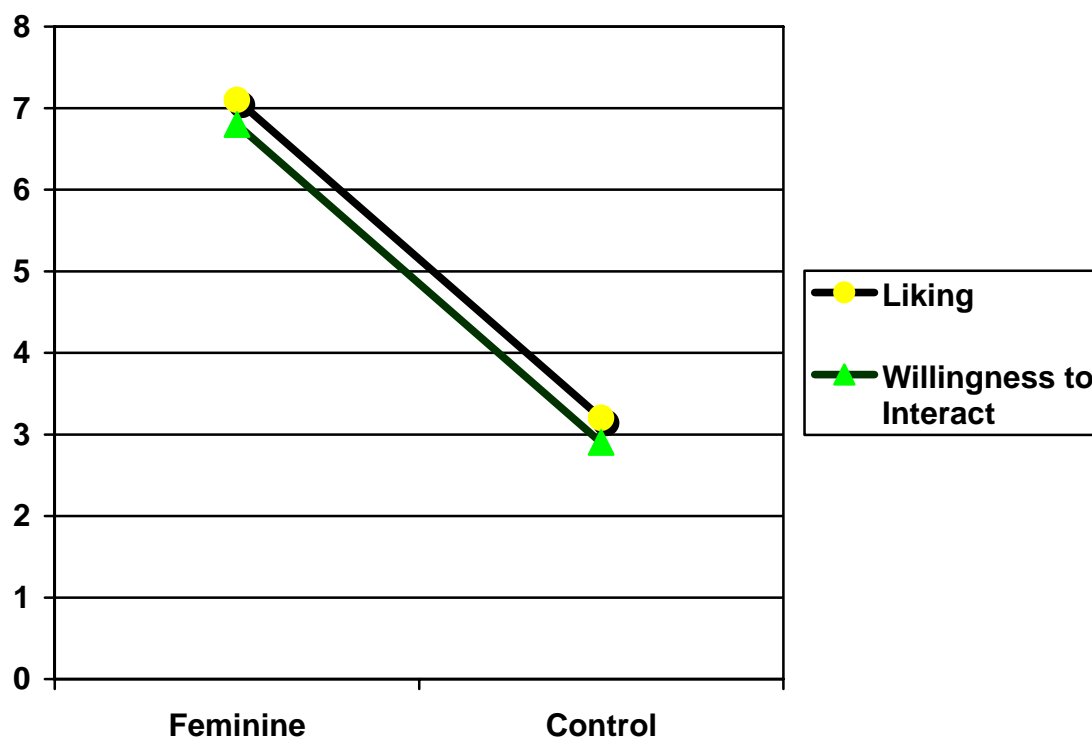


Figure 8: Expected Path Diagram and Coefficients Predicting Liking

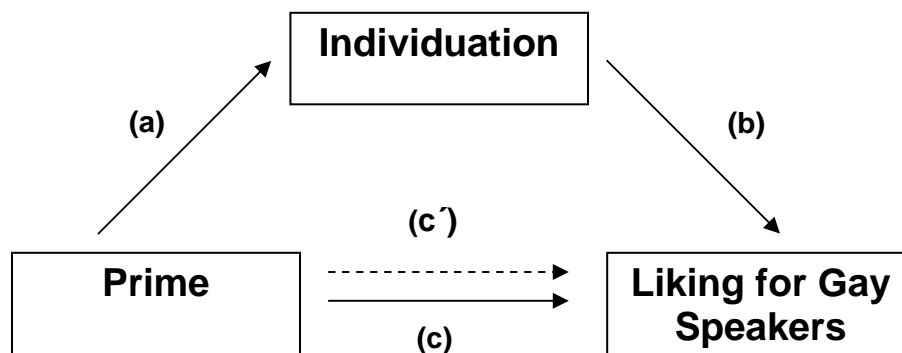
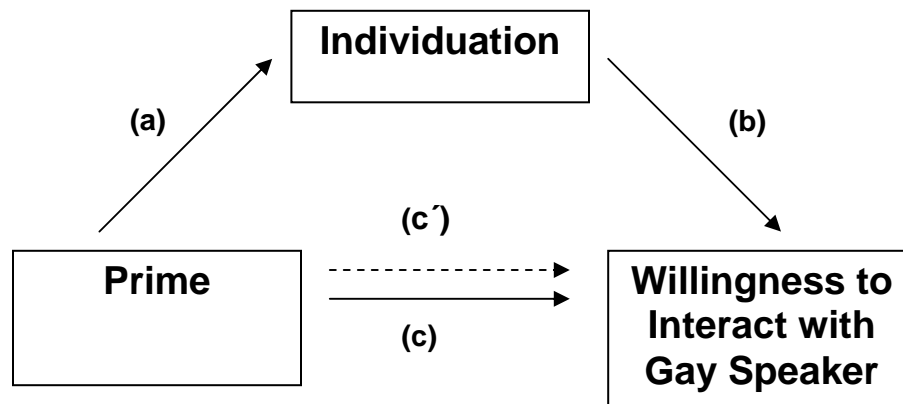


