

GENDER MISTAKES AND INEQUALITY

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DOCTOR OF PHILOSOPHY

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I certify that I have read this dissertation and that, in my opinion, it is fully adequate in scope and quality as a dissertation for the degree of Doctor of Philosophy.

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## ABSTRACT

In this project, I assess the impact of gender mistakes on various individual attitudes and behaviors that contribute to gender inequality. A *gender mistake* occurs when an actor learns that he or she has incorrectly sex categorized another. I argue that gender mistakes have lingering effects on the behaviors and attitudes of the actor who made the mistake, even after they are corrected. My argument implies that when a man is mistaken for a woman, he will enjoy less of a gender advantage in that interaction, even after the mistake is corrected, than he would have if the mistake had never occurred. A woman who is mistaken for a man, on the other hand, will suffer less of a gender disadvantage than she would have if the mistake had not happened. A modified version of the standard expectation states experimental protocol is used to test the arguments.

My results indicate that gender mistakes have no impact on an actor's interaction with and attitudes toward the person who was incorrectly sex categorized, once the mistake has been corrected. I found only limited support for the idea that experiencing a gender mistake reduces an individual's sexist attitudes. For males, there is no effect of experiencing a gender mistake on sexist attitudes. For females, gender mistakes affect some aspects of sexism, but not others. Specifically, females who experience a gender mistake score lower on measures of Heterosexual Intimacy and Complementary Gender Differentiation than do females who do not experience a gender mistake. The one area in which gender mistakes do appear to have significant effects for both males and females is in the subsequent use of sex as a basis for social categorization. For all participants, experiencing a gender mistake is associated with decreased use of sex as a basis of social categorization.

This research implies that gender mistakes could contribute to a reduction in gender inequality through the decreased adherence to some sexist attitudes on the part of women, and the decreased use of sex as the basis for social categorization.

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## CHAPTER 1

### STATUS MISTAKES AND GENDER: AN INTRODUCTION

#### 1.1 Introduction

Social categorization is a ubiquitous and seemingly essential component of social interaction. In order to interact successfully, an actor must first define “self” and “other” according to some shared system for social categorization. A shared system of social categorization consists of social and cultural representations that define the significant dimensions on which people will be categorized, as well as the “evidence” that will be used to categorize a given person along a given dimension. For example, as core bases of social stratification, race and sex are socially and culturally important enough that they are virtually automatic bases of social categorization in most interactions, in most societies. Moreover, the “evidence” used to categorize an actor by race or sex is socially and culturally constructed, varying across societies and across time (Frankenberg 1993; Kessler and McKenna 1978; Omi and Winant 1994).

While the relatively automatic process of social categorization facilitates social interaction, it also leads to stereotyping and bias (for review, see Fiske 1998). If unchecked, these processes can lead to discrimination and inequality, suggesting that social categorization, and the cultural definitions it draws on, play pivotal causal roles in topics that represent core concerns of sociology (Bielby 2000; Howard 1994; Reskin 2000).

While some degree of social categorization occurs in virtually all interactions, the process does not occur uniformly across interactions. The particular social feature or features that an actor uses to categorize another varies across actors and situations. In

addition, the social categorization process itself varies on dimensions such as the ease, quickness, and accuracy of the categorization. Examining the impact of variations in processes of social categorization should lead to a fuller understanding of how and why social categorization contributes to inequalities based on social categories.

I focus on variation in the *accuracy* of social categorization. When an actor learns that he or she has made an inaccurate categorization, the link between categorization and ensuing patterns of bias and inequality is likely to be affected. For example, I argue that when an actor learns that a person he had categorized as a man is actually a woman, he will treat that person differently thereafter than if he had known she was a woman all along. This is likely to occur primarily due to the powerful effects of initial impressions and expectations; particularly those associated with gender.

I concentrate on sex categorization because of the primacy of sex as a categorization system and because of its link to gender inequality. Gender is both visibly accessible and culturally meaningful, making it one of the primary categorization systems used in Western societies (Fiske 1992, 1998). Research has shown that actors unconsciously sex-categorize any specific other with whom they interact (Brewer and Liu 1989; Stangor et al. 1992). Moreover, recent sociological analyses of gender inequality highlight the important causal role that sex categorization plays in creating and conserving gender inequality (Bielby 2000; Reskin 2000; Ridgeway and Correll 2000).

## **1.2 Status Mistakes and Gender**

I use the term *gender mistake* to describe a situation in which an actor learns that he or she has incorrectly sex categorized another. Gender mistakes can occur in a variety of situations, such as when reading an email or resume from someone with a gender-

neutral name, or when interacting with an “effeminate” looking man or a “masculine” looking woman. Sex categorization is an inherently social process in which actors use cultural cues regarding gender as proxies for biological sex differences (Kessler and McKenna 1985; West and Zimmerman 1987). Biological verification of the sex category we ascribe to others is rarely available. Therefore, a sex categorization can be considered “correct” when we attribute to a person the gender that the person claims for himself or herself.

A gender mistake is a specific type of a more general phenomenon referred to as a status mistake (Bourg 2000). A status mistake occurs when an actor makes an incorrect assessment of another actor’s value on a particular status characteristic. Since the actor who made the incorrect categorization believes it to be true, she will act as if it is true, at least until she learns otherwise (Thomas and Thomas 1928). The target of the mistake often acts in the situation as if the mistake is true as well. Goffman (1959, 1967) notes that actors often are willing to accept and act on inaccurate, and even unfavorable, definitions of their own role because doing so facilitates interaction. In an empirical test of Goffman’s descriptive account, Troyer and Younts (1997) have shown that actors indeed adjust their behavior to others’ expectations of them, even when those expectations are based on mistaken information. Moreover, experimental research by Skrypnek and Snyder (1982) specifically demonstrates that women adjust their behavior to conform to stereotypes associated with the gender their task partner believes them to be.

For the actor who made the mistake, therefore, the main impact of uncorrected status mistakes is simply that the stereotypes and biases primed by social categorization

are based on false information. Neither the process by which categorization leads to such outcomes, nor the strength of those outcomes, is likely to be affected by an uncorrected status mistake.

For these reasons, as in earlier research on status mistakes (Bourg 2000), I focus on what happens after a mistake is corrected. I address the question of whether gender mistakes have lingering effects on ensuing sources and patterns of inequality after they are corrected. I develop and test the argument that gender mistakes do indeed have a lasting influence, after they are corrected, on the behaviors and attitudes of actors who initially possess mistaken information about another. I also argue that gender mistakes that are advantaging to the actor who made the mistake have more pronounced lingering effects on that actor's subsequent behavior and attitudes than do mistakes that are disadvantaging.

My argument implies that when a man is originally mistaken for a woman, he enjoys less of a gender advantage in that interaction, even after the mistake is corrected, than he would have if the mistake had never occurred. Conversely, a woman who is mistaken for a man suffers less of a gender disadvantage in that interaction, even after the mistake is corrected, than she would have if the mistake had not happened. I argue that the impact of a mistake in which a man is mistaken for a woman will be greater than will the impact of a mistake in which a woman is mistaken for a man.

If gender mistakes occur in many interactions, involving many actors, they have the potential to contribute to a reduction in gender inequality through the cumulative effects of decreased male advantage in interaction. This, in turn, suggests that the

maintenance of gender advantage for men in society is dependent on the cultural enforcement of clear-cut gender displays by actors in virtually all situations.



## CHAPTER 2

### THEORETICAL BACKGROUND

#### 2.1 Social Categorization

Interest in the origins and the implications of social categorization can be traced to the early days of sociological thought. Simmel ([1908] 1950) notes the primacy of this process when he claims, “the first condition of having to deal with somebody ... is to know with whom one has to deal” (p. 307). Mead’s (1934) description of the development of the self implies that actors must categorize one another, and the “generalized other”, in terms of their relative roles in order for interaction to proceed. In his classic study *The Nature of Prejudice*, Allport (1954) argues that the process of categorizing others is inevitable, normal, and necessary to give meaning and order to social interaction. Recent sociological treatments of categorization stress the value of turning to insights from social cognition theory to uncover the original causes of much discrimination and inequality (see Bielby 2000; Howard 1994; Jost and Banaji 1994; Reskin 2000; Ridgeway and Correll 2000). Social categorization is considered an original cause of discrimination in the sense that discrimination on the basis of categories such as race and gender could not occur if actors did not routinely categorize one another on these dimensions.

According to social cognition theory, categorizing actors as members of coarsely defined groups is “a pervasive human propensity,” with a number of potentially automatic ramifications (Fiske 1998, p. 364). Categorization, even when based on experimentally manipulated random and trivial criteria, leads to ingroup favoritism and outgroup derogation (see Tajfel 1981; Turner 1985). Ingroup preference leads actors to

be more comfortable with, have more trust in, seek equal treatment with, and generally hold more positive views of their own group (Baron and Pfeffer 1994; Perdue et al. 1990). Given white male predominance in many occupational settings, the ingroup bias that accompanies the normal process of social categorization can lead to subtle forms of race and gender discrimination in employment (see Bielby 2000; Reskin 2000; Ridgeway 1997).

Categorizing someone as a member of a social group also primes stereotypic associations about the group, even among actors who consciously reject stereotypes (Bodenhausen, Macrae and Garst 1998). Stereotypes describe what behaviors can be expected from a person of a given category and predispose observers to attend to stereotype confirming information, while blinding observers to disconfirming information (Fiske 1998). Stereotypes cause actors to exaggerate between-group differences and minimize within-group differences (Fiske 1998).

In the case of gender, the relatively automatic act of sex categorizing someone makes stereotypes about gender differences salient enough to cause discernable distortions in an actor's perceptions and judgements (Reskin 2000; Ridgeway 1997). Research has shown that it is extremely difficult to get people to attend to individuating information rather than stereotypes, once categorization has occurred. For example, even when given information that men and women in the target population were distributed equally across college majors, subjects continued to rely on gender stereotypes more than on information about individual interests in predicting whether an individual was an engineering or a nursing major (Nelson, Acker and Manis 1996).

Stereotypes often contain beliefs not only about presumed differences between groups, but also about the overall relative worth and status of groups. Studies of gender stereotypes and beliefs indicate that gender beliefs in contemporary North American societies consist of beliefs about both difference and relative status. Men are seen as more agentic and instrumental, while women are seen as more communal. In addition, gender beliefs suggest that men have higher status and are more competent at things that count than are women (Conway, Pizzamiglio Mount, 1996; Wagner Berger, 1997; Williams and Best 1990). In fact, gender beliefs evaluate men more highly overall, and therefore as more competent both at specifically “masculine” tasks, and more competent at most things than women. Women are seen as not only different, but as more competent than men only at “feminine” tasks, which are themselves devalued (i.e. lower status) (Conway et al. 1996; Eagly and Mladinic 1989). In sum, gender status beliefs are widely held cultural beliefs that evaluate men as generally more superior and as diffusely more competent than women.

While many elements of stereotypes have important consequences, status beliefs have direct relevance for inequality. In fact, status beliefs are a common feature of the stereotypes associated with many of the characteristics upon which major macro-level systems of stratification are based, such as race and gender. Status characteristics theory provides a coherent and well-documented explanation of how status beliefs, such as those about gender, contribute directly to measurable differences in power and prestige in interaction.

## 2.2 Status Characteristics Theory

Status characteristics are those categorical distinctions that are associated with widely shared status beliefs attaching different levels of competence and worth to individuals with different values of the characteristic. According to status characteristics theory, in many settings the categorizations actors make of themselves and others result in patterns of unequal power, prestige, and influence in the interaction. This occurs through a process of status generalization, by which actors who possess a valued state of a characteristic are expected to contribute more to the group goal. These actors therefore take and are given more power, influence and prestige than actors with a less valued state of the characteristic. These local structural inequalities tend to reflect and reinforce macro-level systems of inequality based on categorical distinctions.

*Specific status characteristics* are socially valued skills, knowledge, or accomplishments that are instrumental to specific tasks and imply a bounded range of competencies. Examples include computer skills, gardening ability, or specific technical knowledge. *Diffuse status characteristics* are associated with cultural stereotypes linked to both specific expectations and general expectations. It is their association with general expectations of competence and worth that distinguishes diffuse characteristics from specific ones. Gender operates as a diffuse status characteristic in the United States (Meeker 1992; Wagner and Berger 1997; Ridgeway and Walker 1995).

Status characteristics affect interaction when they become salient in the situation, either because they are a basis for discriminating among actors or because they are perceived to be relevant to the task. Once a status characteristic becomes salient, it triggers a process by which the actors in the situation form *expectation states* for

themselves and others. An expectation state is a theoretical construct roughly defined as an actor's conception of individuals' relative abilities to succeed at a certain task.

Expectation states are not necessarily conscious, are always relative to other individuals in the setting, and are specific to the task at hand. Through the process of status generalization, status characteristics lead to the creation of specific performance expectations, which in turn shape interaction in such a way as to produce behavioral inequalities among actors (Meeker 1992; Webster and Foschi 1988).

Many important refinements and elaborations have been added to the original formulation of status characteristics theory. One issue that has yet to be fully addressed, however, is the implications of incorrect status assessments, such as when a man is categorized as a woman. In earlier research (Bourg 2000), I examined the impact of status mistakes in the context of a fictitious status.

Using a variation on the standard expectation states experimental protocol, I had subjects work, over a computer network only, with a fictitious partner on a fictitious decision-making task. Depending on the experimental condition, subjects were initially told that their partner had either scored higher than them or lower than them on a test related to the group task they performed. In other words, subjects were told that they were either lower or higher status than their partner on a specific task-relevant characteristic.

After subjects had completed one round of working with their fictitious partner, they were told that the status information they had been given about their partner was wrong. Subjects who were originally told their partner was higher status than they were

then told that their partner was lower status and vice versa. In the control conditions, no mistake was made about the partner's status.

Results show that when an actor originally thought her partner was lower status than she, she deferred less often to that partner, even after the mistake was corrected, than did subjects who knew their partner's higher status all along. However, when an actor originally thought her partner was higher status than she, once she learned her partner's true lower status she treated the partner the same as did subjects who knew the partner's lower status all along.

These findings indicate that when a status mistake grants a relative status advantage to the actor who made the mistake, it has lingering effects on ensuing patterns of inequality, even after the mistake is corrected. In particular, if an actor mistakes a high status person for a low status person, she grants that person less power and prestige than she would have if she had known the person's true status all along, even after the mistake is corrected. On the other hand, I found that disadvantaging mistakes had no lingering effects on the attitudes and behaviors of the person who made the mistake, once the mistake had been corrected. Although I had predicted that all status mistakes might affect inequality, these findings imply that the only status mistakes that contribute to a reduction of inequality are those in which a high status person is mistaken for a low status person.

If gender mistakes have similar lingering effects on interaction, then a man who is originally mistaken for a woman will have less power and prestige in that interaction than he would have if the mistake had not occurred. A woman who is mistaken for a man, however, will have no more power and prestige than she would have had if the mistake

had not occurred. The cumulative impact of many men being incorrectly sex categorized, therefore, has the potential to lead to a reduction in gender inequality in terms of local power and prestige hierarchies. Many women being mistaken for men, however, may have little or no impact on the existing system of gender inequality.

### **2.3 Links to Race/Ethnicity, Post-modern Feminism, and Queer Theory**

In focusing on whether mistakes in the social categorization process might contribute to the breakdown or reduction in processes of bias, prejudice, and discrimination and to the systems of difference and stratification that they maintain, my project reflects some important broad themes articulated by a diverse body of scholars. Work in such diverse traditions as functionalist treatments of race and ethnicity and queer theory literature addresses the potential impact of eliminating or reducing social categorization entirely (see Parks and Burgess 1924; Gordon 1964; Hirschman 1983; Bem 1995; Butler 1990; Connell 1995; Lorber 1994; Risman 1999).

