

THE IMPORTANCE OF STEREOTYPE CONSISTENCY
OF OUTGROUP FAVORITISM AMONG WOMEN
UNDER VARYING CONDITIONS OF
PERCEIVED LEGITIMACY

By

Christina M. Almstrom

Bachelor of Arts in Psychology
University of Central Oklahoma
Edmond, OK
2002

Master of Arts in Experimental Psychology
University of Central Oklahoma
Edmond, OK
2004

Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
DOCTOR OF PHILOSOPHY
July, 2009

THE IMPORTANCE OF STEREOTYPE CONSISTENCY
OF OUTGROUP FAVORITISM AMONG WOMEN
UNDER VARYING CONDITIONS OF
PERCEIVED LEGITIMACY

Dissertation Approved:

Dr. John M. Chaney

Dissertation Adviser

Dr. Jennifer Callahan

Dr. Melanie Page

Dr. Carrie Winterod

Dr. A. Gordon Emslie

Dean of the Graduate College

ACKNOWLEDGMENTS

I would like to express my gratitude to Dr. John Chaney for his dedication, guidance, and patience. While he constantly cracked-the-whip he still found the time to make me smile through his unpredictable sense of humor. I am also appreciative of my committee members, Dr. Jennifer Callahan, Dr. Melanie Page, and Dr. Carrie Winterod for their time and effort. Additionally, I would also like to thank my friends and family for all of their support, love, and encouraging words which helped keep me afloat during what felt like an intense storm.

TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION.....	1
II. REVIEW OF LITERATURE.....	14
Historical Models of Hegemony.....	14
The Conflict Model.....	14
The Persuasion Model.....	16
Status Value Asymmetry.....	18
System Justification Theory.....	19
Evidence for Outgroup Favoritism and the Status Value Asymmetry Effect.....	22
Gender Stereotyping.....	24
Ambivalent Sexism.....	25
The Complementary of Agency and Communion.....	27
Victim Derogation and Victim Enhancement.....	29
The Fraud of Complementary-but-Equal.....	32
Perceived Legitimacy and Stereotype Threat.....	36
Perceived Legitimacy.....	38
Status Beliefs.....	38
System Justification and Perceived Legitimacy.....	40
Legitimacy Appraisal.....	42
In Summary.....	43
III. METHODOLOGY.....	45
The Present Study.....	46
Participants.....	46
Gender Identification.....	47
Experimental Procedure.....	48
Legitimacy Procedure.....	48
Stereotype Perception.....	49
Perception of Legitimacy.....	49
Dependent Measure.....	49
Hypothesis.....	50
Primary Hypothesis.....	50
Gender Identity Hypothesis.....	51

Chapter	Page
IV.RESULTS	52
Manipulation.....	54
Stereotype Perception	54
Legitimacy	54
Primary Hypothesis.....	55
Gender Identity Hypothesis	57
Exploratory Analysis	57
Analysis of Confident Status Markers	59
Analysis of the three highest and the three lowest status markers excluding Confident.....	60
V. Discussion	61
Manipulation Check.....	61
Primary Hypothesis.....	62
Gender Identity Hypothesis	62
Exploratory Analyses.....	63
Interpretation.....	63
System Justification Theory.....	63
Stereotype Threat	66
Strengths	67
Limitations	68
Future Research	68
REFERENCES	70
APPENDICES	78

LIST OF TABLES

Table		Page
I.	Legitimacy Stereotype Perception x Legitimacy Condition Means and Standard Deviations.....	95
II.	Legitimacy Manipulation Means and Standard Deviations.....	96
III.	Legitimacy x Status Domain x Sex Means and Standard Deviations.....	97
IV.	Legitimacy x Status Domain Means and Standard Deviations for Women – Men Difference Scores.	98
V.	Legitimacy x Status Analysis of Variance for Women – Men Difference Scores.....	99
VI.	Correlation Between Gender Identification and Status Domain x Legitimacy Condition.....	100
VII.	Legitimacy x Status Domain Means and Standard Deviations for Women – Men Difference Scores Using the Four Highest and Lowest Status Traits.....	101
VIII.	Legitimacy x Status Analysis of Variance for Women – Men Difference Scores Using the Four Highest and Lowest Status Traits.....	102
IX.	Means and Standard Deviations for Women – Men Difference Scores Using Confident, the Highest Status Value Trait	103

X. Legitimacy x Status Domain Means and Standard Deviations for Women – Difference Scores Using the Three Highest and Lowest Status Traits Excluding *Confident*.....104

XI. Legitimacy x Status Analysis of Variance for Women – Men Difference Scores Using the Three Highest and Lowest Status Traits Excluding *Confident*..... 105

LIST OF FIGURES

Figure	Page
I. Primary hypothesis for mean difference scores (Women – Men) across Status Domains and Legitimization conditions.....	106
II. Stereotype perception by question: Question 1 “Do you think men have greater success than women in math and science?” Question 2 “Do you think there is a genetic reason for the differences between men and women in math and science?” Question 3 “Do you think the differences between men and women in math and science result from their past experiences rather than genetics?”.....	107
III. Legitimacy manipulation by question: Question 1 “Do you think these success differences are fair or unfair?” Question 2 “Do you think these differences are just or unjust?” Question 3 “Do you think these differences are legitimate or illegitimate?”.....	108
IV. Mean ratings for men and women on status relevant and status irrelevant items across conditions of legitimacy.....	109
V. Mean difference scores (Women – Men) for status relevant and status irrelevant items across conditions of legitimacy.....	110
VI. Ratings from all participants used to compare the stereotypes for men and women relative to the normed value of the trait for achieving status.....	111
VII. Mean difference scores (Women – Men) using the four highest status relevant and four lowest status irrelevant items across conditions of legitimacy.....	112
VIII. Mean difference scores (Women – Men) using the highest valued status relevant trait, <i>Confident</i>	113

IX.	Mean difference scores (Women – Men) using the three highest status relevant items excluding Confident and the three lowest status irrelevant items across conditions of legitimacy.....	114
X.	A comparison of the distribution of trait ratings for men and women examined by high and low, relevant and irrelevant, status quadrants....	115
XI.	A comparison of the congruence between the stereotypes for men and women with the hierarchical value of the trait for achieving status.....	116

CHAPTER I

INTRODUCTION

Legitimacy is “a psychological property of an authority, institution, or social arrangement that leads those connected to it to believe that it is appropriate, proper, and just” (Tyler, 2006, p 375). The influential power in legitimization lies in the consensual nature of subordinate groups to voluntarily and willfully support unjust inequalities due to a synthesized sense of obligation. More specifically, legitimization enables dominant groups to successfully fabricate unjust norms which are thereby implicitly internalized by subordinate groups creating an unquestioned sense of duty to accede. In order to gain a full appreciation of the subtle elegance with which legitimization orchestrates intergroup relations one must have basic conceptual understanding of its derivative foundational theories.

Cultural hegemony, as defined by Gramsci (1971) is a societal process that functions to legitimize and maintain status quo class relations through the persuasion of subordinate groups to internalize the dominant majority group’s values and beliefs. In emphasizing the importance of group-level legitimization of the status quo, Weber (1947) shifted the emphasis from social class to include race and ethnicity. Ridgeway and Berger (1986) further extended this reasoning to gender, recognizing the saliency of status beliefs as the mortar for an institutionalized societal hierarchy ascribing greater worth to men than women. Jackman (1994) in her influential book, *The Velvet Glove*, has argued

that persuasion rather than conflict best describes gender hegemony and, in its modern form the use of subtle power to subjugate women has created an ambivalent alliance between men and women characterized by idealized, conditional, and coercive love.

Nowhere is this ambivalent alliance more apparent than in the phenomenon of outgroup favoritism, or the tendency of subordinate group members to over-value the traits of the dominant group, relative to their own. Ingroup favoritism, resulting from one's social-identity emerging from entwined self- and group-identity, is adequately explained by social identity theory (Tajfel & Turner, 1986). But, as Schmader, Major, Eccleston, and McCoy (2001) point out, the prediction of protecting self-esteem through ingroup favoritism neglects the importance of the relative social status of the comparison group. If the comparison group is of higher status than the ingroup, outgroup favoritism is often observed. Even when endorsement of outgroup bias values results in detrimental economic and social outcomes for lower class group members. Jost and Banaji's (1994) theory of system justification was formulated to explain the paradox of outgroup favoritism. The simultaneous devaluing of traits which are characteristic of the lower status ingroup by lower status group members and the valuing of traits characteristic of a higher status group is succinctly described as status value asymmetry. To explain this effect, Jost and Banaji reasoned that ego, group, and system justifications are congruent for higher status groups, resulting in no ideological dissonance between what works best for me, my group, and the larger system; they are the same. However, for lower status group members these self, group, and larger system motivations are often at odds. Interestingly, they are frequently resolved in favor of the larger system's values at the expense of individual or ingroup interests.

In the context of gender hegemony this means that for men there is congruence between larger system values and the values and beliefs that benefit them. For men, these beliefs and values appear to be universally applicable to all people. Not so for women. Because of this disparity, system justification theory predicts that women as a group have a need to reduce ideological dissonance by devaluing domains in which they are stereotyped and concede preferential value for male stereotypes. For example, at a systems level of analysis depressed entitlement among woman, that is, assessing themselves as deserving less pay than men, is viewed as the reduction of ideological dissonance at the expense of self- and group-esteem. Some have suggested that this effect is best described as internalized inferiority (Major, 1994; Pelham & Hetts, 2001; Jost, Banaji, & Nosek, 2004) and explains why a significant minority of women fail to support equal rights for women and continue to endorse economic inequity as legitimate and even necessary (Jost, 1997; Jost, Pelham, Sheldon, & Sullivan, 2003).

Hegemony in any form could not exist without stereotyping. However, because of the sexual interdependence of men and women for reproductive resources, the stereotyping which sustains gender hegemony is unique in comparison to that of class, race, or ethnicity. Hostile sexism relies on aggression and force but modern sexism relies on compensatory stereotyping, ascribing favorable gender-specific communal attributes such as caring, warmth, and nurturance to women. These same flattering socioemotional attributes are then used to stigmatize women and prejudicially undermine them on status-relevant achievement characteristics such as competitive, ambitious, and strong which are viewed as uniquely agentic rather than communal (Jost & Kay, 2005). Sexism is justified and maintained because each sex is seen as possessing its own unique strengths and

weaknesses which are believed to complement one another, synergistically creating a whole greater than the sum of its parts. Such a perception true or not, rationalizes the necessity of inequality. In support of this view, Jost and Kay (2005) presented experimental evidence that belief in agency and communal stereotypes for men and women respectively is synonymous with belief in the system because these differences are seen as necessary for the greater good.

Stereotype threat among women with regard to math and science ability provides an example of modern sexism to the extent that it can be explained as resulting from internalized inferiority. The experience of stereotype threat among women for example, implicitly informs attitudes regarding status values which derogate women and contributes to stigmatization, further perpetuating sexist status beliefs (Schmader, Johns, & Barquissau, 2004; Smith, 2004). Although there is no direct evidence linking the perceived legitimacy of status differences to stereotype threat, there is indirect evidence that this might be so. Women who tend to endorse gender stereotypes are more susceptible to interference effects in math performance. Further, Schmader et al. (2004) and Schmader (2002) have shown that gender identification seems to be a crucial moderating variable in this process. Dar-Nimrod and Heine (2006) observed an increase in math performance when the legitimacy of genetically determined math performance differences between men and women was discredited. From the existing literature we know that status beliefs and their perceived legitimacy are pivotal in sustaining gender discrimination. It has been shown that status beliefs regarding gender are uniquely hegemonic because they stereotype men using status relevant achievement characteristics and women with status irrelevant socioemotional characteristics. The end product being

simultaneously valuing women for their communal traits and disadvantaging them in comparison to men who are seen as more agentic. It is also known that perceived legitimacy has a direct effect on performance under conditions of stereotype threat. What is not known, and the problem examined in the current study, is whether the manipulation of perceived legitimacy directly affects the appraisal of status beliefs that sustain the stereotypes for status relevant achievement and status irrelevant socioemotional characteristics for men and women, respectively. Specifically, we know that the performance of women under these conditions is directly affected by perceived legitimacy, but do their status beliefs regarding the agentic and communal stereotypes for men and women change in a corresponding fashion? The current experiment is designed to answer this question by first exposing women to stereotype consistent information regarding math and science ability under control, legitimate, or illegitimate conditions and then examining the perception of female participants regarding achievement and socioemotional traits relative to men and women.

An extensive review of the literature, with a special emphasis on the methodology of crucial experiments influencing the design of the current study, is provided in the following chapter. To provide a historical perspective, literature on conflict models of hegemony are contrasted with the persuasion model to better understand why sexism has not been recognized as similar to other forms of subjugation. This is followed by a review of representative research on status value asymmetry to explain how an increasing understanding of ingroup favoritism led to the paradoxical finding of outgroup favoritism and how system justification theory uniquely predicts the phenomenon of status value asymmetry. Research on gender stereotyping is reviewed to provide a closer examination

of modern sexism and the reliance on compensatory stereotyping as a way of maintaining subjugation. The relationship between stereotype threat and the belief in the legitimacy of status differences between men and women is explored by reviewing a representative sample of experiments that focus on performance deficits in math and science. The focus of the current study is not on performance deficits resulting from stereotype threat but rather on the importance of perceived legitimacy in sustaining gender stereotypes and outgroup favoritism which will be the main focus of the literature review.

CHAPTER II

REVIEW OF THE LITERATURE

Legitimacy has been defined as “a psychological property of an authority, institution, or social arrangement that leads those connected to it to believe that it is appropriate, proper, and just” (Tyler, 2006, p 375). It is because of legitimacy that subordinate groups feel a sense of obligation to the system and as a consequence internalize and conform to the norms, rules, and beliefs hierarchically constructed to profit the dominant group. While the study of legitimacy is rather new to empirical psychology, it is integral to understanding social and political systems (Jost & Major, 2001). Because legitimization is so tightly interwoven with the very fabric of social arrangements a basic understanding of how it functions to justify these systems is absolutely essential.

Historical Models of Hegemony

Theories of hegemony emphasize the importance of consensus as opposed to dominance by force. As such hegemony provides a theoretical context for understanding the current study which concerns one of the by-products of hegemony, namely that the dominant group's values and beliefs come to be over valued by both the dominant and subordinate groups. Historically models of hegemony have focused on the sustained conflict between groups as necessary to maintain the status quo. More recently, however,

theories of hegemony have shown how conflict models are inadequate in general and in particular for an understanding of modern sexism.

The Conflict Model. To provide an understanding of why sexism has only recently been recognized as similar to other forms of subjugation it must be realized that the historical models of hegemony emphasized power and hostility as central to intergroup relations. Even though legitimization was important and necessary, the conflict perspective made it impossible to conceive of coercive persuasion and benevolent sexism. It is now realized that conflict and persuasion are entwined in perpetuating stereotypical gender roles which are endorsed and maintained by both men and women.

Conflict models of hegemony have been substantially influenced by the theories of Machiavelli and Marx which assert that as a consequence of being able to structure a socioeconomic system with an inequitable distribution of economic benefits the majority group is able to legitimize their values and beliefs by orchestrating the intellectual and cultural content in education, religion, and communication, thereby controlling the production of ideas available for discourse. Through seemingly innocuous, everyday processes the majority group's ideals are legitimized as cultural narratives and mask potential group-based (e.g., gender) inequities, creating the appearance of a fair and just social system.

Max Weber (1947) was one of the first to stress the importance of group level legitimization as a binding societal force which sustains the status quo. In doing so he also shifted the emphasis from class to race and ethnicity as the primary sources of societal conflict and hostility. Ridgeway and Berger (1986) further extended this reasoning to gender recognizing the saliency of status beliefs as a force for legitimization

which is institutionalized as a social hierarchy ascribing greater worth and competence to men than women. The idea of conflict as essential to dominance was further eroded by Durkheim who regarded hostility as the “exception to the rule” of consensus and harmony, laying the foundation for understanding the benevolence inherent in modern sexism.

Perhaps the best known and most influential theory of cultural hegemony comes from Gramsci (1971) who described hegemony as dominance achieved and maintained through the persuasion of the subordinate group to internalize majority group values and beliefs. Gramsci’s theory emphasizes the fact that consent is not automatic and that ideological domination must be manufactured (Zelditch, 2001). With regard to sexism in particular it cannot be emphasized enough that hegemony functions like an ambient light, just below the surface and subtle enough to exist without distinction. This makes it all the more powerful and effective because the concomitant internalization of inequity is accomplished largely without awareness. The result is a *false consciousness*, or failure to recognize exploitation, (Marx & Engels, 1946/1970) that legitimizes the dominant-subordinate relationship, which would not be possible without the willing endorsement and participation of the subordinate group in this process.

The Persuasion Model. Conflict models of hegemony have gradually seceded to models emphasizing harmony and the maintenance of the status quo through the inculcation of status beliefs; however, control of resources remains the distinguishing feature of both. Mary Jackman (1994) in her influential book, *The Velvet Glove*, has argued that control of resources is expressed differently for class, race, and gender subjugation with economic, status, and power being configured differently for each.

Classes are distinguished through economic divisions, while race prejudice is primarily status driven, and in gender relations inequality is sustained by power, the power to control sexual access and sexual reproduction. That is to say Jackman is arguing that the biology of sexual selection theory is at the core of gender hegemony.