Figure 9: Expected Path Diagram and Coefficients Predicting Willingness to Interact



Appendix A

SCRAMBLED SENTENCE TEST (Feminine)

Instructions: For each set of words below, make a grammatical 4-word sentence, and write it down in the blank provided.

For example:

flew eagle the plane around
The eagle flew around

1. dog timid ball is the
2. ran assisted the she child
3. steak is tender fork the
4. he nice funny seems only
5. a personality red great what
6. her dropped makeup she applied
7. game he secret the kept
8. plays observes he occasionally them
9. she plant her expressed concern
10. wind slippery warm the was
11. be they assessed late will
12. traffic run oncoming for yield
13. they affectionate facts the know
14. was polite she individual always
15. is usually talking he home

Appendix B

SCRAMBLED SENTENCE TEST (Control)

Instructions: For each set of words below, make a grammatical 4-word sentence, and write it down in the blank provided.

For example:

flew eagle the plane around
The eagle flew around

1. he what want did summer
2. him dog often they meet
3. begin you sometime will when
4. haven't bloomed flowers him these
5. look stars the decision at
6. truth he understand easy the
7. the reason sudden what is
8. wanted he as to laugh
9. grass green orange is the
10. plant will the suggest survive
11. do did what done he
12. interesting movie was they the
13. ignored the she did homework
14. start foreign now the task
15. hat chose he the wanted

Appendix C

Bem Sex-Role Inventory (BSRI)

Bem, 1974

Please indicate on the following scale how well each of the following traits describes you:

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

- | | |
|----------------------------------|--------------------------------------|
| 1. Self-reliant | 31. Gentle |
| 2. Yielding | 32. Gullible |
| 3. Acts as a leader | 33. Loves children |
| 4. Aggressive | 34. Loyal |
| 5. Ambitious | 35. Sensitive to the needs of others |
| 6. Analytical | 36. Shy |
| 7. Assertive | 37. Soft spoken |
| 8. Athletic | 38. Sympathetic |
| 9. Competitive | 39. Tender |
| 10. Defends own beliefs | 40. Understanding |
| 11. Dominant | 41. Warm |
| 12. Forceful | 42. Adaptable |
| 13. Has leadership abilities | 43. Conscientious |
| 14. Independent | 44. Conventional |
| 15. Individualistic | 45. Friendly |
| 16. Makes decisions easily | 46. Happy |
| 17. Masculine | 47. Helpful |
| 18. Conceited | 48. Inefficient |
| 19. Self-sufficient | 49. Jealous |
| 20. Strong personality | 50. Likable |
| 21. Willing to take a stand | 51. Moody |
| 22. Willing to take risks | 52. Reliable |
| 23. Affectionate | 53. Secretive |
| 24. Cheerful | 54. Sincere |
| 25. Childlike | 55. Solemn |
| 26. Compassionate | 56. Tactful |
| 27. Does not use harsh language | 57. Theatrical |
| 28. Eager to sooth hurt feelings | 58. Truthful |
| 29. Feminine | 59. Unpredictable |
| 30. Flatterable | 60. Unsystematic |

Modified Affect-Arousal Scale

Please indicate how you are feeling at this moment on the following scale:

1.	Bad	Good
2.	Disappointed	Satisfied
3.	Happy	Sad
4.	Pleased	Displeased
5.	Calm	Excited
6.	Tired	Energetic
7.	Elated	Down
8.	Aroused	Sedate

Appendix E

IM-G and EM-G scales

Instructions: For each of the following statements, please indicate the extent to which you agree or disagree with the statement according to the scale below