Much of this work assumes that in settings where social categorization is eliminated or considerably disrupted or reduced, stereotypes, bias, and inequality would be eliminated or greatly reduced as well. While this argument has a utopian tone, it provides the implicit foundation for arguments and theories ranging from functionalist racial/ethnic assimilation theories to post-modern feminist and queer theory arguments about the social construction of categories of sexuality and gender.

Advocates of assimilation theories essentially argue that racial and ethnic stereotypes, conflict, and inequality will diminish over time as formerly separate racial and ethnic groups merge and cultural and physical differences diminish. According to this “melting pot” theory of racial and ethnic relations, once categorization according to

separate racial and ethnic group identities is no longer relevant or possible, racial and ethnic strife and inequality will decrease (Parks and Burgess 1924; Gordon 1964; Hirschman 1983).

In a similar vein, a number of post-modern feminist and queer theory scholars have argued that the only successful route to a post-gendered world is through the disruption of sex categories and sex categorization (Bem 1995; Butler 1990; Connell 1995; Lorber 1994; Risman 1999). Scholars from these perspectives have promoted the disruption of sex categorization through such tactics as the expansion of sex categories well beyond the currently accepted dichotomy (Bem 1995), or through the performance of a variety of “subversive bodily acts” (Butler 1990). They further argue that such disruption is a necessary step towards decreasing or eliminating gender inequality. Like the functionalist assimilation theorists, these queer and post-modern feminist scholars implicitly emphasize the utility of examining variation in processes of social categorization in order to uncover mechanisms that might contribute to a reduction in the social biases and inequalities that categorization produces.

Consistent with this emphasis, this project addresses the fundamental question of whether some form of disruption in the normal process of sex categorization also disrupts the usually ensuing patterns of gender inequality. Accurate sex categorization is disrupted either when an actor is unable to sex categorize another or when an actor learns that he or she has made a gender mistake by “incorrectly” sex categorizing another. In this project, I examine the second process.



## **CHAPTER 3**

### **HYPOTHESES**

How might a gender mistake affect interaction? If interaction occurs before the mistake is corrected, as work by Troyer and Younts' (1997) and Skrypnek and Snyder (1982) indicates is likely, then the mistaken information is likely to continue to affect the interaction for several reasons. First, the initial patterns of inequality that form in interaction have a self-perpetuating property to them, which makes them particularly resistant to change (Ridgeway and Walker 1995). One of the mechanisms by which initial expectations become self-fulfilling is the use of double standards in evaluating actors' contributions to group tasks. When double standards are present, the contributions of actors with higher status are judged as more valuable and more relevant than are qualitatively similar contributions from lower status actors. Higher status actors not only are initially given more opportunities to contribute, but are also more likely to have their contributions judged as more valuable, even when their contributions are qualitatively the same as the contributions of lower status actors. Others infer a higher degree of ability from an act by a high status actor than they infer from the same act performed by a low status actor. This process leads to ever stronger advantage in terms of power and prestige for high status actors within the group (for recent review, see Foschi 2000).

A second factor contributing to the likelihood that gender mistakes have enduring effects is the way that multiple status information is processed. Research in expectation states theory indicates that when additional status information becomes available in an interaction, actors combine the new information with the existing information. This means that the new and the existing information jointly affect interaction, even when the

new information is inconsistent with the original information (Balkwell 1991; Berger et al. 1977). Although existing research has thus far only examined inconsistent information between different statuses, in this research I extend those ideas to argue that a similar process occurs when an actor has incorrect information about the same status. In other words, I argue that the original mistaken status information is combined with the new corrected information such that the actor's definition of the situation, expectations, and behaviors are jointly determined by the mistake and the correct information.

Finally, the powerful social construction of gender as "natural" is also likely to play an important role in gender mistake situations. A key component of the pervasive "natural attitude toward gender" is the belief that gender is invariant (Garfinkel 1967; Kessler and McKenna 1978). Belief in the invariance of gender means that most people believe that individuals cannot change their gender and have always been the gender that they appear to be. Once people make a sex categorization about another, they tend to interpret all subsequent behaviors and cues within the context of the original sex categorization. For example, once someone identifies another person as female, the discovery that this person has a penis is likely to be interpreted first as evidence that the person is a woman with a penis, rather than as evidence that the person is a man (Kessler and McKenna 1978, p. 161). This sense of the natural invariance of gender makes initial sex categories extremely difficult to discredit. For that reason, gender mistakes are likely to continue to influence interaction, even after they have been corrected.

In sum, given what we know about the power of initial expectations, the tendency to combine new status information with existing information, and the tendency to view gender as an unchanging feature of individuals, I hypothesize:

***Hypothesis 1: Gender mistakes affect ensuing patterns of gender inequality, even after they are corrected.***

When an actor makes a gender mistake, the mistake grants that actor either a higher or lower status in the situation than he or she would have had if the sex categorization had been correct. Since current cultural beliefs about gender grant higher status to males, any actor who learns that someone they regarded as female is really male will lose relative status as a result of the mistake being corrected. Males who learn that someone they regarded as female is actually male will go from having a status advantage to being status equals in the interaction. Females in the same situation will go from being equals to being at a status disadvantage. On the other hand, when an actor learns that someone they thought was male is really female, he or she will have a higher status after the mistake is corrected than he or she had before the correction.

According to the aggregated expectation states assumption of status characteristics theory, actors use all available status information in interaction, even when some of that information disadvantages them (Webster and Foschi 1988). When a status mistake occurs, however, actors may be likely to pay more attention to some information than to other information. Once the mistake is corrected, actors have contradictory information about the same status. Since individuals are motivated to avoid status loss (Cohen and Silver 1989; Lenski 1984), they are likely to pay more attention to advantaging information and less attention to disadvantaging information.

When a status mistake occurs, the motivation to avoid status loss will induce actors who have higher status before the mistake is corrected than they do after the correction (i.e. those who thought a male was a female) to continue to pay heed to and act

in accord with the mistaken information, even after the mistake is corrected. In other words, men who initially thought a male was a female will be motivated to maintain their status advantage, while women who initially thought a male was female will want to maintain their status equality. In a situation where an actor is disadvantaged by the mistake relative to the correction (i.e. he or she thought a female was a male), the correction leads to a status gain. In this case, actors are less motivated to act on the basis of the original mistaken information, once it is corrected.

In addition to status loss considerations, the differential normative evaluation of gender deviance may play a role here. In general, male gender non-conformity is viewed as more deviant than is female gender non-conformity (Thorne 1993). This is likely due to the fact that men and masculine attributes are more socially valued than are women and feminine attributes.

In the specific case of androgynous names, Lieberman and colleagues (2000) found that androgynous names are significantly more popular and accepted for girls than for boys. They posit that a *contamination* effect is at work, “such that the advantaged have a greater incentive to avoid having their status confused with the disadvantaged” (Lieberman et al. 2000). This asymmetrical maintenance of gender boundaries occurs in other social arenas as well, most notably in male withdrawal from occupations that women begin to enter (Reskin and Roos 1990). This general asymmetry in the meaning of gender non-conformity suggests that a male being mistaken for a female is likely to be seen as more deviant than a female being mistaken for a male. This is likely to contribute to a mistake in which a male is thought to be female being more memorable and therefore

more influential than a mistake in which a female is thought to be male. These arguments lead to my second hypothesis:

***Hypothesis 2: Gender mistakes in which males are thought to be females have greater lingering effects on patterns of inequality than mistakes in which females are thought to be males.***

Beyond their impacts on the immediate interaction, how else might gender mistakes impact individual cognitive processes and attitudes? Research in person perception indicates that individuals tend to categorize others on the basis of immediately apparent physical features, including the social categories of race and sex (Brewer and Liu 1989; Fiske 1998; Stangor et al 1992). The general consensus among social cognition scholars is that individuals attend to and categorize others according to those social and/or physical features that are most informative and accessible (Stangor et al 1992; Fiske 1998). Social categorization on the basis of race and sex, however, appears to be over-learned in the sense that sex and race are habitually used in virtually all interactions. In fact, Stangor and colleagues (1992) were unable to *increase* the extent of categorization on the basis of sex or race by manipulating either the accessibility or the usefulness of those categories. Little research exists on attempts to *decrease* the use of sex (or race) as a basis for social categorization.

A gender mistake renders the category of sex both less accessible and less useful. When an actor realizes she has made a gender mistake about another, she is confronted with the reality that gender cues are not always accurate representations of sex category. This makes sex a less accessible social category

than previously thought. In addition, if gender cues such as name, appearance, and behavior can no longer be counted on as accurate indicators of an actor's sex, then perhaps sex can no longer be counted on as an accurate indicator of underlying personality traits or behavioral dispositions. In other words, the degree to which an actor's sex provides useful information about that person is called into question when a gender mistake occurs. This leads to my third hypothesis:

***Hypothesis 3: Gender mistakes decrease the subsequent use of sex as a basis for social categorization.***

As noted earlier, the mere act of categorizing someone as a member of a particular social group makes stereotypes for that group particularly salient. Gender stereotypes are primed whenever an actor sex categorizes another. Stereotypes about gender contain beliefs about presumed differences between men and women, as well as beliefs about men's general superiority and greater competence. Gender stereotypes are implicitly sexist since stereotypes attribute and prescribe relatively rigid role expectations to men and women. In this way, sex categorization contributes to sexism. A comparable argument can be made regarding racial categorization and racism. In the same way that racism depends on the existence and use of racial categories, sexism depends on the ability to categorize people as men or women.

Gender mistakes disrupt the relatively automatic process of sex categorization. In doing so, gender mistakes have the potential to affect an individual's acceptance of gender stereotypes and sexist beliefs. When a man is

mistaken for a woman (or vice-versa), the notion that gender differences are natural and obvious is called into question. This leads me to my final hypothesis:

***Hypothesis 4: Gender mistakes decrease individual agreement with sexist attitudes; especially those based on gender stereotypes and presumed gender differences.***

## CHAPTER 4

### RESEARCH DESIGN

#### 4.1 Overview

To test these hypotheses, I use a modified version of the standard expectation states experimental setting, based on Troyer's (1997) adaptation of Foschi's (1990) computerized version of the Contrast Sensitivity Task (CST). In my experiment, subjects are told that they will be working, over a computer network only, with either a same or opposite sex partner on two rounds of a multi-trial decision-making task. At the end of round one, subjects in the mistake conditions are told that they were incorrectly informed about the sex of their task partner. In the remaining no mistake control conditions, no mistake is made about the task partner's sex. The extent to which subjects change their choices on the decision-making task trials to match their partner's choice in rounds 1 and 2 provides a measure of influence, allowing me to assess the impact of the mistake on inequality as measured by influence in interaction. Subjects also complete a computerized post study questionnaire, based on items from the Ambivalent Sexism Inventory (Glick and Fiske 1996; Glick et al. 2000). Results from this questionnaire are used to assess the impact of gender mistakes on sexist attitudes. Finally, subjects complete a name-matching paradigm exercise (Taylor et al. 1978; Taylor 1981). The name-matching paradigm exercise provides a measure of the degree to which sex is used as a basis of social categorization by measuring the extent to which subjects make within-sex and between-sex matching mistakes.



## 4.2 Main Experimental Procedures

In the standard expectation states experiment, two unacquainted subjects work on a collective task. In Phase I of the experiment, the subjects are given information about their own and the other subjects' value on some status. In this experiment, the key status information provided to subjects is the partner's gender. In Phase II, subjects are given a task to work on together. In the computerized version of the CST used in this experiment, subjects are shown two rectangles composed of black and white squares and must determine which of the two rectangles contains more white squares. In reality, the rectangles contain nearly equal numbers of white squares.

Subjects are male and female college freshman. They are told they will earn \$11 for participating in a decision-making task (CST) with a partner. They are also told that they will communicate with their partner only via a computer network. In reality, the partner's responses the subjects receive are pre-programmed computer responses.

In order to increase the relevance and salience of gender in the interaction, subjects are told that prior research indicates that males tend to perform better than females on tests of contrast sensitivity. Examining the impact of gender mistakes in the context of a gendered task provides a conservative test of my main arguments. When gender is relevant to the task, actors can be expected to pay more attention to their partner's correct gender, once it is revealed, thus decreasing the lingering impact of the mistake.

To allow the reported sex of the subject's partner to be corrected after round one in the mistake conditions, subjects complete 2 rounds of 25 trials of the team task. As in the standard expectation states experiment, the subject is told that on each trial both team

members will make an independent initial choice, then they will see each other's initial choice. Finally, subjects are asked to make a final choice to either stay with their initial choice or change it. The pre-programmed partner responses are designed so that the partner's initial choice differs from the subject's in 20 of the 25 trials in each round.

How subjects resolve disagreement, either by staying with their original response (called a "stay response"), or by changing to the other person's response (a "change response") is the typical dependent variable. Stay responses indicate rejection of influence and change responses indicate acceptance of influence. Assuming that subjects are motivated to do well (an assumption that is checked in post-experiment interviews), the observable acceptance or rejection of influence is an indicator of the unobserved internal expectation state of the subjects, and therefore measures the relative power and prestige of the individuals in the interaction. An impressive and diverse body of empirical research based on some form of this standard experimental setting has demonstrated the powerful influence of social categorizations on patterns of interactional inequality (for a review, see Webster and Foschi 1988; Wagner and Berger 1993).

The experiment used in this research involves a three-factor design: gender of subject x presence of gender mistake x direction of the mistake. The design includes four "mistake" conditions and four corresponding "no mistake" conditions:

1. Male subject, no gender mistake is made about a male partner.
2. Male subject, a male partner is mistaken for female.
3. Male subject, no gender mistake is made about a female partner.
4. Male subject, a female partner is mistaken for male.
5. Female subject, no gender mistake is made about a female partner.

6. Female subject, a female partner is mistaken for male.
7. Female subject, no gender mistake is made about a male partner.
8. Female subject, a male partner is mistaken for female.

Table 1 provides a summary of all conditions, including information on partner and subject's gender, or presumed gender, relative status, and the impact of the correction on the subject's status. The experimental script is shown in Appendix 1. The computerized instructions that participants received are reproduced in Appendix 2. All other forms used in the experiment are reproduced in Appendix 3.

In this study, I also collect information about each subject's perceptions of their own and their partner's task performance, as well as their attitudes towards men and women generally. This information is collected in the form of a computerized questionnaire presented to each subject after each round of the experiment. The questionnaire also contains questions designed to evaluate whether the scope conditions of the theory were met and whether the gender mistake manipulation was successful. Appendix 1 contains the exact wording of questions used. At the end of round two, subjects also answer questions about their attitudes towards men and women (see Appendix 4, A.4.2). These questions are drawn from the Ambivalent Sexism Inventory developed by Glick and Fiske (1996).



### **4.3 Name-matching Paradigm Procedures**

At the end of the Contrast Sensitivity experiment, I assess the degree to which subjects use sex as a basis of social categorization by having subjects complete the name-matching paradigm task (Fiske and Taylor 1978). In this paradigm, subjects are shown a series of photographs of individuals, identified by a name only. Subjects are told that the individuals in the photographs participated in a discussion about how to publicize a campus event. Distinct statements on the topic are attributed to each individual. Subjects therefore see a series of photographs, each accompanied by the name of the individual in the photograph and a statement made by that individual. The individuals in the photographs typically vary on one or more visible features. After viewing the photographs and hearing the statements attributed to each individual, subjects are asked on a surprise recall task to match each statement with the photograph of the individual who made the statement.