The essence of Darwinian sexual selection theory in nature is realized through male/male competition and female choice (Darwin, 1871). I say in nature because much of what we see in human culture is an aberration derived from this basic biological principle. In the natural reproductive environment of sexual creatures eggs are scarce and valuable. Females are their guardians and designed to be selective in choosing the best possible genetic male donor. If a male's genetic characteristics enable him to thrive in an environment he will have developed beautifully; healthy, symmetrical, and vigorous. On the other hand poor genetic fitness will result in malnourishment, parasite infestation, and less than attractive "plumage." Male-male competition through courtship display behavior and physical contests will produce hierarchies of fitness, a menu from which females can order. Much is at stake for the female. Her very life hangs in the balance because of the risks of reproduction and no less importantly the genetic survivability of her offspring.

This is in the natural environment. When we superimpose culture a very different picture can emerge. Much of human culture can be understood by considering the fact that all animals are fear driven and as a result humans have an almost obsessive need to control their environment (Geary, 2006). Among apes sexual dimorphism is a mate guarding strategy whereby a male can control access to the prized female through physical domination. Jackman makes the point that human culture is a manifestation, an

exaggeration, of this basic principle. At the core of hostile sexism is the desire to control women for the purpose of reproductive success. Hostile sexism is a cultural attempt to negate female choice, to reduce females to a resource that can be controlled like any other resource.

A study of recorded history reveals that with neutralized female choice what remains is hyper male-male competition for access to this resource. War, war, and more war is a genetic battle for resources; chief among them, access to females. In one of the earliest novels, *The Iliad* by Homer, The Greek general commands his troops, “Don’t anyone hurry to return homeward until after he has lain down alongside a wife of some Trojan” (p. 40, Gottschall, 2007). When Achilles examines his life as a warrior he says, “I have spent many sleepless nights and bloody days in battle, fighting men for their women.” (p. 40, Gottschall, 2007). At the biological level of analysis hostile sexism results from fear based physical domination by males of females resulting in exaggerated male-male competition. An aberrant reproductive strategy such as this one, one designed to “out-wit” female choice as a central part of the equation cannot, in a biological time scale, long prevail. As with the economics of class structure, status and race, the use of power to subjugate females to males has in modern times become more civilized, creating an ambivalent alliance characterized by idealized, conditional, and coercive love (Jackman, 1994).

Status Value Asymmetry

Understanding hegemony as a social binding force highlights the fact that one of its by-products is the preferential valuing of the higher status group. That is, both the dominate and the subjugated group over-value the higher status group’s values and

beliefs, a phenomenon known as status value asymmetry. The current study is not about status value asymmetry per se, rather it seeks to examine whether or not women preferentially value the status value traits traditionally ascribed to men as a by-product of status value asymmetry. To better understand why this might be so an exposition of the status value asymmetry literature is necessary.

A major question in the literature over the last decade has been, how gender hegemony is expressed relative to ingroup and outgroup favoritism. More specifically, how stereotypical attributes are ascribed and sustained based upon gender. There is substantial evidence for ingroup favoritism relative to those domains where individuals excel and for the devaluing of domains where they fare poorly (Tesser & Paulhus, 1983; Crocker & Major, 1989). However, as Schmader, Major, Eccleston, and McCoy (2001) point out, the prediction of protecting self-esteem through ingroup favoritism ignores two important variables; namely, the relative social status of the comparison outgroup and the perceived legitimacy of the status hierarchy.

An increasing understanding of ingroup favoritism from the perspective of social identity theory (Tajfel & Turner, 1986) led to the paradoxical finding of outgroup favoritism. When the status hierarchy is perceived as just and when the domains in which the higher status group excels are valued in support of the greater good the subordinate group tends to value those domains in preference to their own. In its simplest terms the devaluing of traits characteristic of lower status groups and the valuing of traits characteristic of the higher status groups is succinctly described as status value asymmetry. The status value asymmetry effect and has been explained by system justification theory as formulated by Jost and Banaji (1994).

System Justification Theory. Enlightened by the paradox of outgroup favoritism (Jost, 2004) Jost and Banaji (1994) reasoned that ego, group, and system justifications are in alignment without conflict for high status group members; however, for low status group members the motivation to believe in the system is often in conflict with self- and group-esteem motives resulting in dissonance. From the perspective of gender hegemony this means that for males there is congruency between group-based values (what works best for them) and the larger system values; they are the same. However, for females there is an inherent incongruency between what is best for their self-esteem and group-identity and the beliefs and values of the larger system. As a result women often construe their social standing in ways that simultaneously devalue dimensions on which they excel and concede preferential value for domains in which males excel. This need to defend existing social hierarchies in order to reduce ideological dissonance leads to the prediction that women are less likely to attribute inequitable outcomes to discrimination, but rather to their own personal inadequacy (Major, McCoy, Schmader, Gramzow, Levin, & Sidanius, 2002). In this way the perception of women is in alignment with that of men and serves to maintain societal stability (Major, 1994; Major & Schmader, 2001).

Justifying the system is proposed as the reason for depressed entitlement among women (the view that they deserved less pay than men) and elevated entitlement among men (the view that they deserve more pay than women). This explains why some men and women did not support the equal rights amendment and their endorsement of economic inequality as legitimate and necessary (Jost, 1997; Jost et al., 2003). Group identity in relation to depressed entitlement has been extensively researched (Major,

1994; Pelham & Hetts, 2001) and is best explained as internalized inferiority which is necessary in order to maintain a belief in the system as just (Jost, Banaji, & Nosek, 2004).

Of particular relevance for understanding the depressed entitlement outcome in relation to broader social context Jost and Hunyady (2002) review and integrate empirical evidence derived from 18 specific predictions of system justification theory and conclude that the internalization of inequality serves a palliative (soothing without effecting a cure) function reducing uncertainty, anxiety, guilt, and perhaps more significantly cognitive dissonance, for both women and men. The fact that men also derive a palliative benefit from believing in the legitimacy of inequality for the greater good is often overlooked (Chen & Tyler, 2001). Kay, Jimenez, and Jost (2002) argue that the rationalization of the status quo is inevitable, and often accomplished using implicit stereotypes to justify inequity, which is also a circumstance uniquely characteristic of modern sexism (Jost & Burgess, 2000).

In system justification theory rationalizing the status quo is explained in term of the reduction of cognitive dissonance. Jost (2001) reasoned that in order to reduce ideological dissonance and maintain a belief in the legitimacy of the system, members of subordinate groups who suffered the greatest disadvantages would experience the greatest dissonance and as a consequence the strongest motivation to believe the system to be just. This is supported by the research of Jost, Pelham, Sheldon, and Sullivan (2003) who found differences both within and between ethnic groups in five survey studies designed to test the hypothesis that those who are the most disadvantaged by the system are also those most likely to justify the system by supporting and defending its legitimacy. Their first survey sought to examine the influence of income, race, and education on

individuals' perceived willingness to limit criticism of the government. They found support of the prediction of greater willingness on the part of low-income individuals to limit personal freedom for the good of the larger group. With regard to race it was found that African Americans were more likely than European Americans to support such limitations. It was also found that with income controlled the less well educated were more defensive of the system. The second survey showed that less affluent Latinos were significantly more trusting of government with increased poverty accompanying increased belief in the government being run for the benefit of all. Survey three found an inverse relationship between income and the belief that large differences in pay are necessary, the lower the income the stronger the belief. African and European Americans living in the Northern and Southern United States were compared in the fourth survey where it was found that the more disadvantaged the group the greater the likelihood that they would endorse a belief that success accompanies hard work. The final survey in this series revealed that individuals with strong beliefs in a meritocracy are also more likely to express satisfaction with their own economic situation. Taken together these studies provide convincing descriptive evidence for outgroup favoritism.

Evidence for Outgroup Favoritism and the Status Value Asymmetry Effect. With specific reference to the mechanics of outgroup favoritism and the resulting status value asymmetry Jost and Burgess (2000) experimentally manipulated group status in a laboratory situation by providing participants with bogus statistics regarding socioeconomic success of alumni from their university in comparison to a rival university. In this way participants were led to believe that they were either higher or lower in status. They also examined how status relevant achievement traits and status

irrelevant socioemotional traits were differentially ascribed to groups as a function of their status. The results revealed the students assigned to the high status condition evidenced strong ingroup favoritism on the achievement traits. The opposite pattern was observed for students assigned to the low status condition, that is, they rated the outgroup as higher on the achievement traits. In addition, outgroup favoritism was found to vary directly as a function of the perceived legitimacy of the status hierarchy. Using participant ratings there was a positive correlation between perceived legitimacy and ingroup favoritism on the achievement traits in the high status condition. In the low status condition increased perceived legitimacy was associated with both lower ingroup favoritism and higher outgroup favoritism on these same achievement traits, an excellent illustration of status value asymmetry and the importance of perceived legitimacy. Jost, Pelham and Carvalho (2002) provide additional support for the hypothesis that reducing ideological dissonance is the crucial variable controlling outgroup favoritism. Using the *Implicit Association Test* (Greenwald, Nosek, & Banaji, 2003) as a dependent measure they showed that students from a high status university exhibited significant ingroup response bias. Students from a low status university, however, showed no such bias. In a separate study using unobtrusive behavioral measures Latinos and Asian Americans showed significant outgroup favoritism by choosing White partners to interact with rather than members of their own group. Data from a third study revealed that parents disproportionately name their sons after their fathers compared to naming their daughters after their mothers and were more likely to publish birth announcements for boys than girls, suggesting that they perceive males as being of higher status than females. It is important to note that these results were obtained using implicit behavioral

measures rather than self-report measures, which have sometimes been criticized as susceptible to contamination by social desirability and compliance effects. From the perspective of ego or group justification these results make little sense and can only be explained in terms of the system justification motive and the need to reduce ideological dissonance.

The foregoing is only a small sample of the abundant evidence showing that outgroup favoritism, and status value asymmetry as a consequence, is only possible when status inequality is believed to be just and necessary to sustain the system. Of particular relevance for understanding modern sexism is the work of Brenda Major and her colleagues (Major, et al., 2002) who demonstrated that a belief in the ideology of mobility (i.e., that status boundaries are permeable for individuals) enhances perceived legitimacy and reduces the attribution of negative outcomes to discrimination.

Gender Stereotyping

Part of the reason for the importance of legitimization derives from our need for assurance that our natural tendency to discriminate is accurate. Categorical learning, learning to generalize within and discriminate between classes of stimuli, is a basic adaptive behavior evidenced by all animals. Being able to recognize sameness and difference is essential to survival in a world of variability. Stereotyping is a variety of categorical learning, an ignoring of differences in the service of sameness and disregarding sameness to reinforce difference. Behaving categorically is natural and necessary, but for individuals it can have undesirable consequences in the form of discrimination, prejudice, stigma, inhumanization, and even genocide.

The onus of stigmatization results from the intersection of group and personal identity, where the individual derives self expectancies in accordance with the categorical sameness used to define their group. Crocker, Major, and Steele (1998) building on the classical work of Goffman (1963) define stigmatization as a process resulting from the possession of a devalued characteristic associated with a social identity. In this view stigmatization cannot be separated from power, status, and discrediting dispositional attributions (Major & O'Brien, 2005). Some of the evolutionary reasons proposed for the apparent naturalness of exclusion through stigmatization include social exchange and the need to trust, health and fitness for reproduction, and outgroup exploitation for ingroup gain (Major & O'Brien, 2005). Research on cognitive processing has shown that the perpetuation of a stereotype depends on confirmation biases and the selective encoding of and retrieval of memories (Fiske & Taylor, 1991; Smith, 2004).

The most insidious feature of stereotypes is that they are tautological and for this reason self sustaining. Stereotypes are the received views of one social group toward another. They are functional representations of social dominance, most often used to legitimize inequality. Stereotypes come in many guises the most identifiable being race, gender, and ethnicity. Others are more subtle. Steele (1997) uses examples of gang members, or skateboarders, social class, or ageism, for example older adults wondering if memory lapses will be interpreted as Alzheimer's disease. We all can, and will, be stereotyped in various ways and for this reason we are all stereotype vulnerable and this vulnerability is always relative to the situation.

Ambivalent Sexism. Hegemony in any form could not exist without stereotyping; however, the stereotyping which accompanies gender hegemony is unique in comparison

to that of class, race, or ethnicity. To understand why this is so, requires a closer examination of modern sexism and the reliance on compensatory stereotyping as a way of maintaining subjugation.

Swim, Aikin, Hall, and Hunter (1995) point out that the assessment of sexism, as with racism, has become increasingly difficult because of societal pressure against its overt expression, which is itself an example of hegemony as described by Gramsci. That is to say, there is an increasing need for the appearance of benevolence in order to persuade women to support a hierarchical system. To support this view they present data showing that modern sexism, sometimes called aversive sexism or ambivalent sexism, unlike old fashioned or hostile sexism is characterized by: 1) the denial of continued discrimination believing that discrimination against women is a thing of the past, 2) antagonism toward women's political and economic aspirations, and 3) resentment regarding policies designed to help women in the workplace or academics.

Gender stereotyping in modern sexism is particularly subtle and all the more egregious in that women are ascribed favorable gender specific attributes such as caring, gentle, and kind and these same flattering socioemotional attributes are used prejudicially to undermine status relevant achievement attributes. Take for example the situation many women find themselves in when contesting for child custody. If they are described as a "good mother" it can be argued that they would be unable to provide for the child as sufficiently as the father because they lack the attributes necessary for achievement in the competitive workplace; and if they are described as achievement oriented they are then without the prescribed socioemotional attributes that characterize being a good mother.

Glick and Fiske (2001) report data from 15,000 men and women in 19 nations and suggest that old fashioned and modern sexism are complementary with regard to gender inequality; both being pathways to the same end. As with old fashioned sexism, modern sexism is a hegemonic ideology that offers protection and affection to women for conforming to traditional roles. Their data indicate that, whereas women in comparison to men reject old fashioned sexism, they often endorse modern sexism resulting in an ambivalent alliance justifying gender inequality.

The Complementarity of Agency and Communion. Gender hegemony is itself subservient to the demand characteristics of the larger system within which it is nurtured and sustained. The major impact of the industrial revolution was the inevitable emergence of a class system where capitalist property owners control societal resources and the working class who have no resources and nothing to sell but themselves. Unable to be self-sustaining in this new system more and more men were recruited out of the home to sell their labor in the service of those who had surplus resources. A similar economic necessity has emerged for women in recent times. As with men this means greater independence, that is, less dependence on the traditional family in order to survive, but it also means greater reliance on the system to provide access to resources and this is where the path for women as workers becomes a much steeper one. The reason for this is because of the gender stereotypes justifying the system where women are viewed as more motherly than professional, more nurturing than competitive, creating a no-win double bind.

Building on the Stereotype Content Model (SCM) Cuddy, Fiske, and Glick (2004) sought to test the hypothesis that because of ambivalent sexism, which directs hostility

towards professional women and benevolently lauds homemakers, women are either respected or liked but not both. The SCM differentiates groups according to two basic dimensions, competence and warmth, which creates four unique stereotype patterns. Low or high in competence crossed with low or high in warmth.

The two diagonal groups, low warmth/low competence and high warmth/high competence, are easily conceptualized as eliciting the intergroup emotions of contempt (low/low) or admiration (high/high). Groups seen as low in competence and low in warmth are viewed as weak, eliciting the emotion of contempt. Groups seen as high in competence and high in warmth are seen as strong and are admired.

The off diagonal groups, low warmth/high competence and high warmth/ low competence, are referred to as mixed valance groups. These mixed message groups are uniquely described by SCM as eliciting more complex emotions which only now are coming to be better understood in terms of the prejudice they foster. Groups low on competence but high on warmth, such as the elderly, the disabled, or housewives elicit pity, an emotion reserved for those whose lot in life is uncontrollable, though no fault of their own, it is just the way things are. The professional woman falls into the fourth group, high competence and low warm. As with the rich, the professional woman is often respected because of her competence, but not likable because of her low warmth. SCM describes this category as eliciting the emotion of envy. Interestingly, this is an emotion that often used to describe the feelings elicited by higher status groups like the very rich.

To test their hypothesis that professional mothers are discriminated against in comparison to childless working men or women and working fathers, Cuddy et al. (2004) asked for participant's impressions of various management consultant profiles. They

were presented with three irrelevant filler profiles along with four profiles for women or men who were either parents or childless and then rated the individuals described for competence relevant traits (capable, efficient, organized, skillful) and warmth relevant traits (good-natured, sincere, warm, trustworthy).

They obtained results confirming that men gain in perceived warmth when described as fathers without losing perceived competence. When women are described as mothers they gain in perceived warmth but lose perceived competence. This suggests that for women these are mutually exclusive dimensions. In SCM terminology men can be admired, but for women the choice is between pity and envy. Perhaps a better word than envy might be resentment. Regardless, the consequence of gender stereotyping is that men can be respected for their competence and liked for their warmth, but for women being liked for their warmth comes with a price tag, a loss of respect for their competence.

The research of Cuddy et al. (2004) paints a clear picture of gender prejudice, one depicting a complex interdependence between men and women. As intimated by the phrase ambivalent alliance relationships between men and women have a dual nature because of power differences and mutual interdependence. In exploring this complementarity Jost and Kay (2005) showed that people tend to ascribe agency and thus achievement attributes to high status groups in general and men in particular and communion or socioemotional attributes to low status groups and women, suggesting that male and female stereotypes complement one another in sustaining inequality. Sexism is justified and maintained because each sex is seen as possessing strengths and weaknesses which are said to complement one another. A basic principle of complementarity is that

the whole cannot exist without the synergy of its parts, a view which promotes believing the system to be beneficial when in fact its function is hegemonic (Kay & Jost, 2003).