- | <i>Strongly Disagree</i> | | <i>Strongly Agree</i> |
|--------------------------|--|-----------------------|
| 1 | 2 3 4 5 6 7 | 8 9 |
| 1. _____ | I try to hide any negative thoughts about gay men in order to avoid negative reactions from others. | |
| 2. _____ | I attempt to act in non-prejudiced ways toward gay men because it is personally important to me. | |
| 3. _____ | According to my personal values, using stereotypes about gay men is OK. | |
| 4. _____ | I try to act non-prejudiced toward gay men because of pressure from others. | |
| 5. _____ | I am personally motivated by my beliefs to be non-prejudiced toward gay men. | |
| 6. _____ | If I reacted prejudiced toward gay men, I would be concerned others would be angry with me. | |
| 7. _____ | Because of today's PC (politically correct) standards I try to appear non-prejudiced toward gay men. | |
| 8. _____ | Being non-prejudiced is important to my self-concept. | |
| 9. _____ | Because of my personal values, I believe that using stereotypes about gay men is wrong. | |
| 10. _____ | I attempt to appear non-prejudiced toward gay men in order to avoid disapproval from others. | |

Appendix F

Funnel Debrief Questionnaire

1. What do you think the experiment was about?
2. Did any of the tasks that you completed seem related in any way?
3. Have you seen the scrambled sentences before? If so, please explain where you saw them and what you were told the purpose of them was.
4. Do you think the scrambled sentences influenced your behavior in any of the other tasks? If so, please describe how they influenced you.
5. What is your sexual orientation?
 1. Heterosexual
 2. Bisexual
 3. Gay
 4. Undecided
 5. Other

Herek, 1988

Strongly Disagree 1 2 3 4 5 6 7 8 9 Strongly Agree

1. _____ Male homosexual couples should be allowed to adopt children the same as heterosexual couples.
2. _____ I think male homosexuality is disgusting.
3. _____ Male homosexuals should not be allowed to teach school.
4. _____ Male homosexuality is a perversion.
5. _____ Just as in other species, male homosexuality is a natural expression of sexuality in human men.
6. _____ If a man has homosexual feelings, he should do everything he can to overcome them.
7. _____ I would not be too upset if I learned that my son were a homosexual.
8. _____ Homosexual behavior between two men is just plain wrong.
9. _____ The idea of male homosexual marriages seems ridiculous to me.
10. _____ Male homosexuality is merely a different kind of lifestyle that should not be condemned.

Appendix H

Pool of Stimulus Sentences (Study 2)

Related to Course Requirements

1. I believe that the Tier III courses should not be required.
2. Prerequisites for various courses should be reduced or eliminated.
3. The foreign language requirement is important, but should be lightened.
4. The Tier II requirements should be extended to allow more choices.
5. The course requirements should be more clearly spelled out for students.
6. One or two business courses should be required for every student.
7. The number of elective courses should be increased.
8. Course requirements should be more focused in the student's major.
9. Classes should include hands on opportunities, like labs and demonstrations.
10. Students who have undeclared majors should be able to take more classes.
11. It would be helpful if more courses were offered each quarter.
12. There should be more room to take classes outside of one's major.
13. Students should be able to place out of certain classes, like freshman English.
14. I think that more evening classes should be offered to accommodate students.
15. Most classes on campus could be more challenging to students.
16. It would help transfer students if more of their previous credits counted here.
17. OU students could benefit from having more 2 and 3 credit courses offered.
18. I think that if more English classes were required, our students would benefit.
19. The DARS could be easier to read and understand.
20. Freshman would be better off if there were more 100 level courses offered.
21. The number of hours required to graduate should be reduced.
22. Course content and requirements should be available prior to registration.

Related to Classrooms and Instructors

23. There should be more seats available in the classrooms.
24. All of the classrooms should be equipped with the appropriate technology.
25. Something should be done to regulate the temperature in the classrooms better.
26. I would make the seats in some of the classrooms more comfortable to sit in.
27. Students could benefit if the class sizes were a little bit smaller.
28. If I could change the classrooms, I would add more left-handed desks.
29. I think that new buildings should be built so that more classes can be offered.
30. We need to have a wireless connection in each and every classroom.
31. The lighting in each of the classrooms could be brighter.
32. All professors teaching large classes should be given microphones.
33. It seems like we could get rid of the black boards in the classrooms.
34. There should be more room between rows of seats in the lecture halls.