The dependent measure of interest is the number of matching errors that confuse individuals who share a given feature, compared to the number of errors that confuse individuals who do not share that feature. If subjects are categorizing the target individuals on the basis of a given feature, they will make more within-category errors than between-category errors. In the original studies, Taylor and colleagues (1978) found that subjects were more likely to confuse statements made by a woman with those made by another woman, and to confuse statements made by a man with those made by another man (within-sex errors) than to confuse men's statements with women's or women's statements with men's (between-sex errors). This suggests that the subjects were using sex as a basis for categorizing the target individuals.

I administer the name-matching paradigm task to all subjects after they have completed both rounds of the Contrast-Sensitivity task and the computerized questionnaires that follow. Photographs of four white females and four white males are used as targets. In addition to ensuring that targets are of the same race, selection of the photo targets was made in such a way as to ensure that all targets are recognizable in terms of gender and that all targets are of similar attractiveness. Three copies of each photograph are used, resulting in a set of 24 photographs. Each target person was assigned a first name. The photos are arranged in a random order, subject to the constraints that each subject appear once in the first eight photos, once in the second eight, and once in the last eight. In addition, care was taken to avoid excessive clustering of either male or female photos.

The statements attributed to the twenty-four photos replicate those used by Stangor and colleagues (1992). These statements all concern the best way to promote a college play. The statements are of similar length and quality. Examples of the statements are “We could see about getting a television commercial” and “Let’s slide leaflets under doors in the dorms.” The statements are randomly ordered and matched with the set of photographs, such that each individual is associated with 3 different statements.

The photographs and statements are incorporated into an automated slide show that each subject views on her computer screen. Each slide in the slide show consists of the photograph, the target individual’s name, and the statement attributed to them. All photographs are shown for the same amount of time. Prior to viewing the slide show, subjects are told that they will be viewing a brief slide show of students discussing how

to generate publicity for a college play. Subjects are told that after the slide show they will be asked questions about their impressions of the individuals in the slide show.

After viewing the slide show, subjects are given a sheet with the photograph and name of each target person (Appendix 3, A.3.5). Subjects are also given a list of the 24 statements and asked to fill in the blank next to each statement with the name of the target who made the statement (Appendix 3, A.3.4). Subjects are given as much time as they need to complete the task, and are told to make their best guess on statements they are not sure about, to ensure that they attribute every statement to an individual.

According to hypothesis 3, the ratio of the number of within-sex errors to the number of total errors will be lower for subjects who experienced a gender mistake than for subjects in the no mistake conditions. The ratio of within-sex errors to total errors indicates the degree to which sex is being used as a basis for categorizing the target individuals.

## CHAPTER 5

### MEASUREMENT

#### **5.1 Independent variables**

##### *5.1.1 Gender of subject*

Equal numbers of male and female subjects were used so that I can assess main effects of gender of subject, as well as interaction effects.

##### *5.1.2 Presence of gender mistake*

All subjects are told that they are participating in research on the effects of gender composition on group-decision making performance. Subjects are told that several individuals are participating in the study at the same time, and that they have been randomly assigned to a same-gender or mixed-gender group. This is part of the mistake manipulation, and also increases the salience of gender in the situation.

In natural interactions, gender mistakes can occur for a variety of reasons, as individuals use a variety of criteria on which to base sex categorizations (Kessler and McKenna 1978). The way in which a gender mistake affects individual behaviors and attitudes is likely to be affected by the way in which the mistake is made. While I plan to explore the effects of variation in types of mistakes in future research, in this initial exploration of the impact of gender mistakes it is necessary to hold the source of the mistake constant. I accomplish this by having the experimenter make the mistake, rather than the subject. Although this design creates a situation that differs from a situation where the subject herself makes the gender mistake, it ensures that the cause of the mistake is the same for all subjects. Moreover, this design provides a conservative test of



my main hypothesis, since subjects are likely to be less invested in someone else's mistaken first impression than they would be in their own mistake.

The mistake is introduced between rounds 1 and 2 of the task. In the mistake conditions, the experimenter tells the subject that he or she made a mistake in identifying the gender of the partner. The experimenter uses the androgynous name of the partner as the excuse for making a gender mistake. The name "Jordan" is used, as recent research identifies this name as both androgynous and currently popular (Lieberman et al 2000). Below is an example of the relevant portion of the experimental script used for the condition in which a male subject is originally told that a female partner is male:

"I just talked to the other Research Assistant and found out that your partner is actually a girl. When I saw the name Jordan, I just assumed it was a guy. I'm really sorry for the mix-up. It turns out you are actually in a mixed-sex group, so please go ahead and change that on the information sheet. Sorry about that."

For the condition in which male subjects are initially told that their male partner is female, the experimenter says:

"I just talked to the other Research Assistant and found out that your partner is actually a guy. When I saw the name Jordan, I just assumed it was a girl. I'm really sorry for the mix-up. It turns out you are actually in a same-sex group, so please go ahead and change that on the information sheet. Sorry about that."

### *5.1.3 Direction of the gender mistake*

In order to assess the impact of the direction of the mistake on the degree to which the mistake affects ensuing patterns of inequality, the design includes conditions in which males are mistaken for females and conditions in which females are originally thought to be males. Whenever an individual thinks a male task partner is female, he or she will experience a loss in relative status once the

mistake is corrected. When an individual thinks a female is a male, he or she will gain in relative status when the mistake is corrected. Since actors are motivated to avoid status loss, I hypothesize that the lingering effects of mistaking a male for a female are greater than are the lingering effects of mistaking a female for a male.

## **5.2 Dependent variables**

I hypothesize that gender mistakes affect an actor's interaction with and attitudes toward the person who was incorrectly sex categorized. I also hypothesize that gender mistakes affect an actor's attitudes toward men and women more generally, as well as an actor's subsequent use of sex as a basis for categorizing others. The dependent variables I measure reflect this dual emphasis on interaction-specific outcomes and more generalized outcomes.

### *5.2.1 Interaction-specific Outcomes*

The first interaction-specific dependent variable is influence, measured by whether or not the subject changes her initial choice to agree with her partner's choice on the 20 trials in which there is disagreement. The proportion of stay responses, or P(s), measures this. In addition to the behavioral measure of influence, subjects provide self-reported measures of influence as part of a questionnaire administered to each subject after the second round of the Contrast Sensitivity problems (see Appendix 4 for exact wording of these items). Subjects are asked the following question: "How often did you change your initial answer to go along with your partner?" Participants mark their responses by using the mouse of the computer to move a slider along a scale. The slider position is

recorded on a scale ranging from zero to 100, with zero indicating the far left side of the scale (labeled “I never changed my mind to go along with my partner”), and 100 indicating the far right side (“I always changed my mind to go along with my partner”).

The second set of interaction specific outcomes measure the subject’s attitudes about herself and her partner. Expectation states are always relative to others, indicating that understandings of both one’s own and one’s partner’s performance are likely to be affected by a change in relative status rankings. Status mistakes are therefore likely to affect perceptions of one’s own performance, as well as perceptions of one’s partner’s performance. Subjects are asked to rate how accurate they think their own and their partners’ initial choices were, as well as how much Contrast Sensitivity ability they believe they have and how much Contrast Sensitivity ability they believe their partner has. Subjects use the same 100-point slider scale, with appropriate anchor labels, to indicate these perceptions.

### *5.2.2 Generalized Outcomes*

The first generalized outcome of interest is the use of sex as a categorization feature. Consistent with much of the research in social categorization (see, for example, Stangor et al 1992; Spears et al 1999; Van Twuyver and Van Knippenberg 1998), I use the name-matching paradigm first developed by Taylor and her colleagues (Taylor 1981; Taylor et al 1978). As described earlier, in the name-matching paradigm, subjects are asked to match photographs of target individuals with statements made by those individuals. In this experiment, the ratio of within-sex errors to total errors made by subjects represents the degree to which sex is being attended to and used as a basis of

categorization (Taylor et al 1978; Stangor et al 1992; Spears et al 1999). According to hypothesis three, the ratio of within-sex errors to total errors will be higher for subjects in the no mistake conditions than for subjects who did experience a gender mistake.

The second generalized outcome of interest concerns attitudes towards men and women, particularly attitudes that are sexist and/or that are indicative of a belief in gender differences. To measure adherence to sexist beliefs, especially those associated with a belief in presumed gender differences, I use the Ambivalent Sexism Inventory (ASI) developed by Glick and Fiske (Glick and Fiske 1996; Glick et al 2000).

While there are many other currently available measures of sexism, the ASI is best suited to the purposes of this research for several reasons. Other measures of sexism tend to measure sexism in terms of either sex-role traditionalism versus egalitarianism (Spence and Helmreich 1972; Spence et al 1973; Beere et al 1984), or in terms of attitudes towards current gender-related political issues (Swim et al 1995). Due to the widespread acceptance of egalitarianism in America in recent years, particularly among young people (Correll and Bourg 1999), sex-role traditionalism scales are inadequate for measuring current subtle sexism. Scales like the Modern Sexism Scale (Swim et al 1995), designed to pick up subtle sexism by focusing on gender related political topics, likewise do not address the kind of gender stereotyping and implicit differentiation between the sexes that I believe will be affected by gender mistakes.

The ASI taps two correlated aspects of sexism: Hostile Sexism and Benevolent Sexism. The Hostile Sexism component corresponds to Allport's (1954) classic definition of prejudice and taps negative attitudes toward and stereotypes of women. The Benevolent Sexism component of the ASI includes a "set of interrelated attitudes toward

women that are sexist in terms of viewing women stereotypically and in restricted roles but that are subjectively positive in feeling tone (for the perceiver) and also tend to elicit behaviors typically categorized as prosocial (e.g., helping) or intimacy-seeking (e.g., self-disclosure)” (Glick and Fiske 1996, p. 491). The Benevolent Sexism component of the ASI consists of three sub-factors: Complementary Gender Differentiation, Heterosexual Intimacy, and Protective Paternalism. It is the inclusion of both subjectively positive and negative stereotypes of men and women, as well as items specifically measuring belief in gender differentiation, which makes the ASI ideal for this research. The ASI taps a wide range of stereotypes and beliefs that are typically cued by sex categorization and are therefore potentially affected by gender mistakes.

As noted earlier, the exact items included in the ASI are reported in Appendix 4, A.4.2. The ASI is administered as part of the computerized questionnaire that subjects complete at the end of the second round of Contrast Sensitivity tasks. As with the other items included in the computerized questionnaire, subjects indicate their level of agreement with each statement by using their mouse to move the slider between the left anchor (Strongly Disagree) and the right anchor (Strongly Agree). Responses are scored on a 100 point scale, with all items coded such that higher scores indicating greater agreement with sexist beliefs.

### **5.3 Manipulation Checks**

#### *5.3.1 Scope conditions and other checks*

The scope conditions of Status Characteristics Theory state that status beliefs affect people’s behavior and evaluations of one another in situations where people are working together on a collective goal or task (Berger et al., 1977; Webster & Foschi, 1988). To

assess participants' task orientation, they are asked, "How important to you was it that your group obtained correct answers?" Collective orientation is assessed by the following question: "How much attention did you pay to your partner's initial choices?" Responses are made on a 100 point scale, with higher values indicating higher task and collective orientation respectively. Each question is asked twice, once after the first round of the Contrast Sensitivity task, and once after round two. Three participants were excluded from the analysis because of extremely low task orientation (responses of 20 or less on the 100 point scale). Two additional subjects were excluded because of responses of 20 or less on the 100 point scale measuring collective orientation.

As required by the theory, the remaining participants generally considered it important that their group did well on the task (Round one mean = 73.52, s.d. = 18.60; Round two mean = 71.04, s.d. = 18.28). In addition, participants generally paid attention to their partners (Round one mean = 69.31, s.d. = 16.55; Round two mean = 63.22, s.d. = 16.95). These indicate that participants were both task oriented and collectively oriented.

To assess whether participants were fatigued or frustrated by the length of the experiment (standard Expectation States experiments last only 1 round, rather than 2), participants were asked "How frustrated were you during the study?" As with other items, this was scored on a 100 point scale with higher values indicating greater frustration. Although participants were slightly frustrated by the experiment on average (mean = 58.49, s.d. = 22.62), there was no significant difference in frustration levels between subjects in the mistake conditions and

those in the no mistake conditions ( $t = 1.02, p = .31$ ). No participants were excluded from the analysis because of frustration with the experiment.

Finally, in order to assess how the “gender mistake” made by the experimenter affected participants’ views of the experimenter, all participants were asked, “How competent do you think the experimenter was?” This item was also scored on a 100 point scale, with higher values indicating greater perceived competence of the experimenter. In general, participants viewed the experimenters as competent (mean = 72.84, s.d. = 17.75). Participants in the mistake conditions rated the experimenter competence at 69.72, while those in the no mistake conditions rated the experimenter competence at 75.93. Although there is a significant difference ( $t = 2.28, p < .05$ ) between participants in the mistake conditions and those in the no mistake conditions, it is clear that all participants rated the experimenters as generally competent, and therefore no participants were excluded for this reason.

### *5.3.2 Mistake manipulation*

To confirm that the gender mistake manipulation was successful, all participants were asked to discuss how the mistake affected them. The experimenter also confirmed with each participant that she knew the correct gender of her partner at the end of the experiment. By providing an answer to the question of how the gender mistake affected them, even if they said it did not affect them at all, participants were indicating that they believed that a gender mistake had been made. All participants provided some answer that showed that the gender mistake manipulation was effective. In addition, all participants were able to identify the “correct” gender of their partner at the end of the experiment.

### *5.3.3 Other Issues*

An additional eleven participants had to be excluded from the analysis for various reasons. One participant was excluded because a computer malfunction precluded them from finishing the experiment. Two other participants were excluded because an error by the experimenter compromised the experiment. Finally, seven participants were excluded because they reported excessive suspicion about one or more aspects of the experiment.



## CHAPTER 6

### ANALYTICAL STRATEGY

#### 6.1 Interaction-specific outcomes

The first hypothesis regarding the lingering effects of gender mistakes on interaction requires comparing subjects who experience gender mistakes with those who do not. Since I am interested in the effects of mistaken status information *after the mistake has been corrected*, the proportion of stay responses from the second round of the team task is the main interaction-specific dependent variable of interest.

In round two of the team task, the gender information subjects have about their partner is the same in corresponding mistake and no mistake conditions. For example, subjects who originally thought their male partner was female know that they are working with a male in round two. This gives them the same gender information as the subjects who always knew they were working with a male partner. If gender mistakes do not influence behavior once corrected (the null hypothesis), there will be no difference in the proportion of stay responses in round two for subjects in the mistake conditions and subjects in the corresponding no mistake conditions. If mistakes do matter, however, there will be a significant difference in the average proportion of stay responses in round two between subjects in the mistake conditions and those in the corresponding no mistake conditions. I use an independent samples t-test to test this hypothesis. These analyses are performed separately for males and females.

To test for the effects of the direction of the mistake, a repeated measures analysis of variance to compare the amount of change in influence behavior between rounds for subjects in the two mistake conditions is appropriate. According to the second hypothesis, I predict that mistakes in which males are thought to be females will have

greater lingering effects than mistakes in which females thought to be males. I therefore expect to find that the between round difference in P(s) scores for subjects who originally thought a male partner was female will be less than the between round change in P(s) scores for subjects who originally thought a female partner was male.

I use the same analytical strategies to test for the effects of gender mistakes and the direction of the gender mistake on subjects' perceptions of their own and their partner's performance at Contrast Sensitivity tasks. I expect that subjects who originally thought a male partner was female will rate their own accuracy and ability higher, and will rate their partner's accuracy and ability lower, even after the mistake is corrected, than the subjects who believed they were working with a male all along. Subjects who originally thought a female partner was male are likely to rate their own accuracy and ability lower, and will rate their partner's accuracy and ability higher, even after the mistake is corrected, than the subjects who believed they were working with a female all along. I further expect that the lingering effects of mistakes in which males are thought to be females on perceptions of accuracy and ability will be greater than will be the lingering effects of mistakes in which females thought to be males.