Victim Derogation and Victim Enhancement. Consonant with the belief that the social system in which individuals function is fair and just is the belief that by and large people get what they deserve, that is, blaming the victim, an example of what Kay, Jost, and Young (2005) refer to as victim derogation. In its benevolent forms they argue that victim derogation is complemented and reinforced using victim enhancing stereotypes to assuage the stigmatization resulting from the ascription of unfavorable traits.

Blaming victims and lionizing winners is well recognized as a way of justifying the status quo, but victim enhancement and down grading winners can be equally effective. Kay et al. (2005) argued that these strategies are not contradictory, but complementary, with the perceived causal link between trait and outcome determining which will be used to sustain status beliefs. For example, intelligence as a trait is seen as relevant for achieving status and is used to enhance *winners* whereas physical attractiveness is not as readily perceived as causally related to status outcome and can be used to enhance victims and down grade winners. *Losers* are by implication less intelligent and can be described as physically attractive and still be of low status. Kay et al. (2005) hypothesized that these are simply alternative routes to system justification and proposed to test this prediction in two experiments using system threat and stereotype activation paradigms.

In the first experiment Kay et al. (2005) used a system threat manipulation to increase the motivation to justify the system and then examined the effects of this on derogation and enhancement. To manipulate system threat, participants read bogus essays

which described the United States as either at a low point or well off in comparison to other countries. Then, in what participants believed to be an unrelated study they were asked to rate two different target groups, the powerful and the obese. To test the hypothesis that causal relevance and outcome are determinants of the route to system justification they use the traits intelligent and independent (causally relevant) and happiness (causally irrelevant) for rating the powerful person; and the traits laziness and sociability for relevant and irrelevant causes of obesity. As expected high system threat to the United States produced both increased victim derogation on causally relevant traits and increased victim enhancement on irrelevant traits. More importantly for the complementarity hypothesis system threat resulted in the powerful being viewed as more independent and intelligent but *less happy* whereas the powerless were viewed as less independent and intelligent but *more happy*.

Kay and Jost (2003) had earlier shown that exposure to complementary stereotype exemplars (victim-enhancement: poor but happy and honest, rich but miserable and dishonest) reduces ideological dissonance while noncomplementary stereotypes (victim-derogation: poor but unhappy and dishonest, rich but happy and honest) implicitly activates concerns regarding the system as just, fair, and legitimate. The second Kay et al. (2005) experiment sought to demonstrate that these alternative strategies to system justification are functionally equivalent but depend on the presence of a causal link between the trait and the outcome. Kay et al. (2005) constructed situations where an essay described a causal link between intelligence and the outcome of wealth/poverty or the outcome of attractiveness/unattractiveness. As predicted when there was a perceived causal link between the trait and outcome (intelligence to wealth)

noncomplementary stereotyping (derogating the loser, elevating the winner) produced greater system justification; however, when there was a noncausal link (intelligence to attractiveness) complementary stereotyping (elevating the loser and downgrading the winner) produced greater system justification. In other words when things seem to make sense as they do with intelligence being necessary for wealth then blaming the victim is justified but when they do not make sense, i. e. intelligence being necessary for attractiveness then blaming the victim is not justified and it is necessary to enhance the victim instead. That is, victim blaming is congruent with system justification when there is a perceived causal link between the trait and the outcome but not if this connection is absent. The alternative route to system justification under these circumstances, i.e., when there is no connection between the trait and outcome, is victim enhancement. In the words of the authors, "... people seem impressively able to maintain twin system-justifying beliefs" (p. 245). The use of victim enhancement as an alternative route to system justification is crucial to understanding gender stereotyping and the importance of the perception of a causal link between trait and outcome warrants further investigation in the study of benevolent sexism.

In summary, victim derogating stereotypes support the belief in a just world while victim enhancing stereotypes increase system justification through the principle of what Kruglanski (1996) calls *equifinality*. The principle of equifinality states that different psychological routes to the same result are situationally determined. That is, different strategies are used in support of status beliefs maintaining the status quo depending on which is most effective under the prevailing circumstances. It seems reasonable to conclude that the principle of equifinality explains the decline of hostility and rise of

benevolence in modern sexism as it relates to the broader picture of gender hegemony. Because of the importance of legitimization to sustain the status quo, situational changes have necessitated that gender inequality be rationalized differently.

The Fraud of Complementary-but-Equal. Jost & Kay (2005) begin their article by quoting Sandra and Daryl Bem who point out that while the Supreme Court has declared separate-but-equal to be a hegemonic fraud it is unlikely that any court would ever make a similar declaration with regard to the gender hegemony that keeps women in their place, that there will never be a disavowal of complementary-but-equal. A belief in complementary-but-equal is at the heart of benevolent sexism. Because the stereotypes sustaining it are on the surface benign it can and often is consciously endorsed, but perhaps more significantly because they are benign it is easier for them to slip into the ambient unconscious and thereby more subtly shape thoughts and feelings (Bargh, Chen, & Burrows, 1996).

As Kay, et al. (2003) showed complementary stereotyping is dependent on a perceived causal link between the stereotypical trait and the consequence of stereotyping. For example, complementary gender stereotypes for men as agentic and women as communal are seen as interdependently reinforcing one another and functioning for the greater good. Jost and Kay (2005) sought to directly assess this hypothesis across three experiments, predicting that complementary stereotyping for men as more agentic and women as more communal would enhance system justification. They further reasoned that simply exposing people to complementary gender stereotypes (priming) would lead them to endorse gender specific inequality and have a more diffuse effect leading them to endorse the system as a whole, including its nongender related aspects.

The first experiment used questionnaires to manipulate exposure to specific stereotype content. Participants were first asked to complete one of four questionnaires. One contained agentic traits (assertive, competent, intelligent, ambitious, and responsible), another contained communal traits (considerate, honest, happy, warm, and moral), a third contained both the agentic and the communal traits, and the fourth was a control condition with no agentic or communal traits. On each questionnaire participants were asked to indicate whether the trait applied more to men or to women. In a follow up questionnaire all participants were given the systems justification scale used in the Kay and Jost (2003) experiment with the only difference being the items were modified to focus on gender inequality. The results indicated that for men support for gender inequality was consistently high and unaffected by exposure; however, for women activating communal gender stereotypes significantly increased their support for the existing system of inequality.

Experiment 2 (Kay and Jost, 2003) was designed to address a number of methodological issues which were potential confounds in Experiment 1 and to examine the effects of endorsement versus exposure as well as the effects of gender and stereotype content. This was accomplished using one of four conditions of exposure: (1) items from the Benevolent Sexism subscale of the Ambivalent Sexism Inventory (Glick & Fiske, 1996), (2) items from the Hostile Sexism subscale of this same instrument; (3) a mixture of benevolent and hostile sexism items, or (4) nonstereotypical items. Exposure or endorsement was manipulated by asking some participants the extent to which they agreed with the items and asking others to simply proofread the items for clarity. Following this treatment all participants were administered the Kay and Jost (2003)

diffuse measure of system justification scale. The data revealed comparable results for the activation of stereotypes leading to diffuse system justification either through incidental exposure or personal endorsement. Taken together these two experiments indicate that the activation of communal and benevolent stereotypes was sufficient to increase system justification while the activation of agentic and hostile stereotypes was not. The authors conclude that because men are already advantaged in comparison to women only victim enhancing stereotypes can be effective at increasing system justification by creating the illusion of complementary-but-equal.

If the agentic and communal stereotypes are truly complementary, that is, interdependent, and not simply supplementary and independent it should be possible to increase system justification by the devaluing of agentic traits to increase the value of communal traits in the same way that valuing communal traits was shown in the two previous experiments to served as a counterweight to agentic traits thereby increasing system justification. To test this prediction a situation was created where participants were first exposed to material suggesting that either the interpersonal communal skills of women lead to higher managerial status or the assertive agentic skills of men lead to higher managerial status. Participants were then exposed to stereotypes as in Experiment 2 for women as communal and men as agentic followed by the Jost and Kay (2003) measure of diffuse system justification. As predicted from the complementarity hypothesis, system justification increased in the condition where the communal traits of women are associated with being better managers just as it did in the condition where the agentic traits of men are associated with being better managers.

The experiments of Jost and Kay (2005) contribute to an understanding of gender hegemony in two important ways. First, they provide experimental evidence relating the activation and functioning of gender stereotypes directly to system justification as an outcome variable. Second, they provide evidence that gender hegemony depends on complementary agentic and communal stereotyping; and lastly, the procedures used demonstrate that gender stereotypes can be subtly but dramatically activated or primed through indirect exposure to stereotypical content. Once activated stereotypes serve as powerful contextual stimuli, for self and others, which do not need to be consciously recognized or endorsed to effect behavior. Stereotype threat is an example of this consequence.

Perceived Legitimacy and Stereotype Threat. Evaluating perceived legitimacy as necessary for stereotype threat performance decrements is relevant to the current study because a methodology is employed which exposes women to legitimate or illegitimate stereotype-consistent information using a stereotype threat protocol in order to examine outgroup bias. For this reason the stereotype threat research reviewed in this section is limited and focuses on gender identification and the importance of perceived legitimacy.

Stereotype threat among women with regard to math and science ability provides an example of modern sexist ideology to the extent that performance deficit in this area can be explained as resulting from internalized inferiority (Schmader, Johns, & Barquissau, 2004; Smith, 2004). If true then the experience of stereotype threat implicitly informs their default attitudes regarding status values which derogate women leading to a stigmatization which enhances benevolent sexism.

Although there is no direct evidence linking the perceived legitimacy of status differences to stereotype threat, there is indirect evidence that this might be so. Schmader (2002) has shown that women who tend to endorse gender stereotypes are more susceptible to interference effects in math performance. Additional support comes from Schmader, et al. (2004) who present evidence that gender identification seems to be a crucial moderating variable. They found no difference between the performance of men and women under nonthreat conditions; however, when performance was linked to stereotype threat women with high gender identification performed significantly worse than men and women with low gender identification, whose performance did not differ from that of men.

Dar-Nimrod and Heine (2006) used misinformation to substantiate or discredit the belief that math performance differentials between men and women are genetically determined. Their experiment was prompted by the turmoil resulting from the remarks of Lawrence Summers of Harvard University who said that a possible reason for women being under represented in the sciences is that women have a different availability of aptitude with regard to math. For Dar-Nimrod and Heine the question of innate differences in math ability was beside the point. They wanted to investigate how responding to the stereotype affects performance. In particular they wanted to see if the well documented self-fulfilling prophesy outcome from stereotype threat could be neutralized. Monterosso, Royzman, and Schwartz (2005) had shown that people respond to experiential accounts of the causes for behavior differently than they do to genetic accounts for the same behavior. Experiential explanations imply that the behavior is voluntary and controllable, and most importantly, that it can be changed. While genetic

explanations are viewed uncontrollable and predetermined, Dar-Nimrod and Heine reasoned if individuals have a shared genetic makeup and believe that there is a genetic cause for the stereotype then they are more likely to assume that the stereotype applies to them, making them stereotype vulnerable. On the other hand if they do not believe that the stereotype is genetic in nature but rather a result of previous experience then they would be more likely to believe that their experiences were different and the stereotype does not apply to them, thereby neutralizing their vulnerability and the threat imposed by the stereotype. Dar-Nimrod and Heine wanted to show that regardless of whether or not there are differences between the sexes in math ability the remarks of Lawrence Summers had the potential for perpetuating a belief which would prime stereotype vulnerability. Using essays that describe the math and science ability of men and women as being either genetically or experientially determined Dar-Nimrod and Heine demonstrate that the performance deficit resulting from stereotype threat can be mitigated by delegitimizing belief in the validity of the stereotype. They conclude that while Summers may have thought he was issuing a clarion call for more research on the biological nature of achievement differences what he did was perpetuate a prime for stereotype threat.

These data, along with data confirming the importance of legitimization for system justification strongly suggest that perceived legitimacy of gender stereotypes plays a crucial role in activating stereotype threat. It can be seen then that legitimization has a direct effect on performance, either enhancing or mitigating the interference effects of stereotype threat. There is also evidence that legitimization is crucial for system justification because of the importance of status value beliefs.

Perceived Legitimacy

Status Beliefs. As we have seen, status beliefs regarding gender are more than ingroup favoritism; they are uniquely hegemonic because they stereotype men using status relevant achievement characteristics and women with status irrelevant socioemotional characteristics (Conway, Pizzamiglio, & Mount, 1996; Glick & Fiske, 2001). In this way status beliefs socially devalue women and at the same time bind them to a collective social reality. This is accomplished not only by persuading them to accept that they are less competent, but also that they are distinctively better in other compensatory ways (Eagly, 1987). Status beliefs sustain gender hegemony by simultaneously disadvantaging women and valuing them; thereby justify their lesser position in society. One behavioral indication of this are data indicating that people in general self-select social roles for themselves that support the status quo, thereby legitimizing the system (Sidanius, van Laar, Levin, Sinclair, 2003).

What this means is that status beliefs are consensual and therefore assume a sense of legitimacy by being socially validated. This objectifies them as inevitable social facts that must be dealt with, regardless of the negative impact on the individual or their social group (Berger & Luckmann, 1967). It is primarily this social validity element that legitimizes status beliefs and elevates them to such a level that they are bestowed moral value, capable of encouraging behaviors that support them and constraining behaviors that dissent from them. Burgess and Borgida (1998) point out that this structural inequality promotes status beliefs that distinguish men in comparison to women. Major (1994) emphasizes the fact that these perceived differences are then internalized as dispositional attributions which stigmatize women as inferior - not by choice but because of who they are. In this way status beliefs provide cultural schema which function to

organize the inequality inherent in social relations and provides prescribed attitudes and behaviors which in turn validate the stereotype from which they are derived (Rasinski, Tyler, & Fridkin, 1985).

Further evidence of this reification process on the part of both men and women comes from Weber, Mummendey, and Waldzus (2002) who argue that group members evaluate their ingroup, relative to an outgroup, in comparison to the prototype of a superordinate category that encompasses both groups. Ingroup and outgroup favoritism are derived from assessing the relative similarity to this prototype. For example, outgroup favoritism results when women compare themselves to men and men are believed to better represent the ideals of what it means to be an American. Weber et al. (2002) hypothesized that the prototype provides a normative standard, like a template for subgroup comparison and that similarity to this template, which they call prototypicality, is used to evaluate and determine relative group status. If the perception is that there is a high correlation between the comparison group and the prototype then this justifies high status, that is, high status is legitimized. An initial naturalistic study supported this prediction comparing Germans and Poles as outgroups and Europe as the standard. There was a direct correlation between perceived legitimacy and similarity to the European template. In a follow up experiment manipulation of relative intergroup status and similarity to a constructed standard provided further support for the hypothesis that there is a causal relationship between ingroup status, prototypicality, and perceived legitimacy.

In a meta-analysis Bettencourt, Dorr, Charlton, and Hume, (2001) also found that perceived legitimacy is critical for high status ingroup favoritism. On relevant dimensions, high status groups are more likely to think in self-serving ways when their

high status is legitimate. But it is the status beliefs of women that are most important in sustaining gender hegemony because to be perceived as legitimate status beliefs must be consensual (Jost et al., 2003). There is considerable correlational evidence that perceived legitimacy is pivotal to system justification but if the status value asymmetry effect is real and is sustained by consensual status beliefs then it should be possible to experimentally manipulate perceived legitimacy to mitigate the effect. This is exactly what the research of Jost and Burgess (2000), Jost (2001), and Schmader, Major, Eccleston, and McCoy (2001) has accomplished.

System Justification and Perceived Legitimacy. Jost & Burgess (2000) showed that members of disadvantaged groups simultaneously endorse unequal status quo social hierarchies and devalue dimensions on which their group excels, while conceding preferential value for higher status outgroup traits. In addition to assessing ingroup/outgroup favoritism, Jost and Burgess obtained assessments for fairness, justifiability, and legitimacy and were able to show that perceived legitimacy is positively correlated with increased ingroup favoritism on status relevant traits for participants in the high status condition, but for participants in the low status condition, increased perceived legitimacy was associated with both lower ingroup favoritism and higher outgroup favoritism on these same status relevant traits. That is to say, they were able to manipulate status and experimentally demonstrate the status value asymmetry effect in the laboratory situation.

A follow-up experiment (Jost, 2001) replicated these results and incorporated a manipulation for perceived legitimacy. Participants in the low status/high legitimacy condition showed greater outgroup favoritism for status relevant achievement traits such

as intelligent, hard-working, and skilled at verbal reasoning, compared to those in the low legitimacy condition. High legitimacy participants also showed less ingroup favoritism on status irrelevant socioemotional traits such as honest, friendly, interesting, compared to low legitimacy participants.

As further evidence of the importance of status beliefs regarding the legitimacy of the system, Robinson and Kray (2001) reported survey results showing that those supporting the status quo make little effort to understand the arguments for change. These findings suggest that once legitimized, status beliefs become reified. Major and Schmader (2001) identified perceived legitimacy among the disadvantaged as crucial to maintaining status beliefs in inequality.