35. Money should be evenly disbursed between colleges so that facilities are equal.
36. The classrooms should be cleaned more often, because some are a mess.
37. All professors and lecturers at OU should be fluent in English.
38. The instructors could be more available for students with more office hours.
39. All instructors should be required to be on blackboard.
40. Professors should try to be more approachable and friendly toward students.
41. Instructors should be required to follow their syllabus more directly.
42. Courses should be standardized so that they don't differ so much between instructors.
43. Graduate students should not be teaching large lecture courses.
44. Given that we are adults, class attendance policies should be more lenient.
45. Testing could be improved if all instructors were fairer in their questions.
46. It would be nice if advisors took more of an interest in undergraduate students.
47. Instructors should be given more freedom to run their classes as they want to.
48. OU should put more of an emphasis on teaching than on research and money.
49. It should be mandatory for professors to meet with each student once per quarter.
50. More grants and scholarships should be available for students.
51. Financial aid should not be based solely on parent's income.
52. Roderick McDavis should not be allowed to eliminate certain majors while students are still in those programs
53. Classes should be taught on the semester system and the quarter system should be eliminated.
54. Tuition for courses should be less expensive.
55. Instructors should choose books that are not so expensive for students.
56. The admission standards should be raised so that the quality of students is higher.

Related to Library and other Study Facilities

57. The library hours should be longer and more flexible.
58. The desks in the general stacks section of the library should be larger.
59. The library should have more quiet study areas that do not have computers in them.
60. The library could use more computers so that everyone can be accommodated.
61. The study areas in the library could be more comfortable and inviting.
62. More free printing should be available for students at the library.
63. I think students would appreciate it if media were more accessible at the library
64. All students should be given a comprehensive map of the library.
65. One change for the library should be that they increase the number of dvds available.
66. The library should have more student writing help available.
67. The library should send out e-mail alerts before a book is due.

- 68. The website for the library could be easier to navigate.
- 69. There should be more group areas in the library for group work.
- 70. I think that the library should have restrooms on every floor.
- 71. The learning area of the library on the second floor should be expanded.
- 72. Students need to have more employees available to help them at the library.
- 73. You should be able to check out books on more than one floor of the library.
- 74. It would be nice if the dorms had mini libraries in them.
- 75. The café at the library should be open longer.
- 76. More macs should be added to the library for apple users.
- 77. OU needs to make sure that our computer networks are secure so that students are protected.

Related to Dining Options and Locations

- 78. The dining system at OU could be improved by adding more variety to each meal.
- 79. I feel like students should be able to use their dining credits when they want to.
- 80. Sub sandwiches should be offered every dinner at Boyd.
- 81. The students' health would benefit from more fresh foods in the dining halls.
- 82. The dining halls should offer more vegetarian options.
- 83. It would be great if the dining halls were cleaner.
- 84. I think that there should be more grab and goes around campus.
- 85. I don't think that fruit should count as a side item in the dining system.
- 86. OU should offer more dining hall nights such as carnival night.
- 87. OU should add one dining hall on campus that offers only healthy organic food.
- 88. It would be helpful if there were a meal plan that included fast food restaurants.
- 89. The dining halls do not include enough ethnic food choices.
- 90. I am tired of eating fried foods in the dining halls and think that they should be cut out of the menu.
- 91. The dining plan would better serve students if meals were counted by the quarter and not by the week.
- 92. I don't feel that students should be forced to get a meal plan.
- 93. The dining halls should be friendlier to commuter students.
- 94. The dining halls should be open longer than 4:00 to 6:30 because of evening classes.
- 95. The nutritional value of all food choices should be available in the dining halls.
- 96. We should model our meal plans after other state schools like OSU or Miami.
- 97. The portions of food at each grab and go should be bigger.
- 98. There should be more of an effort made to have enough food for everyone in the dining halls.