## **6.2 Generalized outcomes**

The results of the name-matching paradigm exercise are used to test the hypothesis that gender mistakes decrease the use of sex as a basis for social categorization. In the name-matching paradigm, the key variable indicating degree of categorization is the ratio of within-category errors to total errors made when matching individuals to statements. In hypothesis three, I argue that experiencing a gender mistake will result in decreased use of sex as a social

category. To test this hypothesis, I use an independent samples t-test to assess the effects of the presence of a mistake on the ratio of within-sex errors to total errors. I perform this analysis separately for male and female participants. I expect that the ratio of within-sex errors to total errors will be significantly higher for subjects in the no mistake conditions than for subjects in the gender mistake conditions. Since I have no hypothesis regarding the effects of kind of gender mistake on sex categorization, my comparison is between participants who experienced a gender mistake and those who did not.

To test hypothesis four, I create a composite ASI score composed of all of the Ambivalent Sexism items shown in Appendix 1. To test for the effects of the presence of a gender mistake on sexism, I will use an independent samples t-test to compare mean ASI scores of participants who experienced a gender mistake and those who did not. Separate analyses will be done for male and female participants. I will also perform t-tests for differences in the components of the ASI: Hostile Sexism, Heterosexual Intimacy, Protective Paternalism, and Complementary Gender Differentiation.

## CHAPTER 7

### RESULTS

#### 7.1 Interaction-specific Outcomes

##### 7.1.1 Males: *Lingering effects of gender mistakes*

In Hypothesis 1, I predicted that gender mistakes would have lingering effects on ensuing patterns of inequality, even after they were corrected. In testing this hypothesis, the main dependent variable of interest is the proportion of stay responses, or P(s).

##### 7.1.1.1 Preliminary Analyses

Table 2 shows the P(s) scores for all male participants by round. In round one of the CST, standard expectation states predictions regarding P(s) values should apply. In my experiment, gender is operating as both a diffuse status characteristic and as a specific one, because participants are told that males tend to be better at contrast sensitivity than females. Based on this, I expected that males partnered with females would have a higher P(s) value than males with male partners. The results in Table 2 support that expectation. Participants with male partners in round one (Conditions 1 and 4) stayed with their own response 54% and 56% of the time respectively, while those with female partners in round one (Conditions 2 and 3) stayed with their own response 63% and 65% of the time. The difference in the mean P(s) values between males with male partners and males with female partners is statistically significant ( $t = -3.01, p < .01$ ).

**Table 2. Proportion of Stay Responses (P(s)) by Condition and Round, Male Subjects, N = 83 (Partner's presumed gender in parentheses)**

<b>Condition</b>	<b>Round one</b>	<b>Round two</b>
1. No Mistake	mean = .54 s.d. = .14 (Male Partner)	mean = .64 s.d. = .10 (Male Partner)
2. Advantaging Mistake	mean = .63 s.d. = .17 (Female Partner)	mean = .65 s.d. = .15 (Male Partner)
3. No Mistake	mean = .65 s.d. = .09 (Female Partner)	mean = .64 s.d. = .08 (Female Partner)
4. Disadvantaging Mistake	mean = .56 s.d. = .13 (Male Partner)	mean = .63 s.d = .15 (Female Partner)

Results based on the self-reported measure of influence behavior follow the same pattern (see Table 3). Males with female partners in round one (Conditions 2 and 3) report that they changed their answer less (43.14 and 44.33) than males with male partners (Conditions 1 and 2, 51.55 and 53.00 respectively). The difference is statistically significant ( $t = 2.39, p < .01$ ).

Males with female partners rate their own accuracy higher than do males with male partners in round one (see Table 4). Those with female partners rate their own accuracy at 55.29 and 58.10, while those with male partners rate their accuracy at 49.85 and 51.52. The difference is statistically significant ( $t = -2.59, p < .01$ ).

**Table 3. Self-reported Influence by Condition and Round, Male Subjects, N = 83  
(Partner's presumed gender in parentheses)**

<b>Condition</b>	<b>Round one</b>	<b>Round two</b>
1. No Mistake	mean = 51.55 s.d. = 15.90 (Male Partner)	mean = 43.05 s.d. = 16.76 (Male Partner)
2. Advantaging Mistake	mean = 43.14 s.d. = 15.17 (Female Partner)	mean = 45.95 s.d. = 17.31 (Male Partner)
3. No Mistake	mean = 44.33 s.d. = 16.28 (Female Partner)	mean = 46.05 s.d. = 15.65 (Female Partner)
4. Disadvantaging Mistake	mean = 53.00 s.d. = 18.50 (Male Partner)	mean = 44.57 s.d. = 15.86 (Female Partner)

**Table 4. Rating of Own Accuracy by Condition and Round, Male Subjects, N = 83  
(Partner's presumed gender in parentheses)**

<b>Condition</b>	<b>Round one</b>	<b>Round two</b>
1. No Mistake	mean = 49.85 s.d. = 11.18 (Male Partner)	mean = 52.30 s.d. = 10.55 (Male Partner)
2. Advantaging Mistake	mean = 58.10 s.d. = 12.22 (Female Partner)	mean = 55.33 s.d. = 13.06 (Male Partner)
3. No Mistake	mean = 55.29 s.d. = 9.42 (Female Partner)	mean = 51.67 s.d. = 10.09 (Female Partner)
4. Disadvantaging Mistake	mean = 51.52 s.d. = 9.37 (Male Partner)	mean = 50.29 s.d = 11.21 (Female Partner)

As Table 5 shows, males with female partners also rate their overall Contrast Sensitivity ability higher than do males with male partners in round one.

Again, this difference is statistically significant ( $t = -2.41, p < .01$ ).

**Table 5. Rating of Own Contrast Sensitivity Ability by Condition and Round, Male Subjects, N = 83 (Partner's presumed gender in parentheses)**

<b>Condition</b>	<b>Round one</b>	<b>Round two</b>
1. No Mistake	mean = 39.20 s.d. = 13.46 (Male Partner)	mean = 46.60 s.d. = 14.81 (Male Partner)
2. Advantaging Mistake	mean = 48.05 s.d. = 19.55 (Female Partner)	mean = 49.24 s.d. = 17.50 (Male Partner)
3. No Mistake	mean = 46.14 s.d. = 13.92 (Female Partner)	mean = 51.00 s.d. = 9.93 (Female Partner)
4. Disadvantaging Mistake	mean = 38.29 s.d. = 16.19 (Male Partner)	mean = 41.81 s.d. = 14.55 (Female Partner)

In addition, males with female partners rate their partner's accuracy and overall Contrast Sensitivity ability lower than do males with male partners in round one. Table 6 shows that males with female partners rate their partner's accuracy at approximately 41, while those with male partners rate their partner's accuracy at 45.00 and 48.75. The difference is statistically significant ( $t = 1.88, p < .05$ ).

Table 7 shows that males with female partners rate their partner's overall Contrast Sensitivity ability lower than do males with male partners. Males with female partners rate their partner's Contrast Sensitivity ability at 46.86 and 44.38,

while those with male partners rate their partner's Contrast Sensitivity ability at 47.10 and 52.90. The difference is statistically significant ( $t = 1.75, p < .05$ ).

**Table 6. Rating of Partner's Accuracy by Condition and Round, Male Subjects, N = 83 (Partner's presumed gender in parentheses)**

<b>Condition</b>	<b>Round one</b>	<b>Round two</b>
1. No Mistake	mean = 48.75 s.d. = 11.24 (Male Partner)	mean = 45.25 s.d. = 7.97 (Male Partner)
2. Advantaging Mistake	mean = 41.86 s.d. = 15.48 (Female Partner)	mean = 42.67 s.d. = 15.84 (Male Partner)
3. No Mistake	mean = 41.33 s.d. = 11.00 (Female Partner)	mean = 46.57 s.d. = 11.68 (Female Partner)
4. Disadvantaging Mistake	mean = 45.00 s.d. = 12.91 (Male Partner)	mean = 45.67 s.d. = 11.43 (Female Partner)

**Table 7. Rating of Partner's Contrast Sensitivity Ability by Condition and Round, Male Subjects, N = 83 (Partner's presumed gender in parentheses)**

<b>Condition</b>	<b>Round one</b>	<b>Round two</b>
1. No Mistake	mean = 47.10 s.d. = 7.89 (Male Partner)	mean = 44.65 s.d. = 9.07 (Male Partner)
2. Advantaging Mistake	mean = 46.86 s.d. = 14.15 (Female Partner)	mean = 46.57 s.d. = 16.44 (Male Partner)
3. No Mistake	mean = 44.38 s.d. = 9.87 (Female Partner)	mean = 46.52 s.d. = 12.47 (Female Partner)
4. Disadvantaging Mistake	mean = 52.90 s.d. = 12.97 (Male Partner)	mean = 44.29 s.d. = 14.02 (Female Partner)



### *7.1.1.2 Tests of Hypotheses*

In testing Hypothesis 1, that gender mistakes have lingering effects on inequality, the key comparison is between the outcomes in round two for subjects in the mistake conditions and outcomes in round two for subjects in the corresponding no mistake conditions. In terms of the behavioral measure of inequality used here, if mistakes have lingering effects, then the proportion of stay responses for subjects in the mistake conditions will be different than the proportion of stay responses for subjects in the corresponding no mistake conditions, even after the mistake has been corrected.

Looking first at Advantaging mistakes (i.e. mistakes in which males originally think a male partner is female), Hypothesis 1 predicts that subjects in the Advantaging mistake condition (Condition 2) will continue to stay with their own response more than subjects in the corresponding no mistake condition (Condition 1), even though subjects in these two conditions now all know that their partner is actually male.

The results shown in Table 2 indicate no support for this prediction. Males who originally thought a male partner was female, stay with their own response, after the mistake is corrected, at the same rate as male subjects who knew their partner was male all along. Those who knew their partner was male all along (Condition 1) stay with their own response 64% of the time, while those who originally thought their male partner was female stay with their own response 65% of the time. The difference is not statistically significant ( $t = -.36, p = .72$ ).

Interestingly, despite the fact that nothing changes for them between rounds, subjects who worked with a male partner in both rounds (Condition 1) stayed with their own response significantly more often in round two than in round one (paired samples t-test,  $t = -3.64$ ,  $p < .01$ ). Subjects who initially thought their partner was female and then learned that their partner was male, however, showed no significant change in their deferral behavior as a result of learning their partners' correct gender (paired samples t-test,  $t = -.80$ ,  $p = .43$ ). It appears that males working with males become more resolute in round two, while males who originally thought they were working with a female did not change their behavior to adjust to the new information that their partner was really a male. The result of these two patterns is that males treat other males who they originally thought to be female the same as they do males whose correct gender they knew all along, at least in terms of deferral behavior.

The self reported measures of behavior and ratings of one's own and one's partner's accuracy and ability show the same pattern of no difference between those males who originally thought their partner was female and those who knew they were working with a male all along. As Table 3 shows, males who knew their partner was male all along rate their own change behavior at 43.05 in round two, while those who originally thought their partner was female rate their change behavior at 45.95 after round two. The difference is not statistically significant ( $t = -.55$ ,  $p = .59$ ).

Table 4 shows that males who knew their partner was male in both rounds rate their own accuracy at 52.30, while those who originally thought their partner

was female rate their accuracy at 55.33. Again, the difference is not statistically significant ( $t = -.82, p = .42$ ). There is also no statistically significant difference in ratings of their own Contrast Sensitivity ability between these groups (see Table 5,  $t = -.52, p = .61$ ).

Males who knew their partner was male in both rounds rate their partner's accuracy at 45.25, while those who originally thought their partner was female rate their partner's accuracy at 42.67 (see Table 6). This difference is not statistically significant ( $t = .65, p = .52$ ). There is also no statistically significant difference in ratings of their partner's Contrast Sensitivity ability between these groups (see Table 7,  $t = -.46, p = .65$ ).

Turning to Disadvantaging mistakes, Hypothesis 1 predicts that the lingering effects of a gender mistake will result in male subjects who originally thought their female partner is male deferring more often than males who knew their female partner's gender all along, even after the mistake is corrected. In other words, the round two P(s) for subjects in Condition 3 (Male subject, female partner, no mistake) will be higher than the round two P(s) for subjects in Condition 4 (male subject, female partner who is originally mistaken for male).

As with the advantaging mistake, the results shown in Table 2 do not support this hypothesis. In round two, males who worked with a female partner all along (Condition 3) stayed with their own response 64% of the time, while those males who originally thought their female partner was male stayed with their own response 63% of the time. This difference is not statistically significant ( $t = .13, p = .90$ ).

There is also no difference in round two self-reported deferral behavior between Conditions 3 and 4. Males who knew their partner was female all along rate their own change at 46.05, while those who originally thought their female partner was male rate their change behavior at 44.57 (see Table 3). The difference is not statistically significant ( $t = .30, p = .76$ ). In addition, there is no statistically significant difference after round two between participants in Conditions 3 and those in Condition 4 in ratings of their own accuracy (see Table 4,  $t = .24, p = .68$ ).

As Table 5 shows, participants who originally thought their female partner was male do rate their own Contrast Sensitivity ability lower than participants who knew their partner was female all along (41.81 compared to 51.00), even after the gender mistake was corrected. This difference is statistically significant ( $t = 2.39, p < .05$ ).

There is no statistically significant difference after round two between participants in Conditions 3 and those in Condition 4 in ratings of their partner's accuracy (see Table 6,  $t = .25, p = .80$ ). As Table 7 shows, there is also no statistically significant difference in round two ratings of partner's overall Contrast Sensitivity ability between Conditions 3 and 4 ( $t = .55, p = .59$ ).

The finding that males treat female partners who they originally thought were male the same as they do partners who they knew to be female all along indicates that there is no lingering impact of mistaking a female for a male on interactional inequality. There does appear to be a small lingering impact on self-assessment of Contrast Sensitivity ability, such that those males who originally

thought their partner was also male rate their own Contrast Sensitivity ability lower than do those males who knew they were working with a female all along, even after the mistake is corrected.

In contrast to the patterns observed for male subjects with male partners, participants with female partners did not change their behavior between rounds in the no mistake condition, but did change in the corresponding mistake condition. While male subjects who knew their partner was female all along (Condition 3) stayed with their own response at the same rate over both rounds (paired samples t-test,  $t = .30$ ,  $p = .77$ ), males who originally thought their female partner was male stayed with their own response significantly more often in round two than in round one (paired samples t-test,  $t = -4.13$ ,  $p < .01$ ). In other words, they adjusted their behavior based on the new correct gender information, and acted as if the mistake had not happened.

#### *7.1.2 Males: Asymmetrical effects of gender mistakes*

In Hypothesis 2, I predicted that gender mistakes in which males are thought to be females would have greater lingering effects than will mistakes in which females are thought to be males. Results from the male participants in my experiment fail to provide support for this hypothesis. Neither kind of mistake appears to have any significant lingering effects on the interaction-specific behavior of males. With the exception of the negative effect of a disadvantaging mistake on ratings of one's own Contrast Sensitivity ability, it also appears that neither kind of mistake has any lingering effects on attitudes about one's own accuracy or one's partner's Contrast Sensitivity ability or accuracy.

### 7.1.3 Females: Lingering effects of gender mistakes

#### 7.1.3.1 Preliminary Analyses

Table 8 shows the P(s) scores for all female participants, by round. Again, in round one of the CST, standard expectation states predictions regarding P(s) values should apply. I expect that females working with other females will stay with their own response more often (i.e. have higher P(s) values) than will females working with males. The results shown in Table 8 support this expectation, showing that females with female partners (Conditions 5 and 8) stay with their own response 57% of the time, while those with male partners (Conditions 6 and 7) stay with their own response approximately 50% of the time. This difference is statistically significant ( $t = -3.01, p < .01$ ).