Legitimacy perceptions derive from the individual perceiving his or her own situation as just or unjust. That is, legitimacy appraisals are subjective perceptions of fairness or justice regarding the distribution of wealth, status, or power. Although these subjective perceptions are held individually, when they become reified as part of the individual's social-identity derived from group stereotypes they gain their power to legitimize social inequality and provide support for the status quo through their collective endorsement within a culture (Rasinski, Tyler, & Fridkin, 1985; Major, 1994).

Legitimacy Appraisal. Working backward from system justification to social-identity we see that stereotypes are what most directly affect the appraisal of legitimacy. Stereotypes and status value asymmetry are sustained by status markers which correlate with success and thus have value within a domain (Ridgeway, 1991). For example, being tall would be a status value marker for a basketball player, or young and attractive would be status value markers for a model. It is in this way that socioemotional characteristics

become identified as value markers for what a female “should be like,” and achievement characteristics as markers for recognizing a valuable male. Status value markers then coalesce in communal and agentic stereotypes for women and men respectively, but it is the markers themselves that serve as the molecules of outgroup favoritism.

Conversely, if the status beliefs regarding the perception of men as more agentic and women as more communal is not appraised as legitimate *by women*, then the inequality of outcomes are seen as discriminatory and unjust (Major & Schmader, 2001). Legitimacy appraisal then is the lynchpin sustaining status value asymmetry. Extending the reasoning from social construction theory regarding status value markers to personality traits, Schmader et al. (2001) reported the results of two studies demonstrating outgroup bias and status value asymmetry under conditions of assumed legitimacy and one experiment showing that perceived illegitimacy can mitigate the outgroup bias effect. Thus, in the absence of perceived system legitimacy, the *Machiavellian Mask* necessary for hegemony to survive is lifted, revealing the true inequality of the system.

In Summary

This chapter highlights the most important common thread for the current study which is perceived legitimacy and how it is crucial both for understanding the outgroup bias phenomenon and for maintaining gender structural inequalities. The key dimensional variable involved in creating and sustaining unequal gender status hierarchies was deduced from a number of theoretical and indirect empirical approaches. A review of the evolution of hegemony shed light on current models of modern sexism, revealing a unique form of hegemony that contains complementary gender stereotypes.

This unique brand of hegemony fosters status beliefs that ascribe men with agentic achievement traits and women with communal socioemotional traits. This cultivated implicit atmosphere creates the consensual nature of status beliefs. The end product results in women accepting that they are less competent, but also that they are distinctively better in other, much less valued ways.

The outgroup bias effect and how system justification theory uniquely predicts the phenomenon of status value asymmetry was also reviewed. One of the most compelling illustrations of status value asymmetry comes from research demonstrating the crucial role of perceived legitimacy in determining ingroup versus outgroup favoritism. What the literature does not reveal is the extent to which perceived legitimacy directly affects the appraisal of status beliefs that are key to sustaining agentic stereotypes of men and communal stereotypes of women. The present paper presents an empirical examination testing the hypothesis that exposure to legitimizing or delegitimizing construal information regarding sex-role stereotypes directly affects the status beliefs sustaining status value asymmetry.

THE PRESENT STUDY

Ridgeway and Berger (1986) extended the reasoning of Weber regarding cultural hegemony to gender recognizing the saliency of status beliefs as the mortar for an institutionalized societal hierarchy ascribing greater worth to men than women. Jackman (1994) has argued that persuasion rather than conflict best describes gender hegemony and that, in its modern form the use of power to subjugate women to men has created an ambivalent alliance. Nowhere is this ambivalent alliance more apparent than with the

phenomenon of outgroup favoritism. Ingroup favoritism is explained by social identity theory (Tajfel & Turner, 1986); but, if the comparison group is of higher status than the ingroup then outgroup favoritism is observed, that is, a valuing of the status level characteristics identified with the higher status group. Theory of system justification was formulated to explain the paradox of outgroup favoritism (Jost and Banaji, 1994).

In order to be persuasive rather than hostile modern sexism relies on compensatory stereotyping ascribing favorable status irrelevant traits such as caring, gentle, and kind to women and then uses these same flattering socioemotional attributes as stigma, prejudicially undermining status relevant achievement characteristics such as competitive, ambitious, and strong (Jost & Kay, 2005). Unlike other groups the relationship between men and women is profound in its complex interdependence. The consequence of this is a unique form of discrimination with complementary gender stereotypes used to foster status beliefs characterizing men with agentic achievement traits and women with communal socioemotional traits which are then viewed as reinforcing one another and necessary for the greater good. This raises the question as to whether or not the prediction of outgroup favoritism and as deduced from system justification theory functions in a manner similar to that observed in other groups.

To answer this question the present study proposes to expose women to legitimate or illegitimate stereotype consistent information using stimuli from a stereotype threat situation and examine the extent to which an outgroup bias on status relevant variables and ingroup bias on status irrelevant variables varies in comparison to that of women in a control condition.

CHAPTER III

METHOD

Participants

There were 246 female participants in this study. With 82 participants in each of three independent groups power, using GPower 3.0.5 (<http://www.psych.uni-duesseldorf.de/aap/projects/gpower/>), was calculated to be $1 - \beta = .99$ for both the F and r statistics with a moderate effect size of .25. The average age of the participants was 21.62 with a standard deviation of 6.53. Participants were recruited from undergraduate psychology classes for an experiment examining academic achievement and learning styles among men and women. Information regarding the purpose of the study, requirements, and estimated length of participation were provided upon recruitment (see the Participant Consent Form in Appendix A). Participants were able to perform the web-based experiment from any computer connected to the internet at <http://osu.cmapsych.net/gender>. While some participants accessed the internet site on their own recognizance others signed-up for the experiment and accessed the internet site using computers available in a laboratory setting. Of the 246 subjects 112 accessed the web site independently and 134 accessed it in the laboratory setting. No significant performance differences were found between these conditions of participation.

Once participants accessed the website they were again provided information concerning the nature of the experiment and received informed consent. Participants then provided demographic information and answered a series of four questions designed to assess gender identification. Then they completed the online experiment: reading an essay and answering questions concerning the essay's content, completing the dependent

variable which entailed providing ratings for men and women, and answering three stereotype perception questions and three legitimacy manipulation questions. Upon completion of the experiment, participants were given a debriefing form that outlined the purpose of the study and reminded them of contact information if they had any additional questions (see Appendices I, J and K).

Gender Identification

While participants were providing demographic information, gender identification was assessed using four questions modified in wording from the importance subscale of the Collective Self-Esteem Scale (Luhtanen & Crocker, 1992) to assess the perceived importance of gender identity to self-definition. Schmader (2002) has shown this measure to be sensitive to gender identification among women finding that high group identification correlates with greater susceptibility to performance deficit under conditions of stereotype threat.

Participants rated each of these four items on a five point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*): “Being a woman is an important part of my self-image”, “Being a woman is unimportant to my sense of what kind of person I am” (reverse scored), “Being a woman is an important reflection of who I am”, “Being a woman has very little to do with how I feel about myself” (reverse scored). Schmader (2002) reported the index to be reliable for gender identification with $\alpha = .70$. McCoy, Quinton, and Schmader (2003) using this same scale reported a reliability index of $\alpha = .81$.

Experimental Procedure

Legitimacy Manipulation. Participants were randomly assigned to either a Control, Legitimate, or Illegitimate experimental condition. To provide a basis for comparison, participants in the Control condition read an essay unrelated to math and science ability in men and women. This Control described a strategy for goal-oriented studying adapted from an article written by Svinicki (2006). In the Legitimate condition participants read an essay describing genetic evidence proving that differences between men and women in their math and science aptitude is due to a gene located on the Y-chromosome. In the Illegitimate condition participants read an essay describing experimental evidence that the difference in math and science ability between men and women is due to the fact that teachers bias the expectations of children during their early formative years. These essays were reproduced from Dar-Nimrod and Heine (2006) and were used with their permission (see Appendices B, D, and F).

Following presentation of their respective essays, participants in all three groups were asked two multiple choice questions regarding the essay content to ensure attention to task (see Appendices C, E, and G). If participants did not answer the questions correctly the essay reappeared and they were given another opportunity to answer the questions. This procedure was repeated until both of the questions were answered correctly.

Stereotype Perception. To assess participants' perception of gender stereotypes regarding math and science follow reading the essays they were asked three questions. "Do you think men have greater success than women in math and science?", "Do you think there is a genetic reason for the differences between men and women in math and science?", and "Do you think the differences between men and women in math and

science result from their past experiences rather than genetics? Each of these questions was rated on a 7-point Likert scale ranging from 1 (*Not at All*) to 7 (*Extremely*).

Perception of Legitimacy. As a check for the legitimacy manipulation participants were asked to respond to three questions modified from a study by Jost and Burgess (2000) about how they feel with regard to the success differences between men and women. “Do you think these success differences are fair or unfair?”, “Do you think these success differences are just or unjust?”, and “Do you think these success differences are legitimate or illegitimate?” Each of these questions was rated on a 7-point Likert scale ranging from 1 (*Extremely: Fair, Justifiable, or Legitimate*) to 7 (*Extremely: Unfair, Unjustifiable, or Illegitimate*). Jost and Burgess (2000) reported a reliability index of perceived legitimacy at $\alpha = .71$ using the averages across all three items.

Dependent Measure. The primary dependent measure was computed from responses to a 20-item scale that instructed participants to rate on a 7-point Likert scale ranging from 1 (*Not at All*) to 7 (*Extremely*) the extent to which each of the words listed describes Men and Women in general (See Appendix H). The 20 personality characteristics in the scale were derived from a survey by Almstrom, Jones, and Knight (2007). In order to empirically determine what personality characteristics are perceived as relevant for achieving status 62 items were selected on the basis of their face validity from Anderson’s (1968) normative data for 555 personality traits. The 62 items were presented randomly asking the question, “To what extent do you believe it is important to be _____ to achieve status?” Each item was rated on a seven point Likert scale with the descriptive labels, Barely, Weak, Mild, Moderate, Strong, Very Strong, and Strongest Imaginable. Of the original 62 items, the ten highest characteristics were Confident,

Ambitious, Productive, Honest, Intelligent, Responsible, Reliable, Dependable, Devoted, Committed, and the ten lowest rated items were Warm, Quiet, Soft, Gentle, Romantic, Tender, Sympathetic, Nurturing, Sensitive, Emotional. The top ten items from that survey comprised the status relevant half of the dependent measure and the lowest ten items represented the status irrelevant portion of the measure. The order of item presentation was randomized and counterbalanced, such that half the participants provided ratings for Men first; the other half rated Women first. Jost and Burgess (2000) and Jost (2001) recommend using difference scores to simplify the assessment of ingroup and outgroup favoritism. This is accomplished by subtracting participants' outgroup ratings for Men for each item on the dependent measure from the respective ingroup ratings for Women on that same item and then averaging these difference scores separately for status relevant and status irrelevant items. A positive difference score reflects greater ingroup preference for that domain; negative scores reflect an outgroup preference for that domain.

Hypotheses

Primary Hypothesis. Using difference scores transforms the data such that positive scores reflect ingroup favoritism and negative scores reflect outgroup favoritism. As depicted in Figure 1 the primary hypothesis was that there would be a significant main effect for Status Domain with greater ingroup favoritism for status irrelevant traits as compared to status relevant traits regardless of the legitimacy condition. It was further hypothesized that there would be a significant interaction. It was also hypothesized that there would be a significant interaction observed such that participants exposed to the legitimate script would show greater endorsement of status relevant variables relative to the illegitimate or

control participants (Legitimate > Control). Conversely it was predicted that when exposed to the illegitimate script outgroup favoritism would decrease relative to the control condition (Illegitimate < Control).

Gender Identity Hypothesis. It was hypothesized that there would be a significant relationship between gender identification and ingroup and outgroup favoritism. More specifically it was hypothesized that there would be significant correlations between the participants' scores on the dependent variable and their gender identity scores for both status relevant and status irrelevant trait items. Because positive scores on the dependent variable reflect ingroup favoritism and negative scores reflect outgroup favoritism it was hypothesized that significant positive correlations would be evidenced between gender identity and the dependent measure on status irrelevant traits and significant negative correlations would be found between gender identity and the dependent measure for status relevant traits. It was further hypothesized that these correlations would be most pronounced in the legitimate condition relative to the control condition and less pronounced in the illegitimate condition (Legitimate > Control > Illegitimate).

CHAPTER IV

STATISTICAL ANALYSIS

The primary dependent measure used to assess ingroup and outgroup favoritism was the difference scores derived from participant ratings for Women minus their rating for Men. A positive difference between ratings reflects an ingroup preference for Women and a negative difference between ratings reflects an outgroup preference for Men on that characteristic. Previous studies examining ingroup-outgroup bias have used this methodology (e.g., Jost & Burgess, 2000). Means for these difference scores were computed for the ten characteristics comprising the status relevant achievement and the status irrelevant socioemotional domains.

With the primary dependent measure of difference scores the ANOVA design was a 3 (Legitimization: Control, Legitimate, Illegitimate) x 2 (Status Domain: Status Relevant, Status Irrelevant) between/within mixed design.

3 x 2 BW Mixed Design		SR	SI
		Achievement	Socioemotional
	Legitimate		
	Control		
	Illegitimate		

Because there were only two levels of the Status Domain variable a significant main effect would require no further analysis; however, if the Legitimization variable were significant then main effect contrasts would be required to compare each of the

three conditions. If the interaction were significant then simple contrasts would be required to test planned pairwise comparisons derived from systems justification theory. More specifically, simple contrasts would be used to make pairwise comparisons between the conditions Legitimate, Illegitimate, and Control for each of the Status Domains and to compare Status Relevant versus Status Irrelevant for each of the Legitimacy conditions. Pearson product-moment correlations were used to assess the hypotheses regarding the relationship between gender identification and ingroup/outgroup favoritism for both status relevant and status irrelevant characteristics.

CHAPTER IV

RESULTS

Manipulation Checks

Stereotype Perception. Following experimental manipulation, participants were asked three questions regarding their perception of the stereotype that men have greater success than women in math and science. Means and standard deviations for their responses by experimental condition are given in Table 1 and graphed in Figure 2. Responses to the question, “Do you think men have greater success than women in math and science?” were significantly different, $F_{(2, 243)} = 5.04$, $p = .007$, $\eta^2 = .04$, with Control participant ratings being significantly higher than those from participants in the Legitimate and Illegitimate conditions, which did not differ from each other. Significant differences were also observed on the question, “Do you think there is a genetic reason for the differences between men and women in math and science?”, $F_{(2, 243)} = 4.46$, $p = .01$, $\eta^2 = .04$, with ratings from participants in the Illegitimate condition (who had just read the experiential essay) being significantly lower than participants in the Legitimate and Control conditions-which did not differ. No significance differences were observed for the question, “Do you think the differences between men and women in math and science result from their past experiences rather than genetics?”, $F_{(2, 243)} = 1.08$, $p = .34$.

Legitimacy. Participants in the Legitimate and Illegitimate conditions were asked three questions concerning how they felt regarding the success differences between men and women in science and mathematics. Means and standard deviations for each of these three questions are given in Table 2 and shown in Figure 3. Ratings were not

significantly different on the questions, “Do you think these success differences are fair or unfair?”, $t_{(162)} = 1.46, p = .15$, or “Do you think these differences are legitimate or illegitimate”, $t_{(162)} = .46, p = .65$; however, there was a significant difference on the question, “Do you think these differences are just or unjust?”, $t_{(162)} = 1.96, p = .05$. More specifically, participants were more likely to rate differences between men in women on mathematical and science ability as just when they were in the Legitimate (genetic) condition in comparison to the Illegitimate (environmental) condition. This suggests that being exposed to either the genetic essay had a marginal impact on participants’ overall perception of existing differences between men and women in math and science.

Primary Hypothesis

As depicted in Figure 1, the primary hypothesis was that there would be a significant main effect for Status Domain and a significant interaction between Legitimization x Status Domain with ingroup favoritism on status irrelevant items and outgroup favoritism on status relevant items. More specifically, it was hypothesized that relative to the control condition ingroup and outgroup favoritism, for both status relevant and status irrelevant traits, would be more pronounced when legitimized by the genetic essay (Legitimate > Control). Conversely it was predicted that when delegitimized using the experiential essay ingroup and outgroup favoritism would decrease relative to the control condition (Illegitimate < Control).

To test the primary hypothesis, difference scores for status relevant and status irrelevant traits were computed separately by subtracting participants’ trait ratings for men from their trait ratings for women. Means and standard deviations for the 10 status relevant and 10 status irrelevant traits are shown in Table 3 and in Figure 4. Combined in

this way, positive difference scores reflect greater ingroup favoritism and negative difference scores reflect greater outgroup favoritism on status relevant and status irrelevant traits, respectively (Jost & Burgess, 2000). Difference score means and standard deviations from the resulting 3 (Legitimate/Control/Illegitimate) x 2 (Status Relevant/Status Irrelevant) between/within mixed design ANOVA are presented in Table 4 and results of the analysis are given in Table 5. The interaction means (see Figure 5) reveal a strong ingroup favoritism effect on status irrelevant traits, but an absence of the predicted outgroup favoritism effect on status relevant traits.