99. I would like to see a wider selection of bar-style foods and make-your-own stations in the dining halls.

Related to Campus Parking and Housing Issues

- 100. All residence halls should have air conditioning installed.
- 101. OU needs more parking lots for commuters that don't require passes.
- 102. For students living on campus, more parking closer to the dorms should be available.
- 103. Freshman should be allowed to have their cars on campus.
- 104. I think that there should be more long term metered spaces, like 5 or 10 hours.
- 105. We could use more available parking for visitors.
- 106. There is more parking for faculty and staff than is necessary and it should be made into student space.
- 107. The parking garages on campus should have more affordable permit parking.
- 108. There should be clear labels on lots that you will get towed from on campus.
- 109. I think that the fire lanes around campus need to be repainted because they are difficult to see.
- 110. I would like to see some 15 minute meters around campus for quick stops into buildings.
- 111. If freshman can't park on campus, better transportation should be available around campus.
- 112. Parking on campus after 5:00 in the evening, should not require a permit.
- 113. Students should be able to purchase temporary parking passes for a week at a time.
- 114. Underclassmen should have an opportunity to park in the garage under Nelson.
- 115. OU should add better traffic control so that students can cross the streets safely.
- 116. More transportation should be available and accessible to handicapped students.
- 117. There should be more residence halls on campus because they are currently too full.
- 118. More off campus housing should be available for sophomores.
- 119. My suggestion is that we add a room for bikes in the dorms.
- 120. The excessive number of rounds that RAs and SAs make in the dorms is distracting.

Related to Recreation and the Ping Center

- 121. The Ping center could use a bigger weight room with more weights and machines.

- 122. Visitors should have an easier time getting a temporary pass to Ping.
- 123. It would be great if Ping had a real indoor soccer field rather than the gym floor.
- 124. I think students would enjoy batting cages at Ping so that they could practice more.
- 125. I would ensure that the Ping center really stays open until midnight.
- 126. Each student should get three free guest passes for the Ping recreation center each quarter.
- 127. I think that the dress code for the treadmill room at Ping is unnecessary.
- 128. It is too bad that the Ping center isn't more centrally located on campus.
- 129. Ping should make a rule that students have to wipe off their equipment before leaving.
- 130. OU students would use more ping pong tables if they were available at Ping.
- 131. A method should be established for students to get into Ping with their PID number.
- 132. Ping should open earlier in the morning so there is time to work out before 8:00 am classes.
- 133. If there were more activities at Ping at night, it might help with the student drinking problem.
- 134. I think that the staff at Ping should receive customer service training, because they can be rude.
- 135. The aquatic center should be located in the same building as Ping.
- 136. Staff should be available at Ping to help students learn how to appropriately use equipment.
- 137. The Ping center needs more basketball courts because the wait is too long.
- 138. The equipment rental desk at Ping should be in a better location.
- 139. Given that we already pay large fees for Ping, all of the activities should be free for students.
- 140. I would add a 50 meter pool to the back of the Ping center along with a recreational pool.
- 141. I think that the Ping center should be open 24 hours a day 7 days a week.
- 142. Recreation on campus could be improved if all ten weeks were used to play each sport.
- 143. Freshmen should be required to take a general recreation course to familiarize them with their options.
- 144. The refs for intramurals should receive official training.
- 145. The sign up time for intramurals should be longer than two days.
- 146. The basketball courts on the front four are getting bad and need some work.

- 147. OU should bring in more musical acts for students since Athens doesn't have much to offer.
- 148. If I could change recreation on campus, I would make all activities free for students.
- 149. There should be more opportunities for field trips on campus, like a trip to Strouds Run.
- 150. We should have a battle of the bands on campus every year.
- 151. Recreation could be more tailored to what students really want by holding student forums on the issue.
- 152. The Halloween festival should be more widely embraced and planned for.

Appendix I

Ingroup and Outgroup Liking and Willingness to Interact with Targets

Adapted from Vescio et al., 2004

Please indicate on the following scale how you feel about each speaker:

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

Ingroup and Outgroup Liking Questions:

1. Had I met Person X upon first arriving at OU we would have probably been friends.
2. Person X is a likable person.
3. I would feel uncomfortable having a candid discussion with person X about the difficulties I experienced adjusting to college. (r)
4. I would avoid having a friendship with Person X. (r)
5. Person X's feelings are similar to the feelings I have about OU
6. Person X's background/interests are very different from my own background/interests. (r)
7. I have little in common with Person X. (r)
8. I would enjoy having Person X as a neighbor.

Willingness to Interact Question:

9. If I had a chance to work with Person X on coming up with strategies to improve OU, would I want to do so.