**Table 8. Proportion of Stay Responses, (P(s)), by Condition and Round, Female Subjects, N = 82 (Partner's presumed gender in parentheses)**

<b>Condition</b>	<b>Round one</b>	<b>Round two</b>
5. No Mistake	mean = .57 s.d. = .09 (Female Partner)	mean = .56 s.d. = .12 (Female Partner)
6. Disadvantaging Mistake	mean = .48 s.d. = .11 (Male Partner)	mean = .58 s.d. = .15 (Female Partner)
7. No Mistake	mean = .51 s.d. = .17 (Male Partner)	mean = .50 s.d. = .18 (Male Partner)
8. Advantaging Mistake	mean = .57 s.d. = .14 (Female Partner)	mean = .54 s.d. = .17 (Male Partner)

The self-reported measure of influence reveals the same pattern (see Table 9). Females with male partners (Conditions 6 and 7) report that they change their

answer more often (56.70 and 57.90) than do those with female partners (Conditions 5 and 8, 51.62 and 49.95 respectively). The difference between the groups is statistically significant ( $t = 1.85$ ,  $p < .05$ ).

**Table 9. Self-reported Influence by Condition and Round, Female Subjects, N = 82 (Partner's presumed gender in parentheses)**

<b>Condition</b>	<b>Round one</b>	<b>Round two</b>
5. No Mistake	mean = 51.62 s.d. = 14.24 (Female Partner)	mean = 52.52 s.d. = 15.15 (Female Partner)
6. Disadvantaging Mistake	mean = 56.70 s.d. = 13.97 (Male Partner)	mean = 47.15 s.d. = 12.26 (Female Partner)
7. No Mistake	mean = 57.90 s.d. = 17.24 (Male Partner)	mean = 62.14 s.d. = 16.30 (Male Partner)
8. Advantaging Mistake	mean = 49.95 s.d. = 18.54 (Female Partner)	mean = 56.05 s.d. = 16.60 (Male Partner)

As Table 10 shows, females with male partners (Conditions 6 and 7) rate their own accuracy at approximately 46, while females with female partners (Conditions 5 and 8) rate their accuracy at over 48. The difference between the groups is statistically significant ( $t = -1.40$ ,  $p < .10$ ).

As Table 11 shows, females with male partners in round one (Conditions 6 and 7) rate their own Contrast Sensitivity ability at 36.00 and 34.29 respectively. Females with female partners in round one (Conditions 5 and 8) rate their own Contrast Sensitivity ability at 35.09 and 36.40. The difference between the groups is not statistically significant ( $t = -.18$ ,  $p = .86$ ). It appears that the sex of one's partner does not affect female participant's ratings of their own Contrast Sensitivity ability.

**Table 10. Rating of Own Accuracy by Condition and Round, Female Subjects, N = 82 (Partner's presumed gender in parentheses)**

<b>Condition</b>	<b>Round one</b>	<b>Round two</b>
5. No Mistake	mean = 49.48 s.d. = 9.00 (Female Partner)	mean = 50.29 s.d. = 11.44 (Female Partner)
6. Disadvantaging Mistake	mean = 46.05 s.d. = 7.85 (Male Partner)	mean = 48.30 s.d. = 12.79 (Female Partner)
7. No Mistake	mean = 46.29 s.d. = 12.48 (Male Partner)	mean = 44.29 s.d. = 9.57 (Male Partner)
8. Advantaging Mistake	mean = 48.60 s.d. = 7.26 (Female Partner)	mean = 47.45 s.d. = 12.02 (Male Partner)

**Table 11. Rating of Own Contrast Sensitivity Ability by Condition and Round, Female Subjects, N = 82 (Partner's presumed gender in parentheses)**

<b>Condition</b>	<b>Round one</b>	<b>Round two</b>
5. No Mistake	mean = 35.09 s.d. = 14.81 (Female Partner)	mean = 39.00 s.d. = 14.35 (Female Partner)
6. Disadvantaging Mistake	mean = 36.00 s.d. = 16.06 (Male Partner)	mean = 37.55 s.d. = 14.45 (Female Partner)
7. No Mistake	mean = 34.29 s.d. = 15.15 (Male Partner)	mean = 34.86 s.d. = 15.21 (Male Partner)
8. Advantaging Mistake	mean = 36.40 s.d. = 15.23 (Female Partner)	mean = 36.70 s.d. = 15.40 (Male Partner)

Table 12 shows that females with male partners in round one (Conditions 6 and 7) rate their partner's accuracy at approximately 54 while females with female partners in



round one (Conditions 5 and 8) rate their partner's accuracy at approximately 50. The difference is statistically significant ( $t = 1.92, p < .05$ ).

Table 13 shows ratings of partner's overall Contrast Sensitivity for female participants. Females with male partners in round one rate their partner's ability higher (53.45 and 57.57) than do those with female partners in round one (49.33 and 53.65). The difference between the groups is statistically significant ( $t = 2.02, p < .05$ ).

**Table 12. Rating of Partner's Accuracy by Condition and Round, Female Subjects, N = 82 (Partner's presumed gender in parentheses)**

<b>Condition</b>	<b>Round one</b>	<b>Round two</b>
5. No Mistake	mean = 49.71 s.d. = 7.19 (Female Partner)	mean = 51.19 s.d. = 12.76 (Female Partner)
6. Disadvantaging Mistake	mean = 54.00 s.d. = 7.73 (Male Partner)	mean = 51.10 s.d. = 8.86 (Female Partner)
7. No Mistake	mean = 54.43 s.d. = 12.60 (Male Partner)	mean = 55.43 s.d. = 10.69 (Male Partner)
8. Advantaging Mistake	mean = 50.85 s.d. = 9.11 (Female Partner)	mean = 53.80 s.d. = 9.60 (Male Partner)

**Table 13. Rating of Partner’s Contrast Sensitivity Ability by Condition and Round, Female Subjects, N = 82 (Partner’s presumed gender in parentheses)**

<b>Condition</b>	<b>Round one</b>	<b>Round two</b>
5. No Mistake	mean = 49.33 s.d. = 7.89 (Female Partner)	mean = 46.81 s.d. = 10.77 (Female Partner)
6. Disadvantaging Mistake	mean = 53.45 s.d. = 11.70 (Male Partner)	mean = 45.55 s.d. = 10.63 (Female Partner)
7. No Mistake	mean = 57.57 s.d. = 8.05 (Male Partner)	mean = 59.00 s.d. = 11.01 (Male Partner)
8. Advantaging Mistake	mean = 53.65 s.d. = 8.25 (Female Partner)	mean = 55.15 s.d. = 9.03 (Male Partner)

### 7.1.3.2 Tests of Hypotheses

If gender mistakes have lingering effects on interaction after they are corrected, then females who originally thought their male partners were female will stay with their own response more than will females who knew their partner was male all along, even after the gender mistake is corrected. Although the females who originally thought their male partners were female (Condition 8) stayed with their own response 54% of the time in round two, while those who knew their partner was male all along (Condition 7) stayed only 50% of the time (see Table 8), the difference is not statistically significant ( $t = -.69, p = .49$ ). As with the male results, these female results provide no support for the hypothesis that mistakes in which males are thought to be females have lingering impact on interaction and inequality.

Likewise, there is no support from the female results for the hypothesis that gender mistakes in which females are mistaken for males have lingering effects. Females who originally thought a female partner was male (Condition 6) stayed with their own response 58% of the time after the mistake was corrected, while those who knew their partner was female all along (Condition 5) stayed 56% of the time (see Table 8). Again, the difference is not statistically significant ( $t = -.36, p = .73$ ).

For female participants, those who experienced a disadvantaging gender mistake adjusted their deferral behavior based on the corrected gender information, while females in the no mistake conditions maintained the same proportion of stay responses across rounds. Females who worked with another female all along (Condition 5), stayed with their own response 57% of the time in round one, and 56% of the time in round two. The difference is not statistically significant (paired samples t-test,  $t = .45, p = .66$ ). Females who originally thought their female partner was male (Condition 6) stayed with their own response 48% of the time in round one, while staying with their own response 58% once they learned their partner was female. This difference is not statistically significant (paired samples t-test,  $t = .45, p = .66$ ).

Females who worked with a male in both rounds (Condition 7) stayed with their own response 51% in round one and 50% in round two. The difference is not statistically significant (paired samples t-test,  $t = .18, p = .86$ ). Females who originally thought a male partner was female stayed with their own response 57% of the time in round one, and 54% of the time once they learned their partner's

true gender. This difference is also not statistically significant (paired samples t-test,  $t = 1.22$ ,  $p = .24$ ).

There are also no statistically significant differences on any of the other interaction-specific outcomes for females in the gender mistake conditions compared to those females in the corresponding no mistake conditions. Females who originally thought their male partners were female (Condition 8) rated their own change behavior at 62.14, while females who knew their male partners' true gender all along (Condition 7) rated their round two change behavior at 56.05 (see Table 9). The difference is not statistically significant ( $t = 1.42$ ,  $p = .16$ ). Females who originally thought their female partners were male (Condition 6) rated their round two change behavior at 47.15, while those who knew their partner was female all along rated their round two change behavior at 52.52. This difference is also not statistically significant ( $t = 1.25$ ,  $p = .22$ ).

Females who originally thought their male partners were female (Condition 8) rated their own accuracy at 47.45, compared to 44.29 for females who knew their partner was male all along (see Table 10). The difference, however, is not statistically significant ( $t = -.94$ ,  $p = .36$ ). Likewise, there is no statistically significant difference in ratings of one's own accuracy between females who originally thought their female partner was male and those who knew their partner was female all along ( $t = .53$ ,  $p = .60$ ).

As Table 11 shows, females who originally thought their male partners were female rate their own round two Contrast Sensitivity ability at 36.70, while those who knew their partner was male all along rate their ability at 34.86. The

difference is not statistically significant ( $t = -.39, p = .70$ ). Those who originally thought a female partner was male rate their round two ability at 37.55, compared to a rating of 39.00 for those who knew their partner was female all along. Again, the difference is not statistically significant ( $t = .32, p = .75$ ).

Table 12 shows that females who originally thought their male partners were female rate their partner's round two accuracy at 53.80, while those who knew their partner was male all along rate their partner's accuracy at 55.43. The difference is not statistically significant ( $t = .51, p = .61$ ). Likewise, females who originally thought their female partner was male rate their partner's accuracy the same as do those who knew their partner was female all along (51.10 compared to 51.19,  $t = .03, p = .98$ ).

As Table 13 shows, females who originally thought their male partners were female rate their partner's round two Contrast Sensitivity ability at 55.15, while those who knew their partner was male all along rate their partner's ability at 59.00. This difference is not statistically significant ( $t = 1.22, p = .23$ ). Those who originally thought a female partner was male rate their partner's ability at 45.55, while those who knew their partner was female all along rate their partner's ability at 46.81. Again, this difference is not statistically significant ( $t = .38, p = .71$ ).

#### *7.1.4 Females: Asymmetrical effects of gender mistakes*

As with the male results, the female results fail to support Hypothesis 2. For females, neither mistakes in which males are mistaken for females nor those in which females are mistaken for males appear to have any lingering effects on

interaction or patterns of inequality. There is therefore no evidence to support the hypothesis that mistakes in which males are mistaken for females have greater lingering impact than mistakes in which females are mistaken for males.

## **7.2 Generalized Outcomes**

### *7.2.1 Males: Name-matching Paradigm Results*

The results of the name-matching paradigm exercise are used to test the hypothesis that gender mistakes decrease the use of sex as a basis for social categorization. According to the name-matching paradigm, the ratio of within-sex errors to total errors represents the degree to which participants are using sex as a basis for social categorization. If gender mistakes decrease the use of sex categorization, then the ratio of within-sex errors to total errors will be greater for participants who did not experience a gender mistake than for those who did. Table 4 shows the name-matching paradigm results for both male and female participants. For males, the ratio of within-sex errors to total errors is .66 for those in the no mistake conditions, and .57 for those in the mistake conditions. This difference is statistically significant ( $t = 2.50, p < .01$ ). Experiencing a gender mistake appears to lead to a lower proportion of within sex errors, indicating that males who experience a gender mistake use sex as a basis of social categorization less than do those who did not experience a gender mistake.

**Table14. Ratio of Within-Sex Errors to Total Errors by Presence of Mistake and Gender of Participant, N = 165 (standard deviation in parentheses)**

<b>Presence of Mistake and Gender</b>	<b>Ratio</b>
<i>Males, N = 83</i>	
No Mistake	.66 (.13)
Mistake	.57 *** (.18)
<i>Females, N = 82</i>	
No Mistake	.65 (.17)
Mistake	.57 ** (.22)

\*\*\*  $p > .01$ , one-tailed t-test for difference in means between No Mistake and Mistake conditions, Males

\*\*  $P > .05$ , one-tailed t-test for difference in means between No Mistake and Mistake conditions, Females

### 7.2.2 Females: Name-matching Paradigm Results

The name-matching paradigm results for females are remarkably similar to the male results (see Table 4). The ratio of within-sex errors to total errors for females who did not experience a gender mistake is .65. For females in the gender mistake conditions, the ratio is .57. Again, the difference is statistically significant ( $t = 1.81$ ,  $p < .05$ ). Taken together, the male and female name-matching paradigm results provide support for my hypothesis that gender mistakes can lead to decreased use of sex as a basis for social categorization.

### 7.2.3 Males: Ambivalent Sexism Inventory Results

To test the hypothesis that gender mistakes decrease sexism, I use the results of the Ambivalent Sexism Inventory administered to all participants at the

end of the experiment. If gender mistakes decrease sexism, then participants who experienced a gender mistake will have lower scores on the ASI than participants who did not experience a gender mistake. The ASI consists of 4 components, reflecting sets of beliefs about men, women, and their relationships to each other. The components are labeled Heterosexual Intimacy, Complementary Gender Differentiation, Hostile Sexism, and Protective Paternalism.

The results shown in Table 15 indicate that for male participants, gender mistakes have no significant effect on any of the components of Ambivalent Sexism, or on the composite ASI score. For Heterosexual Intimacy, males in the no mistake conditions scored 44.54, while those who experienced a gender mistake scored 45.18. The difference is not statistically significant ( $t = -.11$ ,  $p = .92$ ). Males who did not experience a gender mistake scored 41.99 on the Complementary Gender Differences scale, while those in the mistake conditions scored 44.48. Again, the difference is not statistically significant ( $t = -.55$ ,  $p = .58$ ). On the Hostile sexism scale, males in the no mistake conditions scored 43.89, while those in the mistake conditions scored 47.99. This difference is also not statistically significant ( $t = -1.36$ ,  $p = .18$ ). Likewise, the difference in Protective Paternalism scores between those in the no mistake conditions (50.25) and those in the mistake conditions (52.96) is not statistically significant ( $t = -.61$ ,  $p = .55$ ).

Not surprisingly then, the difference in the Composite ASI score for males who did not experience a gender mistake (44.91) and those who did experience a gender mistake (47.90) is not statistically significant ( $t = -1.09$ ,  $p = .28$ ). In fact,



contrary to my hypothesis, male participants who experienced a gender mistake had slightly higher levels of sexism as measured by each of the four components than those who did not experience a gender mistake. The differences, however, are small, and not statistically significant.