Whereas the main effect for status domain (status relevant vs. status irrelevant) was significant, $F_{(1,243)} = 752.22$, $p = .001$, $\eta_p^2 = .756$, with a large effect size, the main effect for legitimacy was not. More importantly, Legitimacy x Status interaction was also significant, $F_{(2,243)} = 6.75$, $p = .01$, $\eta_p^2 = .05$, but yielded a comparatively small effect size. Closer examination of the interaction means with tests for simple contrasts for planned comparisons revealed that all three of the comparisons between status relevant and status irrelevant domains were significant, with status irrelevant difference scores higher than status relevant difference scores (all $ps < .001$). Comparisons within the status relevant domain revealed no significant comparisons. However, within the status irrelevant domain, ratings from participants in the Legitimate condition were significantly higher than ratings from participants in the Illegitimate condition ($p = .03$). The other two comparisons (Legitimate vs. Control and Control vs. Illegitimate) were nonsignificant. In other words, following exposure to the ‘genetic explanation’ essay, women endorsed more status irrelevant traits to describe women compared to participants exposed to the ‘experiential’ essay and participants given no information.

Gender Identity Hypothesis

It was hypothesized that there would be a significant relationship between gender identification and ingroup and outgroup favoritism. More specifically it was hypothesized that there would be significant correlations between the participants' scores on the dependent variable and their gender identity scores for both status relevant and status irrelevant trait items. To determine whether *a priori* gender identity differences existed between the three groups, a one-way ANOVA was performed. Results confirmed the equivalence of groups on gender identification, $F_{(2,243)} = .50, p = .61$. Means and standard deviations for each of the groups Legitimate, Control, and Illegitimate were, 3.49(.68), 3.56(.73), and 3.57(.77). It was hypothesized that a significant relationship would exist between gender identification and ingroup/outgroup favoritism. Specifically, it was anticipated that significant positive correlations would be observed between gender identity and status irrelevant traits and significant negative correlations between gender identity and status relevant traits. Further, it was anticipated that these correlations would be most pronounced among participants in the legitimate condition relative to control participants and less pronounced for participants in the illegitimate condition relative to control. However, as can be seen from the correlation coefficients reported in Table 6 this hypothesis was not supported.

Exploratory Analyses

Analysis of the four highest and four lowest status markers. Because trait ratings occupying the middle range (i.e., those with the smallest women- men differences) might function to mask the effects of legitimacy manipulation, the four highest status traits and the four lowest status traits were combined to reform the status relevant and status irrelevant domains used to test the primary hypothesis. Figure 6 compares the ratings from all participants for each of the individual status traits, rank ordered from highest (Confident) to lowest (Emotional) according to the value of the trait as a marker for achieving status. These ranks orders were derived from norms compiled by Almstrom, et al. (2007). In over-all appearance the stereotyping of Men as high in traits relevant for achieving status and low in traits irrelevant for achieving status stands in stark contrast to the stereotyping of Women as equally high in both status relevant traits and status irrelevant traits. Assigning ranks from 20 (highest status value) to 1 (lowest status value) produced a correlation of $r = .86$ with the average ratings for Men and a correlation of $-.62$ with the average ratings for Women.

The new status relevant domain contained the traits *Confident, Ambitious, Productive, and Honest*; the new status irrelevant domain traits were *Emotional, Sensitive, Nurturing, and Sympathetic*. The means and standard deviations for these new status relevant and status irrelevant trait combinations are given in Table 7. Results of a 3 (Legitimate/Control/Illegitimate) x 2 (Status Relevant/Status Irrelevant) between/within mixed design analysis of variance (ANOVA) are presented in Table 8; interaction means are depicted in Figure 7.

Again, the main effect for status domain was significant, $F_{(1,243)} = 913.63, p < .001, \eta_p^2 = .790$, with a large effect size; however, the main effect for legitimacy

manipulation was nonsignificant. More importantly, the Legitimacy x Status interaction was found to be significant, $F_{(2,243)} = 4.77, p = .01, \eta_p^2 = .038$; although, the effect size was comparatively small. Examination of the interaction means with tests for simple contrasts for planned comparisons revealed that all three comparisons between status relevant and status irrelevant domains were significant (all $ps < .001$). Comparisons within the status relevant domain revealed that the outgroup favoritism evidenced by participants in the Legitimate condition was significantly greater than Control participants ($p = .02$), and significantly different from the ingroup favoritism evidenced by participants in the Illegitimate condition ($p = .002$). The Illegitimate versus Control group comparison was not significant. All three comparisons within the status irrelevant domain were also nonsignificant. Further, the interaction was found to be significant, because no differences existed among the status relevant items but was present among the status irrelevant items. Results indicated that unlike the analysis using all status relevant and status irrelevant items these results supported the primary hypothesis for the status relevant traits specifically.

Analysis of Confident as a status marker. As can be seen in Figure 6 the discrepancy for the perception of Men and Women is particularly pronounced for *Confident*, the highest status value marker. Table 9 summarizes the mean ratings and standard deviations for this trait. To further examine the legitimacy effect on ingroup/outgroup favoritism, a one-way ANOVA comparing the three groups (Legitimate, Control, and Illegitimate) was performed using women – men difference scores on the *Confident* trait. Means and standard deviations for these groups were -1.82(1.45), -1.10(1.47), and -.80(1.36), respectively. Figure 8 shows pronounced

outgroup favoritism on the confident trait for control participants, which is exaggerated under conditions of legitimization and somewhat dampened under condition of delegitimization. The over-all F -ratio was significant, $F_{(2,243)} = 10.94, p < .001, \eta^2 = .08$. Significant differences were observed for both Legitimate v. Control ($p < .001$) and Legitimate v. Illegitimate ($p < .001$) comparisons. Ratings on the *Confident* dimension did not differ for Control and Illegitimate group participants. Results suggest that the legitimacy effect observed for SR items in the exploratory analysis may have been due to this single status value marker. In other words, being exposed to the genetic essay served to legitimize the differences between men and women with regard to the perception of their confidence, thereby enhancing outgroup favoritism for this trait. Although exposure to the experiential essay in the illegitimate condition did reduce outgroup favoritism on the Confident trait, this difference was not significant compared to participants in the control condition.

Analysis of the three highest and lowest status markers excluding Confident. To test the hypothesis that the *Confident* status value marker produced the previously observed significant interaction, an additional 3 x 2 between/within ANOVA was performed excluding this trait. The analysis used women - men difference scores for the three lowest status value markers (*Emotional, Sensitive, Nurturing*) as status irrelevant items and the three highest status value makers (*Ambitious, Productive, Honest*) as status relevant items. The resulting means and standard deviations are presented in Table 10 and Figure 9. ANOVA results (see Table 11) revealed a non-significant interaction between legitimacy condition x status domain. The analysis revealed only a significant main effect for status domain as had been observed in all previous analyses.

CHAPTER V

DISCUSSION

The current study investigated the way in which female participants ascribe status relevant (competence/achievement) versus status irrelevant (socioemotional/warmth) traits differently to men and women. Specifically, the experiment was designed to examine the extent to which differential ascription of these traits could be enhanced or diminished by exposing female participants to either stereotype legitimizing (genetic) or delegitimize (experiential) information regarding women in math and science achievement differences between men and women. Previous research has shown that such legitimization has a direct effect on women's performance following exposure to stereotype consistent information (Dar-Nimod & Heine, 2006). What the existing literature does not reveal is the extent to which perceived legitimacy of achievement differences directly affects women's ascription of status traits to men and women.

Manipulation Checks

Analysis of the manipulation checks for stereotype perception and legitimacy suggested that exposure to the genetic or experiential essays were somewhat effective. Female participants in the control condition were significantly more likely to believe that men have greater success than women in math and science than were female participants who read the genetic essay (Legitimate Condition) or participants who read the experiential essay (Illegitimate Condition). However, when asked if they believed there was a genetic reason for these differences female participants who read the experiential essay gave significantly lower ratings than either female participants in the control group or female participants who read the experiential essay. There were no differences among

groups relative to their belief that the differences between men and women were the result of past experiences. Regarding whether these achievement differences were fair, just, or legitimate, participants in the Illegitimate Condition perceived these differences as less just. It seems reasonable to conclude that the legitimacy manipulation was only minimally effective.

Hypotheses

Primary hypothesis. It was hypothesized that regardless of the legitimacy condition there would be greater ingroup favoritism on status irrelevant traits and that participants exposed to the legitimate script would show greater outgroup endorsement (to men) for traits associated with achieving status. Likewise, it was anticipated that exposure to the illegitimate script would reduce outgroup endorsement of status valued achievement traits. Although these female participants did exhibit a strong tendency to ascribe more status irrelevant traits to women in comparison to men, the hypothesis of an interaction between Status Domain x Legitimacy condition was only partially supported. Contrary to expectation, women demonstrated ingroup endorsement of both achievement and socioemotional traits regardless of experimental condition. However, female participants in the Legitimate Condition endorsed significantly more status irrelevant (socioemotional) traits compared to female participants in the illegitimate condition. No differences were observed among experimental conditions with regard to achievement (status relevant) characteristics.

Gender identity hypothesis. Schmader (2002) has shown that gender identification moderates the effects of stereotype threat on women's math performance. For this reason it was hypothesized that there would be a significant relationship between

gender identification and the ascription of status relevant and status irrelevant traits. Specifically, it was anticipated that significant positive correlations would be observed between female gender identity and the ascription of socioemotional traits to women and significant negative correlations between gender identity and ascription of achievement traits to women. This hypothesis, however, was not supported. Given the nonsignificant correlations observed in the present study, identification does not appear to be related to general perceptions of men and women regarding status traits.

Exploratory analyses. In order to determine whether the traits at the extremes for achievement and socioemotional characteristics might be more sensitive to the effects of the legitimacy manipulation, the data were reanalyzed using the achievement traits *Confident, Ambitious, Productive, and Honest*, and the socioemotional traits *Emotional, Sensitive, Nurturing, and Sympathetic*. Analysis revealed a significant interaction in support of the primary outgroup endorsement hypothesis for status relevant traits, with *Confident* accounting for the largest proportion of the variance. This was confirmed by analyzing the data again excluding *Confident*. Under these circumstances, the previously significant interaction was found to be nonsignificant. Analysis with the item *Confident* by itself produced a strong effect in support of the outgroup endorsement hypothesis.

Interpretation

Systems Justification Theory. In a broader context, results obtained are best understood within the theoretical conceptualizations of system justification theory (Jost & Banaji, 1994) and stereotype threat (Steele, 1997). System justification theory explains gender outgroup favoritism as an example of females exhibiting a preference for male traits which are markers for socioeconomic status. The hegemonic status beliefs which

motivate the valuing of these status markers function to create a hierarchy of worth and, at the same time, ascribes positive but less valued traits to women. According to system justification theory it is the content of the stereotypes that provide markers ascribing status to a group. Of significance for interpreting the results of the current experiment is the fact that female participants stereotyped men as high in achievement traits and low in socioemotional traits, which is consistent with system justification theory. What is incongruent with system justification theory is that female participants described women as equally high in both achievement and socioemotional traits. Generalizing from Cuddy et al. (2004), this is significant because for women being perceived as high in both domains produces a disharmonious stereotype pattern. Previous literature describes the traditional stereotype pattern for women as a mixed-valence stereotype because the subservient role is generally perceived to be less competent but more warm, or in the nontraditional role competent but at the expense of warmth. The present data present a somewhat different picture.

As can be seen in Figure 10 these female participants stereotyped women as high in both status relevant achievement and status irrelevant socioemotional traits, which was not anticipated. If we arbitrarily divide the rating scale along the median line into high and low achievement and socioemotional quadrants, we see that all ten of the status relevant items and nine of the ten status irrelevant items fall in the high quadrant. Female participants described women as both competent and warm.

Men on the other hand are stereotyped as high for the top three achievement traits, *Confident*, *Ambitious*, *Productive*, and for *Intelligent* (four of the ten SR traits); however, they are in the low quadrant on all 10 of the socioemotional traits. Interestingly, this

stereotype pattern is typically used to describe people who are not well liked. Smith, Parrott, Qzer, & Moniz, 1994 and Smith (2000) also point out that this stereotype pattern is most often reserved for a higher status outgroup whose elevated position is perceived as unfair and unjust.

Within the status irrelevant domain, the perception of men and women are almost identical mirror images of one another. These trends can be seen by comparing the linear function lines for women and men (see Figure 11) to the value of the trait as represented by a diagonal line of decreasing status value. If the status value diagonal is viewed as a description of the “ideal” for achieving status, then men are seen as much more congruent with this ideal. Because women are stereotyped as possessing more socioemotional traits, there is incongruence with the status value diagonal. The consequence of this is a good example of benevolent sexism where the ascription of socioemotional traits is used to undermine achievement traits. It is also a good example of gender hegemony because it is females who are validating the stereotype. In this regard it would be interesting to see how female participants would describe themselves using these same characteristics. It might be expected that while women in general are perceived as more communal the perception of self is more agentic.

The difference in the stereotypes for men and women were substantial, particularly with regard to socioemotional traits. The magnitude of the observed differences suggests that the stereotypes themselves were too well established and ingrained to be affected one way or another by the legitimacy manipulation. This argument is compatible with the null education environments hypothesis (Betz & Fitzgerald, 1987) and has important clinical implications. Betz and Fitzgerald propose

that null education environments by their very nature discriminate against women because of the lack of encouragement they receive for aspiring to nontraditional careers. The idea of societal null education environments which sustain gender hegemony suggests that simply delegitimizing the narrative is not enough to deconstruct the stereotypes of women. The education environments themselves, particularly for young females, must be changed in order to interrupt the narrative cycle. Betz (1989) uses references to literature and the stories we tell young women to support this argument highlighting the clinical implications of self perpetuating narratives.

Another possible explanation is that there was no legitimacy effect because the perception of men as high in competence and low in warmth is indicative of a stereotype pattern which is already viewed as inherently unjust (Smith, 2000). Under these circumstances there would be no ideological dissonance and no motivation to adopt status beliefs justifying the inequalities inherent in the system. The inequalities are recognized, but recognized as unjust.

Stereotype Threat

It is possible that confidence was a particularly salient trait for outgroup favoritism because it can be uniquely associated with stereotype threat. In the context of the math and science essays female participants were exposed to in the legitimacy manipulation, confidence was the most relevant of the achievement characteristics. From the stereotype threat literature there is experimental evidence that confidence is a personality trait reflecting competence in math and science. For example, Aronson, Lustina, Good, Keough, and Steele (1999) have shown that stereotype threat requires neither a history of stigmatization or internalized inferiority and concluded that

performance decrements are directly related to perceived self-confidence. In a comprehensive review of the stereotype threat literature, (Smith 2004) suggests that although no single mediator variable by itself adequately accounts for performance decrement, anxiety and performance confidence are consistently found to be partial mediators.

In the present study, being exposed to information which legitimized the stereotype of men as naturally superior to women in math and science may have activated a stereotype threat frame of reference in which men would be perceived as more competent and more confident as a result. It would be interesting to investigate in more depth the effect of legitimization on the perception of status valued traits (particularly *Confidence*) in circumstance where stereotype threat was experimentally induced.

Strengths

Although there was minimal support for the legitimacy effect on traits endorsement was observed, a major strength of the current study was that there was substantial evidence that women are stereotyped differently than men with regard to socioemotional traits but not with regard to achievement traits. In spite of the absence of a legitimacy effect for all of the status value characteristics there was evidence for a strong legitimacy effect with the trait of *Confidence*. It is a strength of this study that this legitimacy effect was observed with legitimacy being an experimentally manipulated variable. It was also a major strength of the current study that a normed status value hierarchy for achievement and socioemotional traits was used for comparison. Because of this it was found that the ratings for men revealed a negative stereotype pattern interpreted by (Smith, 2000) as reflecting envy resulting from unjust status while those

for women revealed a positive stereotype pattern reflecting pride and admiration (Smith, 2000). It is paradoxical that the same socioemotional traits which could be storied as indicative of ingroup favoritism could also tell a story of outgroup favoritism since these same characteristics are perceived as incongruent with achieving status. This is significant because as Cuddy et al. (2004) have shown the ascription of low valued status traits to women can compromise the perception of them as competent. More specifically, for women communal and agentic stereotypes are mutually exclusive, not complementary, an idea that is consistent with modern sexist hegemony.

Limitations

There were several limitations in the present study. The validity and reliability of the dependent measure needs to be established for the sensitivity of items to legitimacy manipulations. It is possible that the specific traits comprising the dependent variable were too polarizing and that more indistinct traits which are less obvious would have produced different outcomes. It is also possible that too many traits, especially from the mid-range of the status value hierarchy, were used and that this functioned to dilute the over-all effect. Because the experimental manipulation was related to math and science ability it is also possible that using traits more specifically related to achievement than status would have produced a legitimacy effect.

Another significant limitation was the population sampled. One of the most surprising outcomes from this research was the ingroup endorsement of status relevant (achievement) items. A possible explanation for this is that female college students may not be representative of the general female population. It might be the case that relative to

high status valued traits these young female college students are unique in seeing women as high in achievement characteristics.

Future Research

It is suggested that future research examine a more representative sample of females to determine if college students represent a distinctive sample in comparison to the general population with regard to the stereotyping of men and women. The question of gender identity also needs to be examined more closely in future designs to determine if a more sensitive measure reveals a relationship with ingroup and outgroup favoritism on status relevant and status irrelevant traits. Also, the legitimization manipulation was weak and observed significant results were almost exclusively due to the trait *Confident*. It is plausible that the nature of the essays which were taken from a stereotype threat experiment, artificially inflated the *Confident* dimension. Lastly, another area of interest for future research would be to test the legitimacy predictions under conditions where stereotype threat is being experienced by the participants. That is, having participants rate the status value characteristics following the experience stereotype threat in an actual math and science testing environment.

REFERENCES

- Almstrom, C., Jones, J., Knight, M. (2007). *Status-value asymmetry in the perception of men, women, and the ideal person*. Paper presented at Association for Psychological Science, Washington D. C.
- Anderson, N.H. (1968). Likableness ratings of 555 personality-trait words. *Journal of Personality and Social Psychology*, 9, 272-279.
- Aronson, J., Lustina, M. J., Good, C., Keough, K., Steele, C. M. (1999). When white men can't do math: Necessity and sufficient factors in stereotype threat. *Journal of Experimental Social Psychology*, 35(1), 29-46.
- Bargh, J. A., Chen, M., & Burrows, L. (1996). Automaticity of social behavior: Direct effects of trait construct and stereotype activation on action. *Journal of Personality and Social Psychology*, 71, 230-244.
- Berger, P. L. & Luckmann, T. (1967). *The social construction of reality*. London: Penguin Books.
- Bettencourt, B., Dorr, N., Charlton, K., & Hume, D. (2001). Status differences and in-group bias: A meta-analytic examination of the effects of status stability, status legitimacy, and group permeability. *Psychological Bulletin*, 127, 520-542.
- Betz, N. E. (1989). Implications of the null environment hypothesis for women's career development and counseling psychology. *Counseling Psychologist*, 17(1), 136-144.
- Betz, N. E., & Fitzgerald, L. F. (1987). *The career psychology of women*. Orlando, FL.: Academic Press.

- Burgess, D., & Borgida, E. (1998). Refining sex-role spillover theory: The role of gender subtypes, harasser attributions, and ambivalent sexism. *Social Cognition, 15*(4), 291-311.
- Chen, C. & Tyler, C. (2001). Lateral sensitivity modulation explains the flanker effect in contrast discrimination. *The Proceedings of the Royal Society (London) Series B, 268*, 509-516.
- Conway, M., Pizzamiglio, T., Mount, L. (1996). Status, communality, and agency: Implications for stereotypes of gender and other groups. *Journal of Abnormal & Social Psychology, 71*(1), 25-38.
- Crocker J, & Major B. (1989). Social stigma and self-esteem: the self-protective properties of stigma. *Psychological Review, 96*, 608–630.
- Crocker J, Major B, Steele C. 1998. Social stigma. In *Handbook of Social Psychology*, Ed. S Fiske, D Gilbert, G Lindzey, vol. 2, pp. 504–53. Boston, MA: McGraw-Hill
- Cuddy, J. C., Fiske, S. T., and Glick, P. (2004). When professionals become mothers, warmth doesn't cut the ice. *Journal of Social Issues, 60*(4), 701-718.
- Dar-Nimrod, I. & Heine, S. (2006). Exposure to scientific theories affects women's math performance. *Science, 314*(5798), 435-435.
- Darwin, C. (1871). *The descent of man and selection in relation to sex*. London: Murray.
- Eagly, A. (1987). *Sex differences in social behavior: A social-role interpretation*. NJ: Erlbaum.

- Eagly, A. H., & Steffen, V. (1984). Gender stereotypes stem from the distribution of women and men into social roles. *Journal of Personality and Social Psychology*, *46*, 735–754.
- Fiske, S. T. & Taylor, S. E. (1991). *Social cognition*. New York: McGraw Hill.
- Geary, D. C. (2006). *The origin of mind*. Washington D.C.: American Psychological Association.
- Glick, P. & Fiske, S. T. (1996). The ambivalent sexism inventory: Differentiating hostile and benevolent sexism. *Journal of Personality and Social Psychology*, *70*, 491-512.
- Glick, P., & Fiske, S. T. (2001). An ambivalent alliance: Hostile and benevolent sexism as complementary justifications for gender inequality. *American Psychologist*, *56*, 109–118.
- Goffman, E. (1963). *Stigma: Notes on the management of social identity*. New York: Prentice Hall.
- Gottschall, J. (March, 2007). Reading fiction with Darwin's eyes. *New Scientist*, *2593*, 39-42.
- Gramsci, A. (1971). *Selections from the prison notes*. New York: International Publishers.
- Greenwald, A.G., Nosek, B. A., Banaji, M.R. (2003). Understanding and using the Implicit Association Test: I. An improved scoring algorithm. *Journal of Personality & Social Psychology*, *85*(2), 197-216.
- Jackman, M. R., (1994). *The velvet glove*. Berkley, CA: University of California Press.
- Jost, J. T. (1997). An experimental replication of the depressed entitlement effect among women. *Psychology of Women Quarterly*, *21*, 387–393.

- Jost, J. (2001). Outgroup favoritism and the theory of system justification: An experimental paradigm for investigating the effects of socio-economic success on stereotype content. In G. Moskowitz (Ed.), *Cognitive social psychology: The Princeton symposium on the legacy and future of social cognition* (pp. 89–102). Mahwah, NJ: Erlbaum.
- Jost, J. (2004). A Perspectivist looks at the past, present, and (perhaps) the future of intergroup relations: A quixotic defense of system justification theory. In J. Jost, M. R. Banaji, & D. A. Prentice (Eds.) *Perspectivism in social psychology* (pp. 215-230). Washington D. C.: American Psychological Association.
- Jost, J., & Banaji, M. (1994). The role of stereotyping in system-justification and the production of false consciousness. *British Journal of Social Psychology*, 33, 1–27.
- Jost, J., Banaji, M., & Nosek, B. (2004). A decade of system justification theory: Accumulated evidence of conscious and unconscious bolstering of the status quo. *Political Psychology*, 25, 881-919.
- Jost, J. & Burgess, D. (2000). Attitudinal ambivalence and the conflict between group and system justification motives in low status groups. *Personality and Social Psychology Bulletin*, 26(3), 293-305.
- Jost, J. & Hunyady, O. (2002). The psychology of system justification and the palliative function of ideology. *European Review of Social Psychology*, 13, 111-153.
- Jost, J. T., & Kay, A. C. (2005). Exposure to benevolent sexism and complementary gender stereotypes: Consequences for specific and diffuse forms of system justification. *Journal of Personality and Social Psychology*, 88, 498-509.

- Jost, J., Pelham, B., Carvalho, M. (2002). Nonconscious forms of system justification: implicit and behavioral preferences for higher status groups. *Journal of Experimental Social Psychology, 38*, 586 – 602.
- Jost, J., Pelham, B., Sheldon, O., & Sullivan, B. (2003). Social inequality and the reduction of ideological dissonance on behalf of the system: Evidence of enhanced system justification among the disadvantaged. *European Journal of Social Psychology, 33*, 13–36.
- Kay, A., Jimenez, M. C., & Jost, J. T. (2002). Sour grapes, sweet lemons, and the anticipatory rationalization of the status quo. *Personality and Social Psychology Bulletin, 28*, 1300–1312.
- Kay, A. C., & Jost, J. T. (2003). Complementary justice: Effects of “poor but happy” and “poor but honest” stereotype exemplars on system justification and implicit activation of the justice motive. *Journal of Personality and Social Psychology, 85*, 823–837.
- Kay, A.C., Jost, J.T., & Young, S. (2005). Victim derogation and victim enhancement as alternate routes to system justification. *Psychological Science, 16*, 240-246.
- Kruglanski, A.W. (1996). Motivated social cognition: Principles of the interface. In E.T. Higgins & A.W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 493–520). New York: Guilford Press.
- Luhtanen, R., and Crocker, J. (1992). A collective self-esteem scale: Self-evaluation of one’s social identity. *Personality and Social Psychology Bulletin, 18*, 302–318.
- Major, B. (1994). From social inequality to personal entitlement: The role of social comparisons, legitimacy appraisals, and group memberships. *Advances in Experimental Social Psychology, 26*, 293–355.

- Major, B. & O'Brien, L. T. (2005). The social psychology of stigma. *Annual Review of Psychology*, 56, 393-421.
- Major, B., Quinton, W. J., & Schmader, T. (2003). Attributions to discrimination and self-esteem: Impact of group identification and situational ambiguity. *Journal of Experimental Social Psychology*, 39(2003), 220-231.
- Major, B. & Schmader, T. (2001). Legitimacy and the construal of social disadvantage. In J. T. Jost & B. Major (Ed.), *The psychology of legitimacy: Emerging perspectives on ideology, justice, and intergroup relations* (pp. 176-204). New York: Cambridge University Press.
- Major, B., McCoy, S., Schmader, T., Gramzow, R., Levin, S., & Sidanius, J. (2002). Perceived personal discrimination: The role of group status and legitimizing ideology. *Journal of Personality and Social Psychology*, 82, 269-282.
- Marx, K., & Engels, F. (1970). *The German ideology* (C. J. Arthur, Ed.). New York: International Publishers. (Original work published 1846).
- McCoy, S. K. & Major, B. (2000). Group identification moderates emotional responses to perceived prejudice. *Personality and Social Psychology Bulletin*, 29(8), 1005-1017.
- Monterosso, J., Royzman E.B., & Schwartz, B. (2005). Explaining away responsibility: Effects of scientific explanation on perceived culpability. *Ethics & Behavior*, 15, 139.
- Pelham, B. W., & Hetts, J. J. (2001). Underworked and overpaid: Elevated entitlement in men's self-pay. *Journal of Experimental Social Psychology*, 37(2), 93-103.

- Rasinski, K., Tyler, T., & Fridkin, K. (1985). Exploring dimensions of legitimacy: the mediating effects of personal and nonpersonal legitimacy on leadership endorsement and system support. *Journal of Personality and Social Psychology, 49*, 386-394.
- Ridgeway, C. L. (1991). The social construction of status value: Gender and other nominal characteristics. *Social Forces, 70*, 367-386.
- Ridgeway, C. L. & Berger, J. (1986). Expectations, legitimization, and dominance behavior in task groups. *American Sociological Review, 51*, 603-617.
- Robinson, R. J. & Kray, L. (2001). Status versus quo: Näive realism and the search for social change and perceived legitimacy. In J. T. Jost & B. Major (Ed.), *The psychology of legitimacy: Emerging perspectives on ideology, justice, and intergroup relations* (pp. 135-156). New York: Cambridge University Press.
- Schmader, T. (2002). Gender identification moderates the effects of stereotype threat on women's math performance. *Journal of Experimental Social Psychology, 38*, 194-201.
- Schmader, T., Johns, M., Barquissau, M. (2004). The costs of accepting gender differences: the role of stereotype endorsement in women's experience in the math domain. *Sex Roles, 50*, 835- 850.
- Schmader, T., Major, B., Eccleston, C., & McCoy, S. (2001). Devaluing domains in response to threatening intergroup comparisons: Perceived legitimacy and the status value asymmetry. *Journal of Personality and Social Psychology, 80*, 782-796.
- Smith, R. H. (2000). Assimilative and contrastive emotional reactions to upward and downward social comparisons. In J. Suls & L. Wheeler (Eds.), *Handbook of social comparison: Theory and research* (pp. 173-200). New York: Kluwer/Plenum.

- Smith, J. L. (2004). Understanding process of stereotype threat: A review of mediational variables and new performance goal directions. *Educational Psychology Review*, 16(3), 177 – 206.
- Smith, R. H., Parrott, W. G., Ozer, D., & Moniz, A. (1994). Subjective injustice and inferiority as predictors of hostile and depressive feelings of envy. *Personality and Social Psychology Bulletin*, 20, 705—711.
- Steele, C. M. (1997). A threat in the air. *American Psychologist*, 52(6), 613-629.
- Svinicki, M. D. (2006). Helping students do well in class. *Association for Psychological Science Observer*, 19(10), 31-35.
- Swim J., Aikin, K., Hall W., and Hunter, B. (1995). Sexism and racism: Old-fashioned and modern prejudices. *Journal of Personality and Social Psychology*, 68(2), 99-214.
- Tajfel, H., & Turner, J. (1986). The social identity theory of intergroup behavior. In S. Worchel & W. G. Austin (Eds.), *The psychology of intergroup relations* (pp. 7–24). Chicago: Nelson-Hall.
- Tesser, A., & Paulhus, D. (1983). The definition of self: Private and public self-evaluation management. *Journal of Personality and Social Psychology*, 44, 672-682.
- Tyler, T (2006). Psychological perspectives on legitimacy and legitimation. *Annual Review of Psychology*, 57, 375-400.
- Weber, M. (1947). *The theory of social and economic organization* (A. M. Henderson and Talcott Parsons, Trans.), New York: Free Press.
- Weber, U., Mummendey, A, & Waldzus, S. (2002). Perceived legitimacy of intergroup status differences: Its prediction by relative ingroup prototypicality. *European Journal of Social Psychology*, 32(4), 449-470.

Zelditch, M., (2001). Theories of legitimacy. *The psychology of legitimacy: emerging perspectives on ideology, justice, and intergroup relations*. In J. T. Jost & B. Major (Ed.), *The psychology of legitimacy: Emerging perspectives on ideology, justice, and intergroup relations* (pp. 33-53). New York: Cambridge University Press.

APPENDICES

Appendix A

Participant Consent Form

Project Title: The Importance of Stereotype Consistency for Outgroup Favoritism

Experimenter: Dr. John Chaney and Christina Almstrom, M.A., M.S.

Purpose: The current experiment is attempting to understand academic achievement and learning styles among men and women.

Procedures: In participating in this experiment, you will be asked to provide some demographic information, read one essay and answer a few questions. After you complete the questions pertaining to the essay you will be asked to rate on a 7-point Likert scale ranging from 1 (*Not at All*) to 7 (*Extremely*) the extent to which you think each of the words listed describes Men and Women in general. The only academic performance information requested is your year in college.

Length of Participation: It is estimated the appointment will take no longer than 30 minutes. Remember that you are not required to participate in this experiment and you will not be penalized for declining to do so. You are free to withdraw at any time without penalty. If you do decide to participate you will be debriefed regarding the nature of the experiment at its conclusion and contacted six months after participation to see if you have any remaining questions.

Confidentiality and Privacy: The records of this study will be kept private. Any written results will discuss group findings and will not include information that will identify you. Instructors will be notified that students have participated in a study and the amount of time he/she spent in participation. Because this report is routed through the Psychology Department's central subject pool database (SONA system), instructors cannot determine which study you took part in. All of this information will remain confidential. Research records will be stored securely and only researchers and individuals responsible for research oversight will have access to the records. Strict procedures are implemented to ensure the separation of data from subject name. First, only lab members have access (e.g., a key) to the room in which data is stored. Secondly, the participant's data is stored completely separate from their consent form and the email you choose to provide. The data is stored with a coded number which has no reference to your consent form or email address (e.g., your name and email). All material will be kept in a secure filing cabinet within the Behavioral Health Research Laboratory in room 230 of North Murray Hall. Therefore, all information provided will be anonymous.

Risks: The risks in this study are minimal and do not exceed those ordinarily encountered in daily life. A debriefing will be provided as well as a question and answer session.

Benefits: As a research participant, you will be exposed to the conduct of scientific psychological research and may gain insight into your own learning style. Through research like this, assessments and treatments can be developed to help people with psychological problems. You will also receive one half research participation credit for your introductory psychology course. As your instructor has informed you, there are other opportunities for you to receive credit, including departmental colloquia, research papers, or participation in other projects. If you decide not to participate you can talk with your instructor about these other opportunities.

If you have any additional questions you can contact the primary investigator of this experiment at Christina.almstrom@okstate.edu or Dr. John Chaney at john.chaney@okstate.edu (405-744-5703). If you have question regarding your rights as a research participant, you may contact the chair of the IRB, Dr. Shelia Kennison, 219 Cordell North, 405-744-1676 or irb@okstate.edu.

I have been fully informed about the procedures listed here. I am aware of what I will be asked to do and of the risks and benefits of this study. I also understand the following statements:

I certify that I am between 18 and 55 years of age and recognize myself as a *female*. You must also enter the correct paraphrase to continue.

By clicking on the button labeled "I consent" and completing the survey you are agreeing to the terms and conditions outlined here.

Provide Name for Consenting Purposes:

By clicking continue, I hereby understand and agree to the conditions of the above listed research project and the Affirmation Statement. Before continuing to this online survey, I will print this page or copy and save this Informed Consent Form in a word document for my own records.

Please Press Click Once You Have Provided the Correct Paraphrase:

Appendix B

Legitimacy Manipulation Script

This essay is was obtained from and reproduced with permission of:

Dar-Nimrod, I. & Heine, S. (2006). Exposure to scientific theories affects women's math performance. *Science*, 314(5798), 435-435.

Genes are involved in mathematical abilities, Researchers Say

By DR. ERIN A. GOODEY

The biological camp in a longstanding controversial issue, which has drawn a lot of attention over the past few decades, has received the most convincing support to date in results released recently from an international group of genetic researchers. The researchers claim to find genetic bases for well-documented gender differences in mathematical reasoning abilities. The study shows that innate differences exist between males and females in mathematical reasoning.

The new research is the largest published study of polygenetic effects to test the interaction between different genes and higher cognitive functions. One of the main findings demonstrates an interaction of 2 genes located on the Y chromosome (which is found only in males) with genes on chromosome 5 and chromosome 7. This interaction produces hormonal changes guided by the hypothalamus. The onset of the hormonal release is guided by activation of the Brodmann's area in the frontal lobe. This area is activated when processing mathematical oriented problems. F-MRI scans show these hormonal changes create an increase in the amount of ATP (the body's currency of energy) molecules directed to the hippocampus when a person is engaged in higher mathematical reasoning tasks. The increased energy to this area of the brain, considered the "working memory organ", enables the person to retain more accessible short term memory information while concentrating, a critical element in mathematical reasoning capabilities. This genetic difference seems to explain the findings that boys show superior performance by having on average a grade 5 percentile points higher than girls.