**Table 15. Ambivalent Sexism Inventory (ASI) Scores by Presence of Mistake, Male Subjects, N = 83 (standard deviations in parentheses)**

<b>ASI Component</b>	<b>No Mistake Conditions</b>	<b>Mistake Conditions</b>
Heterosexual Intimacy	44.54 (25.63)	45.18 (28.12)
Complementary Gender Differentiation	41.99 (19.67)	44.48 (21.13)
Hostile Sexism	43.89 (10.39)	47.99 (16.35)
Protective Paternalism	50.25 (17.13)	52.96 (22.94)
Composite ASI	44.91 (9.20)	47.90 (15.02)

#### *7.2.4 Females: Ambivalent Sexism Inventory Results*

For female participants, there is limited support for the hypothesis that gender mistakes decrease sexism. As Table 16 shows, females who experienced a gender mistake have lower scores on the Heterosexual Intimacy component (38.13) than those who did not experience a gender mistake (47.51). The difference is statistically significant ( $t = 2.01, p < .05$ ). Females who experienced a gender mistake also have lower scores on the Complementary Gender

Differentiation component (40.23) than those in the no mistake conditions (45.62). Again, the differences are statistically significant ( $t = 1.42, p < .10$ ).

On the Hostile Sexism component, females in the mistake conditions scored 33.90 compared to 34.43 for those who did not experience a gender mistake. The difference is not statistically significant ( $t = .16, p = .87$ ). Females who did not experience a gender mistake scored 37.60 on the Protective Paternalism scale, while those in the mistake conditions scored 38.94. Again, the difference is not statistically significant ( $t = -.37, p = .71$ ).

On the Composite ASI scale, females who experienced a gender mistake scored 36.45, while those who did not scored 38.91. The difference, however, is not statistically significant ( $t = .92, p = .36$ ).

**Table 16. Ambivalent Sexism Inventory (ASI) Scores by Presence of Mistake, Female Subjects, N = 82 (standard deviations in parentheses)**

ASI Component	No Mistake Conditions	Mistake Conditions
Heterosexual Intimacy	47.51 (21.29)	38.13 ** (21.04)
Complementary Gender Differentiation	45.62 (16.50)	40.23 * (17.81)
Hostile Sexism	34.43 (12.58)	33.90 (16.82)
Protective Paternalism	37.60 (15.75)	38.94 (17.43)
Composite ASI	38.91 (11.57)	36.45 (12.74)

\*\*  $p < .05$ , one-tailed t-test for difference in means

\*  $p < .10$ , one-tailed t-test for difference in means

## CHAPTER 8

### DISCUSSION AND CONCLUSIONS

#### 8.1 Summary and Discussion of Results

The main argument advanced in this project is that gender mistakes affect interaction and patterns of inequality, even after they are corrected. I used a modified version of the standard expectation states experimental setting to test this argument. The results of my experiment provide only limited support for my hypotheses. Table 17 provides a summary of the central hypotheses and results that were presented in the previous chapter.

**Table 17. Summary of Hypotheses and Results**

<b>Summary of Hypotheses</b>	<b>Summary of Results</b>
1. Gender mistakes affect ensuing patterns of gender inequality, even after they are corrected.	Not supported
2. Gender mistakes in which males are thought to be females have greater lingering effects on patterns of inequality than mistakes in which females are thought to be males.	Not supported
3. Gender mistakes decrease the subsequent use of sex as a basis for social categorization.	Supported
4. Gender mistakes decrease individual agreement with sexist attitudes.	Partial support: for female participants only, gender mistakes decrease agreement with notions of Complementary Gender Differences and Heterosexual Intimacy.

My results indicate that gender mistakes have no impact on an actor's interaction with the person who was incorrectly sex categorized, once the mistake

has been corrected. Specifically, gender mistakes have no lasting effect on influence in the interaction, as both male and female participants who experienced a gender mistake treated their partners the same after the mistake was corrected as did participants who knew their partners true gender all along. In addition, with one exception, gender mistakes had no lingering effects on participants' attitudes about their own or their partners' task ability. Males who originally thought that their female partner was male rate their own Contrast Sensitivity ability lower than males who knew their partner was female all along. It appears that, for the most part, actors adjust to the correct gender information about their interaction partner, and then treat that person as if the mistake never happened.

One potential reason that gender mistakes had no impact on interaction in my experiment may be that the study participants did not make the mistake themselves. In order to hold the source of the mistake constant in this study, I created an experimental design where the experimenter made the gender mistake rather than the participant. Due to this design, it is likely that the participants were less invested in the particular mistake, and were therefore able to act as if the mistake never happened, once it was corrected.

I also hypothesized that gender mistakes would have effects on the more generalized outcomes of sexism and use of sex as a basis for social categorization. My results show only limited support for the idea that experiencing a gender mistake reduces an individual's sexist attitudes. For males, there is no effect of experiencing a gender mistake on sexist attitudes. For females, gender mistakes affect some aspects of sexism, but not others. Specifically, females who

experience a gender mistake score lower on measures of Heterosexual Intimacy and Complementary Gender Differentiation than do females who did not experience a gender mistake. Gender mistakes have no effect on female scores on measures of Hostile Sexism or Protective Paternalism. There is also no difference in composite scores on the Ambivalent Sexism Inventory between females who experienced a gender mistake and those who did not.

The Heterosexual Intimacy component of the ASI taps into individual's beliefs in the notion that every man ought to have a woman he adores (Glick et al. 2000). Questions 1, 6, 12, and 13 (see Appendix 4, A.4.2) make up the Heterosexual Intimacy component of the ASI. My results suggest that women who have experienced a gender mistake are less supportive of the idea that heterosexual intimacy is a requirement for a complete and happy life. There is a strong connection between gender non-conformity and presumed homosexuality (see Thorne 1993; Lester 2002), such that individuals who are seen as not conforming to gender norms are often presumed to be gay or lesbian. It is possible that a gender mistake forces participants to entertain the possibility that their task partner might be gay or lesbian. By making gender non-conformity salient, it is also likely that gender mistakes also make issues of sexual non-conformity salient. Since women in general are more accepting of homosexuality than are men (Herek 2002), perhaps women who experience a gender mistake become more willing to reject notions of compulsory heterosexual intimacy because the gender mistake has highlighted issues of gender non-conformity and sexuality for them.

The Complementary Gender Differentiation component of the ASI measures agreement with notions that women have many favorable traits that complement those of men by compensating for traits that men are stereotypically assumed to lack (Glick and Fiske 1996). Questions 8, 19, and 22 (see Appendix 4, A.4.2) are the items that make up the Complementary Gender Differentiation component of the ASI. In the face of a gender mistake, females in my study are less accepting of the notion that women possess certain positive traits that distinguish them from men. As predicted, gender mistakes appear to call into question the notion that gender differences are natural and obvious.

Why do gender mistakes affect female attitudes about heterosexual intimacy and gender differences, but not male attitudes? I believe one explanation springs from the connections between gender and sexuality. As noted earlier, men tend to have more negative views towards homosexuality than women (Herek 2002). Moreover, the desire to avoid being labeled as gay or lesbian appears to be stronger for men in U.S. society (Herek 1986; Kimmel 1997). A man's reaction to a situation where someone they thought was female turns out to be male (or vice versa) is more likely than a woman's reaction to be influenced by anti-gay or homophobic feelings. This gender gap in attitudes toward homosexuality may explain why gender mistakes decrease female adherence to notions of gender difference and heterosexual intimacy, but do not affect male attitudes. Subtle male homophobia may mitigate any disruptive effects that gender mistakes might otherwise have on sexist attitudes.

The one area in which gender mistakes do appear to have significant effects for both males and females is in the subsequent use of sex as a basis for social categorization. For all participants, experiencing a gender mistake was associated with decreased use of sex as a basis of social categorization. In experiencing a gender mistake, individuals are confronted with the reality that gender cues are not always accurate predictors of sex category. Experiencing a gender mistake seems to shake up people's faith in the simplicity of a gender dichotomy, or at least in their ability to classify others according to gender.

It is interesting to note that participants in my study showed less willingness to use sex as a basis for social categorization after experiencing a gender mistake that was made by someone else (the experimenter). One could argue that the effect of gender mistakes on subsequent sex categorization might be even stronger in cases where the individual makes the mistake himself or herself. Moreover, the gender mistake in my experiment involved the use of an androgynous name, rather than any visual cues. The effect of the mistake, however, was to decrease the use of sex as the basic of categorizing others on the basis of pictures. If the original gender mistake had been made based on visual cues, it is likely that the impact on subsequent social categorization using visual cues would be even stronger.

## **8.2 Limitations and Suggestions for Future Research**

As noted earlier, one of the limitations of this study is that the mistake manipulation is not particularly natural. Having the experimenter make the mistake allowed me to hold the source of the mistake constant across participants.

However, the impact of a mistake made by someone else is likely to be very different from the impact of a mistake people make themselves. The lack of personal responsibility and investment in the mistake may account for the lack of significant impact of the mistake on the interaction-specific outcomes. Future research should examine the impact of mistakes made by participants themselves.

In addition, future research should examine mistakes made on the basis of features other than androgynous names, such as visual cues. It is very likely that the source of the mistake has implications for the kind of impact the mistake might have. A mistake based on visual cues is likely to have an especially strong impact on subsequent use of sex as the basis of categorizing individuals by photos or in-person. By the same token, a mistake based on an androgynous name may be particularly likely to decrease people's use of names as a proxy for sex category.

Another way that the source of the mistake might affect the subsequent impact of that mistake is through the assignment of blame for the mistake. An individual who blames herself for making a gender mistake may over-compensate in the original interaction to avoid embarrassment. In other words, someone who mistakes a man for a woman may go out of their way to treat him as a man once the mistake is discovered. In addition, someone who believes they are responsible for the gender mistake may be especially likely to lose confidence in their ability to correctly sex categorize others, and therefore may show a particularly marked decrease in the use of sex as the basis for social categorization.



Someone who believes that the gender mistake is the result of deliberate gender non-conformity on the part of another may react very differently. An actor who feels she was deliberately fooled by another into making a gender mistake may be less likely to allow that mistake to affect their subsequent actions and attitudes. It is also possible that someone who feels he was deliberately tricked into making a gender mistake might actually respond with an increased reliance on gender stereotypes and sex categories.

Finally, my experimental design did not allow me to assess whether the impact of gender mistake on the generalized outcomes I measured was context-specific or not. It is possible that gender mistakes decrease use of sex as a basis for social categorization for males and females, and decrease adherence to some sexist attitudes for females only in the short-term. An expanded research design, which includes follow-up measures of sex categorization and attitudes, is needed to determine the long-term impacts of gender mistakes.

Clearly much additional research is needed to fully explore the implications of various kinds of gender mistakes for gender inequality.

### **8.3 Implications of Gender Mistakes for Inequality**

As noted earlier, recent sociological treatments of gender inequality have highlighted the important causal role that sex categorization plays in creating and conserving gender inequality (Bielby 2000; Reskin 2000; Ridgeway and Correll 2000). In recognition of the same connection, a number of post-modern feminist and queer theory scholars have argued that the best method for reducing or eliminating gender inequality is through the disruption or elimination of sex

categories and sex categorization (Bem 1995; Butler 1990; Connell 1995; Lorber 1994; Risman 1999). In this project, I have attempted to provide a partial test of this idea by examining the impact of mistakes in gender categorization on inequality.

I have argued that making a gender mistake disrupts the sex categorization process and therefore has the potential to disrupt subsequent patterns of gender inequality. Specifically, I argued that gender mistakes would impact the immediate interaction by affecting the influence behavior and the attitudes of the person who made the mistake, even after the mistake was corrected. I further argued that gender mistakes would affect more generalized outcomes, such as sexist attitudes and subsequent use of sex as the basis for social categorization.

As stated earlier, my results provide only limited support for the basic argument. Gender mistakes appear to have some effect on generalized outcomes, but virtually no effect on the interaction-specific outcomes I measured. So, while gender mistakes do not seem to have lingering effects on the treatment of the specific person about whom the mistake was made, they do have some lingering effects on the behaviors and attitudes of the person who “made” the mistake, at least in the short-term.

Actors who have mistaken a man for a woman, or vice versa, are less inclined to use sex as a basis for social categorization after the experience. In addition, women who have experienced a gender mistake are less likely to adhere to notions of gender differences and heterosexual intimacy.

Given the crucial role sex categorization plays in processes that create and sustain gender inequality, it would seem that gender mistakes could provide a means for undercutting the current gender system. The results of this research suggest that accuracy, or assumed accuracy, plays a crucial role in the process of sex categorization. Perhaps one of the reasons sex categorization is so automatic is that we generally believe that we are good at it, in other words that we can do it easily and accurately. Clear-cut gender displays, then, appear to be critical to upholding the current gender system. If we became less good at sex categorization, or believed we were less good at it, maybe we would do it less. The result of less sex categorization should be a reduction in overall inequality based on sex categories.

In addition, by decreasing women's adherence to notions of gender differences and compulsory heterosexuality, gender mistakes have the potential to disrupt some women's investments in the current gender system. As Ridgeway and Correll note (2000), some heterosexual women benefit, or believe they benefit, from the current framework of gender beliefs, and therefore are likely to resist any blurring of sex/gender categories. Risman (1999) likewise argues that strong resistance to abolishing our current gender system stems from a fear of eliminating the kind of pleasurable gender play that is intertwined with heterosexual sexuality. The less a woman believes in gender differences and in compulsory heterosexuality, the less attached she may be to the current gender system and to pleasures derived from the kinds of gender play associated with heterosexual sexuality. By contributing to a decrease in women's adherence to

notions of gender differences and heterosexual intimacy, gender mistakes may contribute to declining support for the current system of gender beliefs and inequality among women.

My results provide support for the post-modern feminist and queer theory idea that ambiguous or deviant gender displays represent a threat to the gender status quo. Perhaps current gender inequality could be undermined, at least a bit, by individual willingness to engage in subversive gender displays that might lead to gender mistakes. Perhaps over time, an accumulation of many, many gender mistakes, in many interactions involving many people would result in some decrease in the use of sex categorization, and decrease in some sexist attitudes for women, with an accompanying decrease in resulting gender inequality.

## APPENDIX 1 Experimental Scripts

### A.1.1 Main experimental script

Hello. My name is \_\_\_\_\_. I am going to tell you a little bit about the study you will be participating in and then get you started. Let me apologize in advance for reading to you, but this is the way we make sure that the details of the study are the same for all participants.

This is a study of how the gender composition of a team or partnership might affect group decision-making abilities. Even though many people now work together in virtual groups, little research has been done on how gender affects the group decision-making abilities of non face-to-face groups.

In this study, you will solve some decision-making tasks with a partner by communicating with your partner over a computer network only. We are randomly assigning subjects to work in either same-sex or mixed-sex groups, so that we can assess the impact of gender composition on how your team solves group decision-making problems. Your task partner is in a room just like this one, and is receiving these same instructions from another Research Assistant. You will complete 2 rounds of the study task with your partner, so that we can be sure to collect enough information about your group's decision-making. At the end of each round, you will be asked to complete a brief computerized survey. Once you have completed both rounds, and both surveys, we will ask you to complete a different task, by yourself. The entire study should take about an hour to an hour and 1/2 complete.

Throughout the study, all participants will be observed using a video hook up like this one (*point to camera in corner of room*). We are NOT taping you; we are merely using the cameras so that we can see when participants reach important starting and stopping points throughout the study.

Before we start, I need you to fill out some paperwork. The first form is the consent form. There are 2 identical copies of the form—I just need you to read and sign the top one, and keep the 2<sup>nd</sup> form for your own information and records. The second form is a Session Information Sheet. There are 2 different copies of this form, one for you to keep, and one to exchange with your partner. On the one you keep, just fill in the blanks marked “First Name”, “Year”, “Seat #”, and “Session ID#” for now. You are Seat #2, and your session ID # is \_\_\_\_\_. You will receive information about the composition of your team later. Please put only your first name on the information sheet, as all information from this study is anonymous.

Please fill out both forms now.

(Wait while subjects fill out both forms. Collect the signed copy of the consent form and the Partner copy of the Info sheet).