The research was supported by the National Institute of Health (NIH), which provided the international team of researchers, led by Dr. Mark Goldstein from the Harvard Microbiology Research Institute. "This study is both statistically and clinically significant," said the leading author, Dr. Karen Dineen, director of child and adolescent psychiatry at the University of Wisconsin Medical Branch. "Its magnitude sheds new light on a long discourse concerning the role genes and the environment play in mathematical reasoning."

Appendix C

Legitimacy Attention to Task Questions

1. What is the main argument of this article?
 - a. Males are better at math than females
 - b. Females are better at math than males
 - c. Males have a genetic math disadvantage over females
 - d. Males have a genetic math advantage over females *
 - e. Males and Females both are genetically equipped for math

2. According to the article, what is the cause of math differences between the sexes?
 - a. The interaction of two genes located on the Y-chromosome in males*
 - b. Higher levels of cognitive thinking are encoded differently
 - c. More areas of the brain are triggered for enhanced mathematical attention
 - d. Enhanced long term memory ability
 - e. Through clearer visual representations

Appendix D

Illegitimacy Manipulation Script

This essay is was obtained from and reproduced with permission of:

Dar-Nimrod, I. & Heine, S. (2006). Exposure to scientific theories affects women's math performance. *Science*, 314(5798), 435-435.

Expectations are responsible for gender differences in mathematical abilities, Researchers Say

By DR. ERIN A. GOODEY

The environmental camp in a longstanding controversial issue, which has drawn a lot of attention over the past few decades, has received the most convincing support to date in results released recently from an international group of psychology researchers. The researchers claim to find reasons for well-documented gender differences in mathematical reasoning abilities. The results show that there are no innate differences between males and females in mathematical reasoning.

The new research is the largest published study of differences among males and females in mathematical reasoning. Unlike previous research in the field, the present study followed both a genetic research design and a cognitive research design. In the genetic paradigm the researchers failed to find any gender differences on mathematical tasks.

Using an ingenious cognitive paradigm, the researchers manipulated the teachers' expectations of students. In the experimental condition, the researchers visited schools as educational psychologists and gave students a bogus mathematical test at the beginning of the year. Afterwards, they provided the teachers with fake reports that illustrated that the girls in the class were better in mathematics. In the control condition there was no manipulations of teachers' expectations. The findings showed that the girls in the experimental condition were superior to the boys if the teachers' expectations were manipulated. In the control conditions, boys showed superior performance by having on average a grade 5 percentile points higher than the girls.

The research was supported by the National Institute of Health (NIH), which provided the international team of researchers, led by Dr. Mark Goldstein from the Harvard Gender Research Institute. "This study is both statistically and clinically significant," said the lead author, Dr. Karen Dinear, director of child and adolescent psychiatry at the University of Wisconsin Medical Branch. "Its magnitude sheds new light on a long discourse concerning the role genes and the environment play in mathematical reasoning."

Appendix E

Illegitimacy Manipulation Check

1. What is the main argument of this article?
 - a. Mathematics should not be taught in co-ed classes
 - b. Teachers should be aware of gender differences
 - c. No reasonable explanations can account for differences in mathematical abilities
 - d. Gender differences cannot be accounted for by innate qualities*
 - e. Girls are not putting enough effort into their math studies

2. According the article, how do math differences occur amongst boys & girls?
 - a. Teachers expectations directly affect performance *
 - b. Boys were disruptive affecting girls' concentration
 - c. Girls did not show as much interest in math as boys
 - d. Teachers' high expectations led girls to be more anxious and boys to be more determined
 - e. Boys played with toys that involved more mathematical reasoning

Helping Students Do Well in Class by Goal-Oriented Studying

By Dr. Marilla D. Svinicki

This article discusses what teachers need to know in order to help students think about goal oriented studying, not just reading or the number of hours spent studying but having a clear specification of actual behaviors to achieve understanding. Having a goal when you study is much more efficient and effective than just sitting down and reading.

Here is where instructors can be most helpful to students. We want them to set “understanding” goals for their studying, so we should help them recognize what that means in this context. For example, when I say I want students to understand how theory informs practice in psychology, I mean that I want them to be able to explain a theory in everyday language, recognize examples of its application, suggest examples of its application to their own actions as practitioners, and possibly even provide arguments for and against using a theory as a basis for practice in alternative application settings. Those goals serve as clear checkpoints that students can use to measure their understanding of the theories. When they study, I would expect them to keep working at it until they can do those things with a given theory. They will not be able to do that just by reading. Good goals require that students make connections between what they are learning and what they already know, a key concept in learning and between what they are learning and how they intend to use that learning in the future, an important foundation for transfer.

Setting goals reminds me that setting clear goals for a unit or an activity helps students. Why are we practicing this stuff in this way? Helping them understand the answer will both make what we do more productive from a learning standpoint and serve as a good model of strategic learning for them. In class I should share my goals for each activity. In addition, I should verbally and openly model the process of goal setting so that in a type of cognitive apprenticeship, students can see how a skilled learner approaches setting goals.

Appendix G

Control Condition Check

1. What is the main argument of this article?
 - a. Setting goals too high interferes with learning
 - b. Goals need to be long term as well as short term
 - c. No reasonable explanation can account for why setting goals works
 - d. Setting goals is more than just reading or studying *
 - e. Whether goals work depends on the individual setting them

2. A characteristic of good goals described in the article was?
 - a. Making connections between what is being learned and what is already known *
 - b. Being deduced from good theory
 - c. Easy to understand
 - d. Defining a specific amount of study time
 - e. Believing in yourself

Appendix H

Dependent Measure

On the scale below **check the box** corresponding to the number that indicates the extent to which you think each of the words describes Men **AND** Women in general. Please rate each word for both Men and Women.

EXAMPLE:	Men							Women						
Experienced	1	2	3	4	5	6	7	1	2	3	4	5	6	7
	<i>Not At All</i>				<i>Extremely</i>			<i>Not At All</i>				<i>Extremely</i>		
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
1. Committed	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2. Responsible	1	2	3	4	5	6	7	1	2	3	4	5	6	7
3. Devoted	1	2	3	4	5	6	7	1	2	3	4	5	6	7
4. Confident	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5. Reliable	1	2	3	4	5	6	7	1	2	3	4	5	6	7
6. Productive	1	2	3	4	5	6	7	1	2	3	4	5	6	7
7. Dependable	1	2	3	4	5	6	7	1	2	3	4	5	6	7
8. Ambitious	1	2	3	4	5	6	7	1	2	3	4	5	6	7
9. Honest	1	2	3	4	5	6	7	1	2	3	4	5	6	7
10. Intelligent	1	2	3	4	5	6	7	1	2	3	4	5	6	7
11. Romantic	1	2	3	4	5	6	7	1	2	3	4	5	6	7

	<i>Not At All</i>							<i>Extremely</i>						
	1	2	3	4	5	6	7	1	2	3	4	5	6	7
12. Soft	1	2	3	4	5	6	7	1	2	3	4	5	6	7
13. Quiet	1	2	3	4	5	6	7	1	2	3	4	5	6	7
14. Warm	1	2	3	4	5	6	7	1	2	3	4	5	6	7
15. Tender	1	2	3	4	5	6	7	1	2	3	4	5	6	7
16. Emotional	1	2	3	4	5	6	7	1	2	3	4	5	6	7
17. Sensitive	1	2	3	4	5	6	7	1	2	3	4	5	6	7
18. Gentle	1	2	3	4	5	6	7	1	2	3	4	5	6	7
19. Sympathetic	1	2	3	4	5	6	7	1	2	3	4	5	6	7
20. Nurturing	1	2	3	4	5	6	7	1	2	3	4	5	6	7

Appendix I

Debriefing Protocol (Legitimate Condition)

The research essay you were just presented with is actually fictitious. It is not based on any prevailing theory and was completely fabricated by the experimenters of this study.

We apologize that we could not tell you fully the purpose of the experiment, but we were trying to see how you would rate males and females on certain traits if you were led to believe that achievement differences between males and females were legitimate and due to actual cognitive ability differences or genetically based. It was necessary to convince you that the achievement differences were legitimate. *Again, the research essays you read were complete fabrications, a.k.a. this article does not exist.* The true purpose of the study was to find out what would happen if we convinced you that these differences are based on actual cognitive abilities and not on gender discrimination. We suspect that, under these conditions, males will be rated as possessing more achievement-related traits (e.g., intelligent, competent) and that females will rate themselves higher on achievement-unrelated traits, like friendly, warm, etc. *Let us reintegrate, the article you just read is completely bogus and was fictitiously constructed by the experimenters and therefore the article is not real.*

Furthermore, if you would like to know more regarding the theoretical basis of this experiment we have provided three peer reviewed articles for you. The articles can be accessed at the below links:

<http://www.psyencelab.com/archives/2006/10/>

<http://osu.cmapsych.net/gender/furtherReading.php>

Again, let me remind you that your responses are completely confidential and your consent form with your name cannot be matched up in any way to the data we collected from you. If you have any additional questions about the study, or would like to know what our ultimate findings are, feel free to contact the graduate student in charge of the study, Christina Almstrom, at Christina.almstrom@okstate.edu using the information on your copy of the consent form.

I know you can understand why it is important that you not discuss the research with anyone else because this might contaminate their participation as potential future subjects.

Also, if you think of any questions, or you just want to talk further about your participation or your feelings please feel free to contact me at anytime

Participants will be contacted six month after their participation to see if they have any remaining questions or concerns.

Finally, in the event that you experienced undue emotional distress as a function of your participation in this study, we have prepared a handout listing a variety of campus and community resources to assist you. Many are free of charge. We sincerely appreciate your participation.

COMMUNITY SERVICE

Reach-out Hotline – Oklahoma City, 1-800-522-9054

Psychological Services Center – 118 (North Murray Hall, 744-5957)

- The center provides assistance to any interested individual from Oklahoma State University or the surrounding area. The center is open Monday, Tuesday, and Thursday from 8 a.m. to 9 p.m. and Wednesday and Friday from 8 a.m. to 5 p.m. There is a graduate fee for those using this service. All appointments are confidential.

Personal Counseling Services – (310 Student Union, 744-5472 or 002 Student Health Center, 744-7007)

- The Personal Counseling Center Services supports the personal, social, and intellectual growth of members of the University community. They provide a broad spectrum of services to OSU students.
- These services include individual and group counseling relating to areas of career/life planning, study skills, and personal concerns including stress, anxiety, depression, relationships, eating disorders, and substance abuse. Counseling sessions are provided at a minimal fee. All appointments are confidential.

Appendix J

Debriefing Protocol (Illegitimate Condition)

The research essay you were just presented with is actually fictitious. It is not based on any prevailing theory and was completely fabricated by the experimenters of this study.

We apologize that we could not tell you fully the purpose of the experiment, but we were trying to see how you would rate males and females on certain traits if you were led to believe that achievement differences between males and females were not legitimate and were actually due to biased hiring practices. It was necessary to convince you that the achievement differences were not legitimate. The true purpose of the study was to find out what would happen if we convinced you that these differences are based on discrimination and not on actual differences in cognitive ability. We suspect that, under these conditions, females will rate themselves as possessing the same level of achievement-related traits (e.g., intelligent, competent) as males people. *Let us reintegrate, the article you just read is completely bogus and was fictitiously constructed by the experimenters and therefore the article is not real.*

Furthermore, if you would like to know more regarding the theoretical basis of this experiment we have provided three peer reviewed articles for you. The articles can be accessed at the below links:

<http://www.psyencelab.com/archives/2006/10/>

<http://osu.cmapsych.net/gender/furtherReading.php>

Again, let me remind you that your responses are completely confidential and your consent form with your name cannot be matched up in any way to the data we collected from you. If you have any additional questions about the study, or would like to know what our ultimate findings are, feel free to contact the graduate student in charge of the study, Christina Almstrom, at Christina.almstrom@okstate.edu using the information on your copy of the consent form.

I know you can understand why it is important that you not discuss the research with anyone else because this might contaminate their participation as potential future subjects.

Also, if you think of any questions, or you just want to talk further about your participation or your feelings please feel free to contact me at anytime

Participants will be contacted six month after their participation to see if they have any remaining questions or concerns.

Finally, in the event that you experienced undue emotional distress as a function of your participation in this study, we have prepared a handout listing a variety of campus and community resources to assist you. Many are free of charge. We sincerely appreciate your participation.

COMMUNITY SERVICE

Reach-out Hotline – Oklahoma City, 1-800-522-9054

Psychological Services Center – 118 (North Murray Hall, 744-5957)

- The center provides assistance to any interested individual from Oklahoma State University or the surrounding area. The center is open Monday, Tuesday, and Thursday from 8 a.m. to 9 p.m. and Wednesday and Friday from 8 a.m. to 5 p.m. There is a graduate fee for those using this service. All appointments are confidential.

Personal Counseling Services – (310 Student Union, 744-5472 or 002 Student Health Center, 744-7007)

- The Personal Counseling Center Services supports the personal, social, and intellectual growth of members of the University community. They provide a broad spectrum of services to OSU students.
- These services include individual and group counseling relating to areas of career/life planning, study skills, and personal concerns including stress, anxiety, depression, relationships, eating disorders, and substance abuse. Counseling sessions are provided at a minimal fee. All appointments are confidential.

Appendix K

Debriefing Protocol (Control Condition)

We apologize that we could not tell you fully the purpose of the experiment. You were randomly assigned to the control group, meaning you did not participate in either of the treatment conditions. In other words, your participation in the control condition enabled us to obtain a baseline of how you rate males and females on certain traits of achievement differences without any experimental manipulation. The true purpose of the study was to find out what would happen if we convinced individuals that these differences are based on discrimination and not on actual differences in cognitive ability. We suspect that, under these conditions, females will rate themselves as possessing the same level of achievement-related traits (e.g., intelligent, competent) as males people. We are more than happy to share the results of this experiment upon completion of data collection. Please contact Christina.almstrom@okstate.edu.

Furthermore, if you would like to know more regarding the theoretical basis of this experiment we have provided three peer reviewed articles for you. The articles can be accessed at the below links:

<http://www.psyencelab.com/archives/2006/10/>

<http://osu.cmapsych.net/gender/furtherReading.php>

Again, let me remind you that your responses are completely confidential and your consent form with your name cannot be matched up in any way to the data we collected from you. If you have any additional questions about the study, or would like to know what our ultimate findings are, feel free to contact the graduate student in charge of the study, Christina Almstrom, at Christina.almstrom@okstate.edu using the information on your copy of the consent form.

I know you can understand why it is important that you not discuss the research with anyone else because this might contaminate their participation as potential future subjects.

Also, if you think of any questions, or you just want to talk further about your participation or your feelings please feel free to contact me at anytime

Participants will be contacted six month after their participation to see if they have any remaining questions or concerns.

Finally, in the event that you experienced undue emotional distress as a function of your participation in this study, we have prepared a listing of a variety of campus and community resources to assist you. Many are free of charge. We sincerely appreciate your participation.

COMMUNITY SERVICE

Reach-out Hotline – Oklahoma City, 1-800-522-9054

Psychological Services Center – 118 (North Murray Hall, 744-5957)

- The center provides assistance to any interested individual from Oklahoma State University or the surrounding area. The center is open Monday, Tuesday, and Thursday from 8 a.m. to 9 p.m. and Wednesday and Friday from 8 a.m. to 5 p.m. There is a graduate fee for those using this service. All appointments are confidential.

Personal Counseling Services – (310 Student Union, 744-5472 or 002 Student Health Center, 744-7007)

- The Personal Counseling Center Services supports the personal, social, and intellectual growth of members of the University community. They provide a broad spectrum of services to OSU students.
- These services include individual and group counseling relating to areas of career/life planning, study skills, and personal concerns including stress, anxiety, depression, relationships, eating disorders, and substance abuse. Counseling sessions are provided at a minimal fee. All appointments are confidential.

COMMUNITY SERVICE

Reach-out Hotline – Oklahoma City, 1-800-522-9054

Psychological Services Center – 118 (North Murray Hall, 744-5957)

- The center provides assistance to any interested individual from Oklahoma State University or the surrounding area. The center is open Monday, Tuesday, and Thursday from 8 a.m. to 9 p.m. and Wednesday and Friday from 8 a.m. to 5 p.m. There is a graduate fee for those using this service. All appointments are confidential.

Personal Counseling Services – (310 Student Union, 744-5472 or 002 Student Health Center, 744-7007)

- The Personal Counseling Center Services supports the personal, social, and intellectual growth of members of the University community. They provide a broad spectrum of services to OSU students.
- These services include individual and group counseling relating to areas of career/life planning, study skills, and personal concerns including stress, anxiety, depression, relationships, eating disorders, and substance abuse. Counseling sessions are provided at a minimal fee. All appointments are confidential.

Table 1.

Stereotype Perception x Legitimacy Condition Means and Standard Deviations.

	Question 1	Question 2	Question 3
Legitimate	3.45(1.38)	3.29(1.26)	3.66(1.58)
Control	3.99(1.71)	3.13(1.68)	4.04(1.89)
Illegitimate	3.29(1.26)	2.66(1.24)	3.90(1.49)

Table 2.