Thanks. We are almost ready to begin the first part of the study. The problems you and your partner will solve are problems designed to test your Contrast Sensitivity Ability. Specific details about the task, and instructions for proceeding will be conveyed to you and your partner on the computer. At certain points throughout the study, the instructions on your computer will ask you to wait for a research assistant before proceeding. It is very important that you not touch the keyboard or mouse at these points. We need to insure that you and your partner do not get ahead of each other during the study. So, when you are asked to wait for a Research Assistant, please use the Post-It note to signal me.

(Demonstrate putting the Post-It note in the corner of computer screen).

While I go exchange information sheets with the other Research Assistant, you and your partner will read information and instructions about the task, and complete a Practice Round. On the last page of instructions, there will be a summary of the information as well as instructions to signal for the Research Assistant. Again, it is very important that you not click on the button at the bottom of that page until I tell you. Just signal me with the Post-It and I will come back in with your partner's info. Then you two can get started on the task at the same time.

Please press Connect to Network now. In a few seconds, the first instruction screen will appear.

(Leave room with consent form and Partner copy of Info sheet)

(Return to room when signaled, with copy of "Jordan's" Information sheet.)

*(The script differs here depending on the condition)*

*Male participant, male partner: No mistake condition:*

OK—You are in a same-sex group, so go ahead and circle that on your info sheet. Here is your partner's information (put partner's info sheet on table for subject to see).

*Male participant, male partner: Advantaging Mistake condition:*

OK—You are in an opposite-sex group, so go ahead and circle that on your info sheet. Here is your partner's information (put partner's info sheet on table for subject to see).

*Male participant, female partner: No mistake condition:*

OK—You are in an opposite-sex group, so go ahead and circle that on your info sheet. Here is your partner's information (put partner's info sheet on table for subject to see).

*Male participant, female partner: Disadvantaging Mistake condition:*

OK—You are in a same-sex group, so go ahead and circle that on your info sheet. Here is your partner's information (put partner's info sheet on table for subject to see).

*Female participant, female partner: No mistake condition:*

OK—You are in a same-sex group, so go ahead and circle that on your info sheet. Here is your partner's information (put partner's info sheet on table for subject to see).

*Female participant, female partner: Disadvantaging Mistake condition:*

OK—You are in an opposite-sex group, so go ahead and circle that on your info sheet. Here is your partner's information (put partner's info sheet on table for subject to see).

*Female participant, male partner: No mistake condition:*

OK—You are in an opposite-sex group, so go ahead and circle that on your info sheet. Here is your partner's information (put partner's info sheet on table for subject to see).

*Female participant, male partner: Advantaging Mistake condition:*

OK—You are in a same-sex group, so go ahead and circle that on your info sheet. Here is your partner's information (put partner's info sheet on table for subject to see).

It's almost time to start the 1<sup>st</sup> round of Contrast Sensitivity problems. As you know from the computer instructions, you and your partner will both know each other's initial choices on each problem before making your final choice. It is important that you choose the very best answer for your final choice, as this is the choice that counts towards your team score. When you are finished with both rounds, we will compare your team score to the national standards you read about. As an incentive to teams to do well, we will be giving \$50 to members of any team that scores in the Superior category in both rounds.

When you have completed the 1<sup>st</sup> round of tasks, there will be a few questions for you to answer. When you have finished answering the questions, simply signal me with the Post-It, so we can start you and your partner together on the 2<sup>nd</sup> round. Go ahead and press Continue to start round one. Good luck.

(Leave the room and wait to be signaled. When signaled, wait a bit, then go back into room.)

*(The script differs here depending on the condition)*

*Male participant, male partner: No mistake condition:*

Thanks for waiting.

Your partner is now done with the questionnaire as well, so let's start round two. The procedures are identical to round one, with a longer questionnaire at the end. As before, please just signal me when you finish the questionnaire. Go ahead and press Continue, and good luck on this round.

*Male participant, male partner: Advantaging Mistake condition:*

Thanks for waiting.

I just talked to the other Research Assistant and found out that your partner is actually a guy. When I saw the name Jordan, I just assumed it was a girl. I'm really sorry for the

mix-up. It turns out you are actually in a same-sex group, so please go ahead and change that on the information sheet. Sorry about that.

OK, now let's start round two. The procedures are identical to round one, with a longer questionnaire at the end. As before, please just signal me when you finish the questionnaire. Go ahead and press Continue, and good luck on this round.

*Male participant, female partner: No mistake condition:*

Thanks for waiting.

Your partner is now done with the questionnaire as well, so let's start round two. The procedures are identical to round one, with a longer questionnaire at the end. As before, please just signal me when you finish the questionnaire. Go ahead and press Continue, and good luck on this round.

*Male participant, female partner: Disadvantaging Mistake condition:*

Thanks for waiting.

I just talked to the other Research Assistant and found out that your partner is actually a girl. When I saw the name Jordan, I just assumed it was a guy. I'm really sorry for the mix-up. It turns out you are actually in an opposite-sex group, so please go ahead and change that on the information sheet. Sorry about that.

OK, now let's start round two. The procedures are identical to round one, with a longer questionnaire at the end. As before, please just signal me when you finish the questionnaire. Go ahead and press Continue, and good luck on this round.

*Female participant, female partner: No mistake condition:*

Thanks for waiting.

Your partner is now done with the questionnaire as well, so let's start round two. The procedures are identical to round one, with a longer questionnaire at the end. As before, please just signal me when you finish the questionnaire. Go ahead and press Continue, and good luck on this round.

*Female participant, female partner: Disadvantaging Mistake condition:*

Thanks for waiting.

I just talked to the other Research Assistant and found out that your partner is actually a girl. When I saw the name Jordan, I just assumed it was a guy. I'm really sorry for the mix-up. It turns out you are actually in a same-sex group, so please go ahead and change that on the information sheet. Sorry about that.

OK, now let's start round two. The procedures are identical to round one, with a longer questionnaire at the end. As before, please just signal me when you finish the questionnaire. Go ahead and press Continue, and good luck on this round.

*Female participant, male partner: No mistake condition:*

Thanks for waiting.

Your partner is now done with the questionnaire as well, so let's start round two. The procedures are identical to round one, with a longer questionnaire at the end. As before, please just signal me when you finish the questionnaire. Go ahead and press Continue, and good luck on this round.



*Female participant, male partner: Advantaging Mistake condition:*

Thanks for waiting.

I just talked to the other Research Assistant and found out that your partner is actually a guy. When I saw the name Jordan, I just assumed it was a girl. I'm really sorry for the mix-up. It turns out you are actually in a same-sex group, so please go ahead and change that on the information sheet. Sorry about that.

OK, now let's start round two. The procedures are identical to round one, with a longer questionnaire at the end. As before, please just signal me when you finish the questionnaire. Go ahead and press Continue, and good luck on this round.

(Leave again—come back when they signal).

OK, thanks. You are now done with the Contrast Sensitivity part of the study, so go ahead and press Close Network and then Quit to exit the program.

In this final part of the study, you will work alone on a completely different task. In this part of the study, we are interested in your impressions of people. You will view a PowerPoint slide show consisting of photos of a group of students discussing planning for a campus event. We had 8 students discuss this topic amongst themselves a few weeks ago, and then took photos of them so we could see what other students thought of them, and their ideas. For each person in the slide show, you will get to see 3 statements they made. After you view the slideshow, we will ask you some questions about your impressions of the individuals you saw.

The slide show runs on its own once you start it. To start it, double-click on the PlaySlideShow icon on the computer. When the slide show is over, please signal me with the Post-It.

(Leave room. When signaled, return with the Photo Sheet, and the Recall Test sheet. Make sure the session # is written on the top of the Recall test. When you enter the experiment room, close the Power Point program—Press return, then close PowerPoint by using File, Close.)

OK. The first thing we want you to do is this Recall test. Here are the pictures and names of the individuals from the slide show. On this sheet, we are asking you to match up each statement with the person who said the statement. Just write the person's name in the blank next to the statement. You can take as long as you need. If you are unsure who said any particular statement, please go ahead and make your best guess. It is important to us that you put a name for every statement. When you are done, signal me with the Post-It. Good Luck.

(Leave room. When signaled, return with Session notes, Debriefing script, Pay record, and \$11. If they have left any blank answers on the Recall test, encourage them to make their best guess. Collect the photo sheet and the test. Start by asking the questions on the Session notes sheet, then read the debriefing script.)

### **A.1.2 De-Briefing Script**

The question we were trying to answer in this study is how mistaken information about someone else's gender can affect how people interact with that person, even after receiving the correct information.

We know from previous research that people treat others differently based on their gender. For example, people are generally more likely to defer to males than to females, especially when gender seems relevant to the task.

To determine whether mistaken gender information would affect you, we had you work on versions of the Contrast Sensitivity Task alone and with a partner. We expected that this test would be difficult for you and other participants. The task was constructed to seem like it was tapping into subtle differences in ability. In actuality, there are no right answers to the test items--all items have equal amounts of white space. Because there were truly no right answers, no participant has any advantage over another participant. We wanted everyone in the study to be equally likely to take advice from his or her partners.

We also wanted the experience of working on a decision-making team to be the same for all participants. Therefore, rather than working with a live partner, the partner responses you received were pre-programmed computer responses. There was no other actual person working on the task with you.

*(The script differs here depending on the condition)*

*All mistake conditions:*

This means that both the original "mistaken" information about your fictitious partner, and the subsequent "correct" information were made up. This is how we were able to control the kind of gender mistake that occurred.

*All no mistake conditions:*

You were randomly assigned to one of the control conditions, in which no gender mistake was made about your fictitious partner

By using a computer program rather than a live partner, we can be certain that the differences we find among groups of subjects will be due to our theoretical variables, rather than to individual differences among partners. Does this make sense to you?

OK, since we will obviously not be able to tell which "teams" scored in the Superior range in our study, we will have a random drawing for the \$50 bonus at the end of our study. So, you still have a chance to win the \$50, but it will be based on luck rather than on your Contrast Sensitivity Ability.

To determine whether a gender mistake would affect how people classify others, we had you look at a series of photographs, and then try to recall who said what. The people in the photographs are real students, but the names and statements attributed to them are fictitious.

Now, let me tell you what we are predicting in this study. We expect that gender mistakes will still affect how individuals interact, even after they know the correct information. So, for example, we expect that if you thought you were working with a girl originally, and then you found out that your partner was a guy, you would treat his answers differently than you would have if you knew he was a guy all along. We also expected that experiencing a gender mistake would affect people's attitudes towards men and women generally, as well as their ability to classify pictures of men and women.

We do not expect that our predictions will hold for all participants in this study, but on average this is what we are expecting to find. Do you have any questions about how we conducted this study?

Finally, it is possible that some of your friends may participate in this study. It is extremely important that you not tell them about the design or purpose of our study. If they know about the study in advance, they will not be able to participate.

Now, can I get you to sign the pay sheet? Thank you very much for helping us today. Please feel free to call us if you have any questions about today's study.

## **APPENDIX 2**

### **Computerized Study Description**

This appendix contains the study description and instructions that participants read on their computer screens.

#### **A.2.1 Round One Instructions**

##### *Screen 1*

Please make yourself comfortable but please do not touch any of the things on your desk until the instructions explain how to use them.

We are members of a research team of social scientists who are interested in studying group decision-making processes. Currently, we are focusing on how teams work together to solve problems involving an important perceptual ability called "Contrast Sensitivity" ability.

In this study, we are going to be studying team ability levels. This means that you will be working with a partner to solve some Contrast Sensitivity problems. Your partner for the study is in another room like the one you are in, and one of the research assistants is explaining the study to your partner as it is being done for you. You and your partner will be working as a group to solve Contrast Sensitivity problems.

We are handling today's study this way because of several recent studies which have been done on the effectiveness of individuals working together as a team. For many kinds of problems, these studies indicate that individuals working together perform much more effectively than do individuals who work the same problems alone. For this reason, we will have you work with a partner as a team.

In this study, we are interested in the specific issue of how the gender composition of the team affects team performance.

##### *Screen 2*

Most of what we know about the effect of gender composition on how two person teams solve problems comes from studies where the teams discussed problems and solutions to these problems face-to-face. However, advances in video and computer technology are providing more and more opportunities for individuals to work together to solve problems even when face-to-face interaction is not possible. Therefore, the study we are conducting today involves a situation in which the partners do not discuss possible solutions to problems face-to-face, but rather communicate their choices by means of modern communication networks. In this way, we can study the effects of gender composition on the task performance of teams who do not have face-to-face interaction.

We have already utilized one part of this network -- the computers we are now using. However, while you will not be solving the problems face-to-face, you will have the opportunity to communicate with one another by means of the computer system over which you are now receiving these instructions.

Let's demonstrate how the computer system works by sending some information across the network connection and to the research assistants. On the next page, we have asked you to indicate your seat number for the study. After you do this and click on the "Send Information" button at the bottom of the page. Click on the button below marked "Go to Next Page of Instructions" now to do this.

### ***Screen 3***

Because the two of you will be working as a group today, we want to give both of you as much information as possible about Contrast Sensitivity ability.

Contrast Sensitivity is a perceptual ability which is not necessarily related to specialized skills an individual might possess, such as mathematical or artistic ability. That is, it is entirely possible that a person might be a very skilled artist, but not have very much Contrast Sensitivity ability. This means that individuals who do poorly in art or math may in fact be quite accurate in making Contrast Sensitivity judgments.

Second, preliminary research indicates that, on average, males score higher than females on tests of Contrast Sensitivity. Researchers are not sure why males seem to possess more Contrast Sensitivity ability. Some researchers feel the difference is at least partially due to different socialization experiences. Others have noted that the gender differences in contrast sensitivity may be due to men's greater spatial reasoning skills.

### ***Screen 4***

At the present time, social scientists are not sure what the origins of Contrast Sensitivity are. This is one reason why we are conducting today's study. We are interested in learning more about Contrast Sensitivity Ability and how different types of teams perform on tests of Contrast Sensitivity.

As noted earlier, we are specifically interested in learning more about the effects of a team's gender composition on team performance on Contrast Sensitivity tasks. You have been randomly assigned to work with either a same-gender or opposite-gender partner today.

During this part of the study, you and your partner will be working with a set of Contrast Sensitivity problems that look like the one shown on the next screen.

### ***Screen 5***

In this test of Contrast Sensitivity ability, we are asking you to examine two patterns and select which of the two patterns contains the greater amount of white area. These kinds of problems are commonly used to evaluate the presence or absence of Contrast Sensitivity ability.

### ***Screen 6***

You will probably find that some of these slides are very difficult to judge. This is due to the fact that the difference in the amount of white area between the two patterns is sometimes quite small. However, there is a right and a wrong answer to each and every slide, and we have found that persons with high Contrast Sensitivity consistently choose more correct answers than those with low Contrast Sensitivity. It is also the case that persons with high levels of Contrast Sensitivity ability may not be completely aware of how it is that they choose the right answer. They seem to be operating on the basis of very slight, almost intuitive cues and feelings. However, it is best to be cautious; guesses that are based on first impressions may often be incorrect.

### ***Screen 7***

As noted, we are interested in how individuals and groups use their Contrast Sensitivity to solve problems. We have observed that in many situations, such as when a doctor diagnoses a difficult illness, individuals are called upon to make decisions that must be correct. That is, if the doctor does not make the right diagnosis, the patient might die. Social scientists refer to this kind of situation as a Critical Choice situation.

In Critical Choice situations, when the person is concerned only with the correctness of the decision, he or she will often seek all the information and advice from others that is available. Because the most important thing in a Critical Choice situation is to be right, individuals will not care whether they or others first realize what the appropriate decision is, so long as the decision is the correct one. It is clear then, that exchanging information with others can often lead to more correct decisions than an individual could make working alone.

In this study, we are interested in examining this kind of teamwork situation in greater detail. Consequently, we are going to give the two of you the opportunity to exchange information with each other as to what each of you think is the correct answer for each problem before you make your final decisions. You will use buttons that will appear on your computer screen to exchange this information with each other.

### ***Screen 8***

This is how it will work...

First, we will present a slide on the screen. After you have each studied the slide for five seconds, you will each be asked to make an initial choice as to which pattern contains the greater area of white -- the top pattern or the bottom pattern. This initial choice will let your partner know whether you think that the top figure or the bottom figure contains the greatest area of white. You will each indicate this choice by pressing a button on your screen that will be in a row labeled "Your Initial Choice."

The next screen of instructions illustrates this...

### ***Screen 9***

Look at the top row of buttons and lights in the above picture. You will have a panel that looks like this, and you will use it in solving the Contrast Sensitivity problems. You express your initial opinion by pressing either the button marked "Top" or the button marked "Bottom." When you have made your initial choice, it will be communicated to the other person, and you will be able to see the other person's opinion register on your panel. That is, on the row of lights on the panel labeled "Your Partner's Initial Choice," either the bulb marked "Top" or the bulb marked "Bottom" will light up.

Let's go through a practice trial, so that you can try this out. When you have both clicked on the button below ("Go to Practice Round"), you will see a screen with a picture of a Contrast Sensitivity problem. You will have five seconds to study the picture. Once you begin viewing the problem, do not click on any buttons until you see instructions on your screen asking you to.

### ***Screen 10***

Now, we will explain our scoring procedures...

As we have explained, you will be working together on 2 sets of 25 Contrast Sensitivity slides. Once the slide appears on your screen, you will have five seconds to make your initial choices as to which pattern contains the greater area of white. Then, after you see your partner's choice, you will have five more seconds in which to make your final choices.

Each time that a team member makes a correct final decision, the team will receive 1 point. If both team members make the correct final choice, the team will receive 2 points. If an individual makes an incorrect final decision, then that person's final decision adds nothing to the team score for that trial. Your team score will consist of the total number of correct final decisions made by both of you. Since there will be 25 trials, the maximum score your team can achieve on each set of trials is 50 points. This means that you both have equal responsibility for your team score.

On the next screen, we will show you the pattern of scores that has been compiled from previous studies involving Contrast Sensitivity Ability.

### ***Screen 11***

First, we have found that when individuals work alone at solving Contrast Sensitivity problems, 0 to 10 is a poor performance. 11 to 15 represents an average performance, and 16 to 25 is clearly a superior performance.

Individuals can improve their scores substantially if they are given the opportunity to see another person's initial choice before having to make a final decision.

### ***Screen 12***

In today's study, we are interested in seeing how well you can work together as a team. When people work together as partners, it has been found that a team score falling between 0 and 26 constitutes a very poor team performance. A team score of 27 to 32 is below average performance. Scores of 33 to 40 represent an average team performance. 41 to 47 points represents an above average score. And, 48 to 50 points clearly represents a superior team performance.

### ***Screen 13***

As you can see from these standards, it has been demonstrated that teams working together are able to perform more effectively than two individuals working independently. For example, an individual with average ability working on these problems alone could expect to get between 11 and 15 correct. Thus, you might expect that two individuals working together might each get between 11 and 15 correct for a total score between 22 and 30. However, as the team results show, the average team score is quite a bit higher -- between 33 and 40. This is because two people working together as a team, and exchanging information with each other can do better than two individuals working alone.

### ***Screen 14***

As we told you earlier, we are interested in seeing how well the two of you can do as a team when you are not in direct communication with each other. We are also interested in comparing the performance of same-gender and mixed-gender teams. As soon as you signal us that you are ready, an assistant will come in to tell you whether you have been assigned to work with a same-gender or an opposite-gender partner.

Please signal to us now that you are ready.

After you have signaled to us, please be patient. Someone will be there to provide you with your team information in a few moments.

**DO NOT PRESS ANY KEYS OR BUTTONS UNTIL INSTRUCTED TO DO SO BY THE ASSISTANT!**

### ***Screen 15***



Before we begin the Contrast Sensitivity Problems, we would like to summarize a few points...

1. You will be shown 2 series of 25 slides and will be asked to decide which figure contains more WHITE.
2. Only your final decision on each slide will count toward your team score.
3. Each correct final decision, counts as 1 point for your team. If both of you choose correctly, your team receives 2 points. Incorrect final decisions add nothing to your team score.
4. Remember: We are interested in how well the two of you can work together as a team. You should not hesitate to change your initial choices if it helps you to make the right decision for your team.
5. You and your partner will complete 2 rounds of 25 Contrast Sensitivity trials. There will be a short break between rounds.
6. At the end of each round, you will be asked to complete a brief computerized survey.
7. Please hold your choices until you see instructions indicating that you should make your selection. Then, make your choice as soon as possible after you have been instructed to do so.
8. There are some things we know about Contrast Sensitivity Ability: First, there is no relationship, as far as we can see, between mathematical ability or artistic ability and Contrast Sensitivity. Second, those who do well on Contrast Sensitivity tests are not always able to explain how they arrive at decisions. Instead, they seem to operate using very slight, almost intuitive cues and feelings.
9. Finally, there are some things about Contrast Sensitivity that researchers do not yet fully understand, such as why males appear to have higher levels of Contrast Sensitivity than females.

PLEASE SIGNAL THE ASSISTANT THAT YOU ARE READY TO START NOW.

DO NOT PRESS THE BUTTON BELOW UNTIL TOLD TO DO SO!

### ***Screen 16***

This part of the study is now complete. While the computer is tabulating your team's score for Round one, we would like to ask you a few questions.

To begin answering these questions, click on the button below.

### ***Screen 17***

You have now completed the first round of Contrast Sensitivity tasks, and answered all of the questions on our first round survey.

After a short break, you and your partner will begin the second round of Contrast Sensitivity tasks. The instructions and procedures for this second round are identical to the procedures you and your partner used in the first round.

Please signal to an assistant that you have completed the first round.

After you signal to the assistant, please be patient.

**DO NOT PRESS ANY KEYS OR BUTTONS UNTIL INSTRUCTED TO DO SO BY THE ASSISTANT!**

### **A.2.2 Round Two Instructions**

### ***Screen 18***

You have now completed the first round of Contrast Sensitivity tasks, and answered all of the questions on our first round survey.

After a short break, you and your partner will begin the second round of Contrast Sensitivity tasks. The instructions and procedures for this second round are identical to the procedures you and your partner used in the first round.

Please signal to an assistant that you have completed the first round.

After you signal to the assistant, please be patient.

**DO NOT PRESS ANY KEYS OR BUTTONS UNTIL INSTRUCTED TO DO SO BY THE ASSISTANT!**

### ***Screen 19***

This part of the study is now complete. While the computer is tabulating your team's score for Round two, we would like to ask you a few questions.

The first set of questions relate to today's study, and are the same questions we asked you after Round one.

The second set of questions relate to the topic of men and women and their relationships in contemporary society.

To begin answering these questions, click on the button below.

### ***Screen 20***

This part of the study is now complete. Please signal to an assistant that you are ready to proceed. While you are waiting for an assistant, please do not touch any of the keys on your computer.

### **A.2.3 Name-Matching Paradigm Instructions**

### ***Screen 21***

Center for Social Research

You are about to view a series of photographs of 8 people discussing their ideas about planning a dorm party for Homecoming weekend.

You will see each person make 3 different statements.

Each slide will consist of the person's name, a statement they made, and a photograph of them.

You will see each slide for 10 seconds.

At the end of the presentation, we will ask you about your impressions of the people you saw.

Press RETURN on the keyboard when you are ready to see the first photograph.

### ***Screen 22***

This concludes the Slide Show.

Please signal to the Research Assistant that you are done.

### **APPENDIX 3**

#### **Experimental Forms**

This appendix contains copies of all of the forms used in experiment.

**A.3.1 Consent Form (see page 90)**

**A.3.2 Information Sheet to Keep (see page 91)**

**A.3.3 Information Sheet to Exchange with Partner (see page 92)**

**A.3.4 Name-Matching Recall Test (see page 93)**

**A.4.5. Photo Sheet for Name-Matching Recall Test (see page 94)**

**CONSENT FORM**  
**Center for Social Research**  
**Stanford University**

FOR QUESTIONS ABOUT THE STUDY, CONTACT:  
Chris Bourg at (650) 723-0263

**DESCRIPTION:** You are invited to participate in a research study on interpersonal interaction in a collective task setting. You will be asked to complete a problem-solving task as a member of a team and to complete a brief questionnaire about your experience. You may also be asked to work on a problem-solving task individually. You will communicate with your team partner through a computer, and with the researcher via an audio hook-up. Finally, you will be shown a series of photos of individuals and will read statements made by each individual. You will then be asked some questions about your impression of each individual.

**RISKS AND BENEFITS:** There are no risks associated with this study. In addition to the pay you will receive, you may also benefit by learning about the process of social research.

**TIME INVOLVEMENT:** Your participation in this study will take approximately 60 minutes.

**PAYMENTS:** You will receive \$11 as payment for your participation. Legally, you can be paid only if you are a US citizen, a legal resident alien (i.e., possess a "green" card), or have a work eligible visa sponsored by the paying institution.

**SUBJECT'S RIGHTS:** If you have read this form and have decided to participate in this project, please understand your participation is voluntary and you have the right to withdraw your consent or discontinue participation at any time without penalty. You have the right to refuse to answer particular questions. Your individual privacy will be maintained in all published and written data resulting from the study.

If you have questions about your rights as a study participant, or are dissatisfied at any time with any aspect of this study, you may contact-anonymously if you wish-the Administrative Panels Office, Stanford University, Stanford, CA (USA) 94305-5401 (or by phone (650) 723-2480-you may call collect).

The extra copy of this consent form is for you to keep.

SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

Protocol Approval Date: 04/27/01  
Protocol Expiration Date: 04/26/02

**Group Decision-Making Study  
Information Sheet**

First name \_\_\_\_\_

Year (circle) FR SO JR SR

Seat # (circle) 1 2

Session # \_\_\_\_\_

Team composition (circle) Mixed-Sex Same-Sex

**Group Decision-Making Study  
Information Sheet (Partner)**

First name \_\_\_\_\_

Year (circle) FR SO JR SR

Seat # (circle) 1 2

Session # \_\_\_\_\_  
Seat # \_\_\_\_\_  
RECALL TEST

- 1) Let's have an all frosh dance in the quad. \_\_\_\_\_
- 2) Why don't we have a costume contest? \_\_\_\_\_
- 3) Why don't we have a barbecue? \_\_\_\_\_
- 4) Let's see how many residents are interested. \_\_\_\_\_
- 5) Each floor could bring their own food. \_\_\_\_\_
- 6) Let's get the Band to come play. \_\_\_\_\_
- 7) We should hang up flyers around the quad. \_\_\_\_\_
- 8) We could put an ad in the Daily. \_\_\_\_\_
- 9) We could have a flag football game. \_\_\_\_\_
- 10) We could pay for a soda truck. \_\_\_\_\_
- 11) Let's have a carnival theme party. \_\_\_\_\_
- 12) Let's have party at the pool. \_\_\_\_\_
- 13) We could sell Stanford sweatshirts and pants. \_\_\_\_\_
- 14) It's important that everyone knows about the party. \_\_\_\_\_
- 15) The different floors could compete against each other. \_\_\_\_\_
- 16) Why don't we give out visors? \_\_\_\_\_
- 17) Maybe we could give prizes to the participants. \_\_\_\_\_
- 18) Let's design and sell some T-shirts. \_\_\_\_\_
- 19) It's important that we have enough funding. \_\_\_\_\_
- 20) Maybe we could have a party on campus. \_\_\_\_\_
- 21) Why don't we organize games like a balloon toss? \_\_\_\_\_
- 22) Why don't we give out free pizza? \_\_\_\_\_
- 23) All the floors could contribute money. \_\_\_\_\_
- 24) Let's reserve a section together in the stands. \_\_\_\_\_





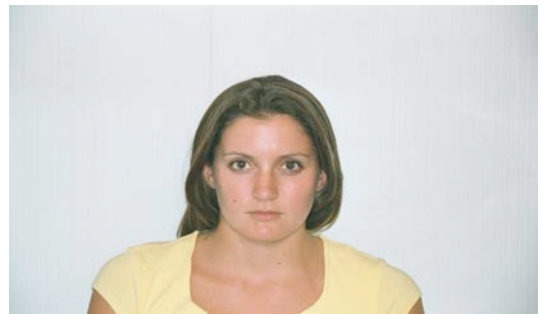
ROBERT



SCOTT



CAITLIN



BETH



JEFFREY



NICK



JANE



SARAH

## **APPENDIX 4**

### **Computerized Questionnaires**

#### **A.4.1 Round One Questionnaire**

1. How important to you was it that your group obtained correct answers?  
(Not at all important to Highly important)
  
2. How much attention did you pay to your partner's initial choices?  
(I paid no attention to my partner's initial choice to I paid considerable attention to my partner's initial choice)
  
3. How accurate were your partner's initial choices?  
(My partner's initial choices were never accurate to My partner's initial choices were always accurate)
  
4. How accurate were your initial choices?  
(My initial choices were never accurate to My initial choices were always accurate)
  
5. How often did you change your initial answer to go along with your partner?  
(I always changed my initial answer to I never changed my initial answer)
  
6. How much contrast sensitivity ability do you think you have?  
(No Contrast Sensitivity ability to High Contrast Sensitivity ability)
  
7. How much contrast sensitivity ability do you think your partner has?  
(No Contrast Sensitivity ability to High Contrast Sensitivity ability)
  
8. How frustrated were you during the study?  
(Very frustrated to Not at all frustrated)
  
9. How competent do you think the experimenter was?  
(Very competent to Not at all competent)

Note: Questions 8 and 9 were only asked after the second round of the CST.

#### **A.4.2 Ambivalent Sexism Inventory Items**

Below are a series of statements concerning men and women and their relationships in contemporary society. Please indicate the degree to which you agree or disagree with each statement by using your mouse to move the slider along the scale between Disagree Strongly and Agree Strongly.

1. No matter how accomplished he is, a man is not truly complete unless he has the love of a woman.
2. Many women are actually seeking special favors, such as hiring policies that favor them over men, under the guise of asking for "equality".
3. In a disaster, women ought to be rescued before men.
4. Most women interpret innocent remarks or acts as being sexist.
5. Women are too easily offended.
6. People are not truly happy in life without being romantically involved with a member of the other sex.
7. Feminists are seeking for women to have more power than men.
8. Many women have a quality of purity that few men possess.
9. Women should be cherished and protected by men.
10. Most women fail to appreciate fully all that men do for them.
11. Women seek to gain power by getting control over men.
12. Every man ought to have a woman whom he adores.
13. Men are incomplete without women.
14. Women exaggerate problems they have at work.
15. Once a woman gets a man to commit to her, she usually tries to put him on a tight leash.
16. When women lose to men in a fair competition, they typically complain about being discriminated against.
17. A good woman should be set on a pedestal by her man.

18. Many women get a kick out of teasing men by seeming sexually available and then refusing male advances.
19. Women, compared to men, tend to have a superior moral sensibility.
20. Men should be willing to sacrifice their own well being in order to provide financially for the women in their lives.
21. Feminists are making unreasonable demands of men.
22. Women, as compared to men, tend to have a more refined sense of culture and good taste.

Hostile Sexism Score = Items 2, 4, 5, 7, 10, 11, 14, 16, 18, and 21

Complementary Gender Differentiation Score = Items 8, 19, and 22

Heterosexual Intimacy Score = Items 1, 6, 12, and 13

Protective Paternalism = Items = 3, 9, 17, and 20

[Source: Glick and Fiske (1996); Glick et al (2000)]

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