Legitimacy Manipulation Means and Standard Deviations.

	Fair	Just	Legitimate
Legitimate	4.20(1.27)	3.85(.94)	3.33(1.21)
Illegitimate	3.88(1.48)	3.54(1.12)	3.41(1.16)

Table 3.

Legitimacy x Status Domain x Sex Means and Standard Deviations.

	Status Relevant		Status Irrelevant	
	Women	Men	Women	Men
Legitimate	5.24(.67)	4.79(.73)	5.75(.56)	3.31(.90)
Control	5.33(.77)	4.66(.81)	5.70(.67)	3.54(.83)
Illegitimate	5.28(.79)	4.72(.79)	5.64(.60)	3.53(.93)

Table 4.

Legitimacy x Status Domain Means and Standard Deviations for Women – Men

Difference Scores

	Status Relevant	Status Irrelevant
Legitimate	.45(.79)	2.45(1.01)
Control	.67(.89)	2.17(1.09)
Illegitimate	.55(.73)	2.11(1.01)

Table 5.

Legitimacy x Status Analysis of Variance for Women – Men Difference Scores.

Source	SS	df	MS	<i>F</i>	<i>p</i>	η_p^2
Legitimacy	1.17	2	0.58	0.46	0.63	0.004
Error	306.52	243	1.26			
Status	348.37	1	348.37	752.22	0.00	0.756
Legitimacy x Status	6.25	2	3.12	6.75	0.00	0.053
Error	112.54	243	0.46			

Table 6.

Correlation Between Gender Identification and Status Domain x Legitimacy Condition.

	Status Relevant	Status Irrelevant
Legitimate	-0.01	0.09
Control	0.11	0.13
Illegitimate	0.04	0.17

Table 7. .

Legitimacy x Status Domain Means and Standard Deviations for Women – Men
Difference Scores Using the Four Highest and Lowest Status Traits

	Status Relevant	Status Irrelevant
Legitimate	-.37(.99)	2.93(1.15)
Control	-.01(.94)	2.71(1.44)
Illegitimate	.09(.86)	2.71(1.31)

Table 8.

Legitimacy x Status Analysis of Variance for Women – Men Difference Scores Using the Four Highest and Lowest Status Traits.

Source	SS	df	MS	<i>F</i>	<i>p</i>	η_p^2
Legitimacy	1.14	2	0.57	0.39	0.68	0.003
Error	358.67	243	1.48			
Status	1022.43	1	1022.43	913.63	0.00	0.790
Legitimacy x Status	10.66	2	5.33	4.77	0.01	0.038
Error	271.94	243	1.12			

Table 9.

Means and Standard Deviations for Women – Men Difference Scores Using Confident,
the Highest Status Value Trait

	Legitimate	Control	Illegitimate
Men	6.07(.86)	5.79(.98)	5.50(1.08)
Women	4.26(1.13)	4.70(1.39)	4.70(1.21)

Table 10.

Legitimacy x Status Domain Means and Standard Deviations for Women – Men
Difference

Scores Using the Three Highest and Lowest Status Traits Excluding Confident.

	Status Relevant	Status Irrelevant
Legitimate	.12(1.12)	3.04(1.18)
Control	.35(1.05)	2.90(1.49)
Illegitimate	.38(.99)	2.93(1.46)

Table 11.

Legitimacy x Status Analysis of Variance for Women – Men Difference Scores Using the
Three Highest and Lowest Status Traits Excluding Confident.

Source	SS	df	MS	<i>F</i>	<i>p</i>	η_p^2
Legitimacy	0.49	2	0.25	0.13	0.87	0.001
Error	447.75	243	1.84			
Status	881.79	1	881.79	743.31	0.00	0.754
Legitimacy x Status	3.82	2	1.91	1.61	0.20	0.013
Error	288.27	243	1.19			

Figure Captions

Figure 1. Primary hypothesis for mean difference scores (Women – Men) across Status Domains and Legitimization conditions.

Figure 2. Stereotype perception by question: Question 1 “Do you think men have greater success than women in math and science?” Question 2 “Do you think there is a genetic reason for the differences between men and women in math and science?” Question 3 “Do you think the differences between men and women in math and science result from their past experiences rather than genetics?”

Figure 3. Legitimacy manipulation by question: Question 1 “Do you think these success differences are fair or unfair?” Question 2 “Do you think these differences are just or unjust?” Question 3 “Do you think these differences are legitimate or illegitimate?”

Figure 4. Mean ratings for men and women on status relevant and status irrelevant items across conditions of legitimacy.

Figure 5. Mean difference scores (Women – Men) for status relevant and status irrelevant items across conditions of legitimacy.

Figure 6. Ratings from all participants used to compare the stereotypes for men and women relative to the normed value of the trait for achieving status.

Figure 7. Mean difference scores (Women – Men) using the four highest status relevant and four lowest status irrelevant items across conditions of legitimacy.

Figure 8. Mean difference scores (Women – Men) using the highest valued status relevant trait, Confident.

Figure 9. Mean difference scores (Women – Men) using the three highest status relevant items excluding Confident and the three lowest status irrelevant items across conditions of legitimacy.

Figure 10. A comparison of the distribution of trait ratings for men and women examined by high and low, relevant and irrelevant, status quadrants.

Figure 11. A comparison of the congruence between the stereotypes for men and women with the hierarchical value of the trait for achieving status.

Figure 1

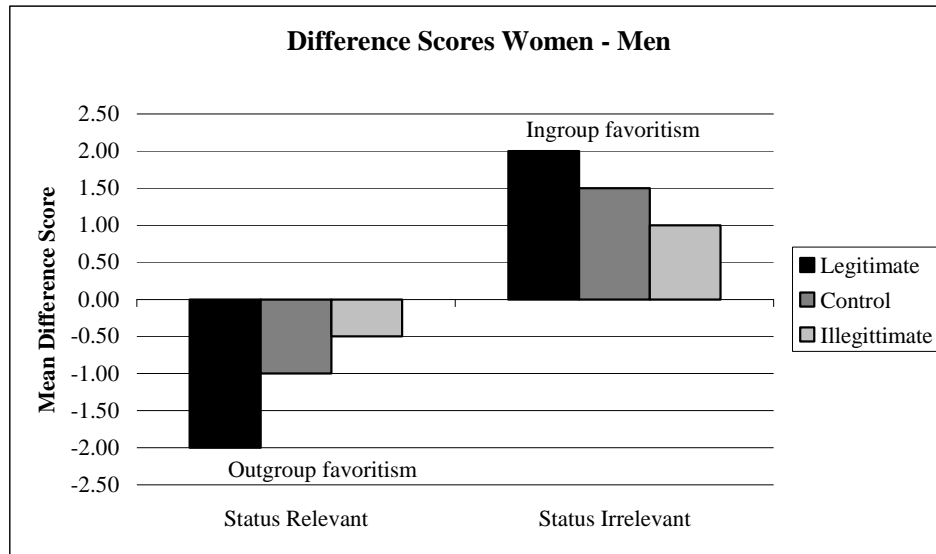


Figure 2

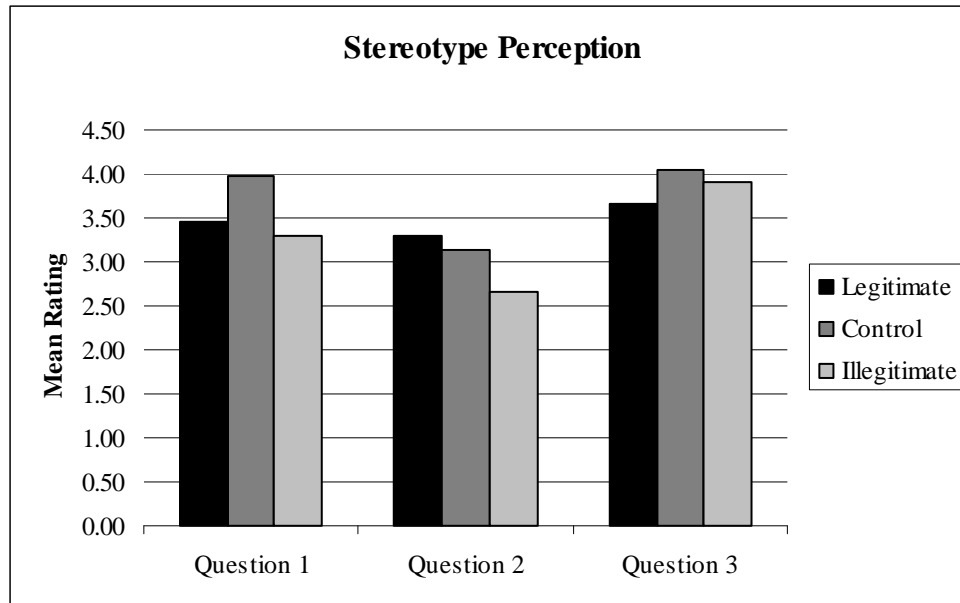


Figure 3

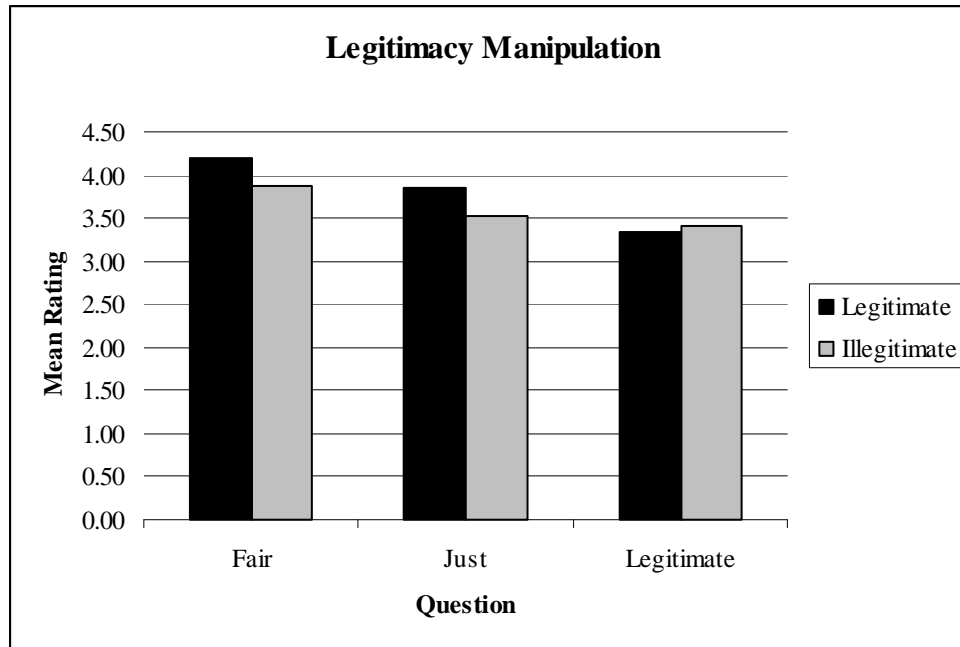


Figure 4

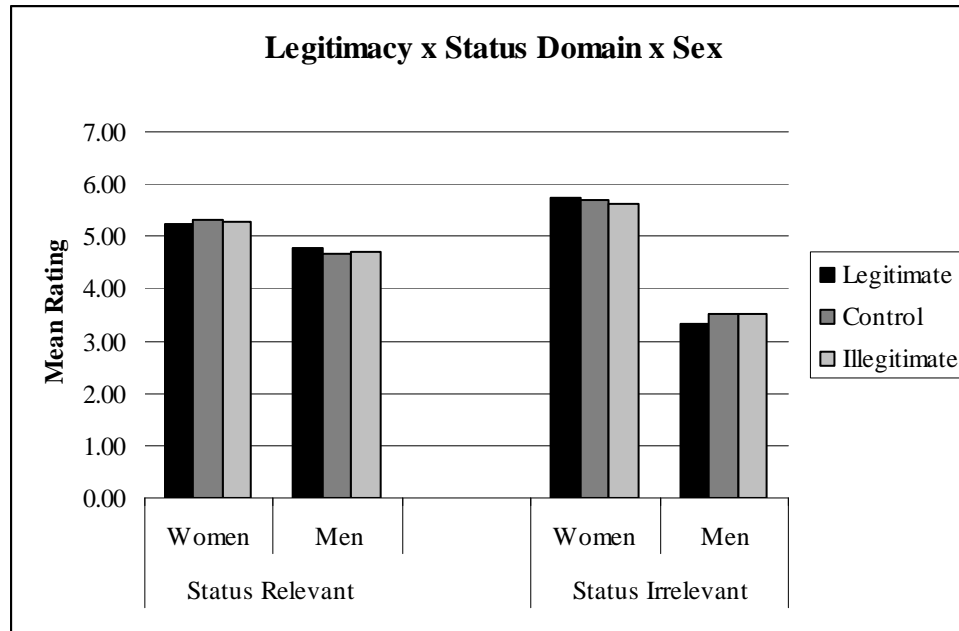


Figure 5

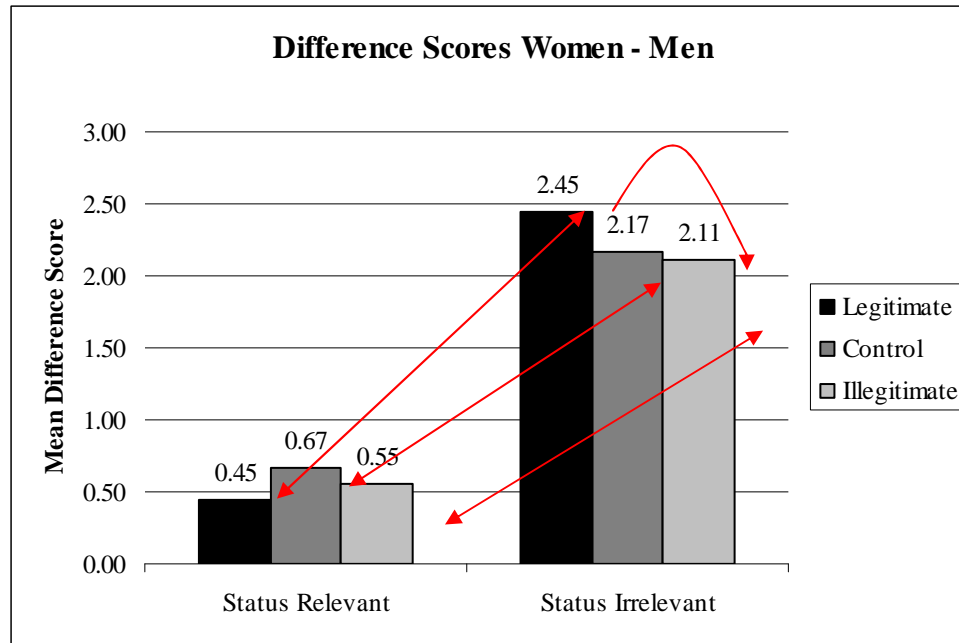


Figure 6

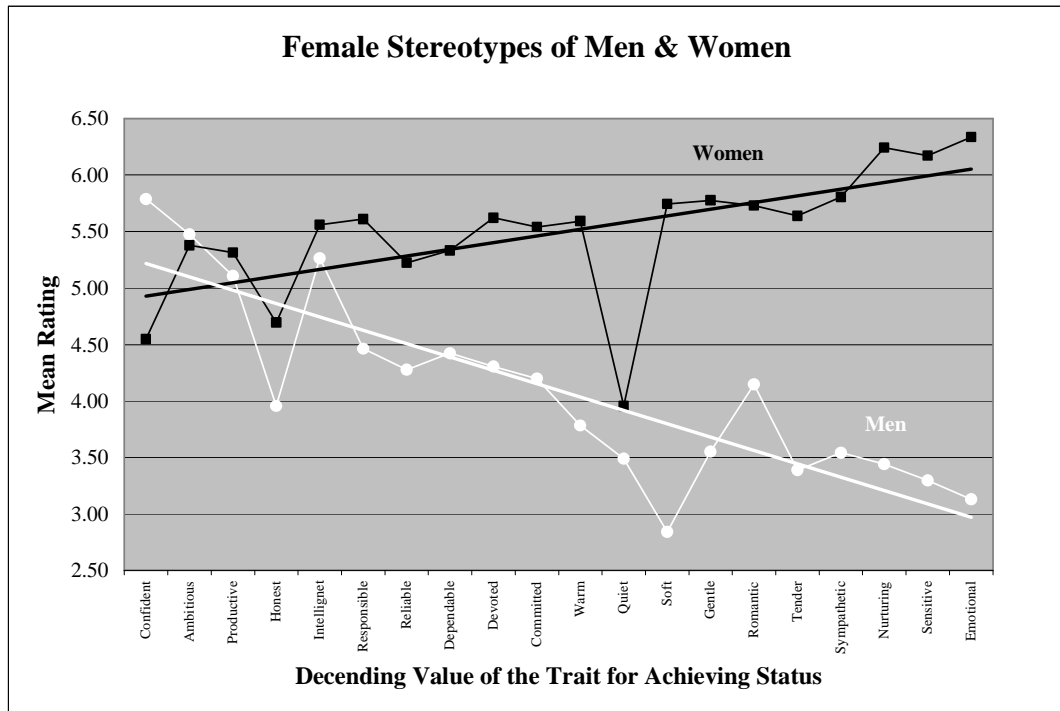


Figure 7

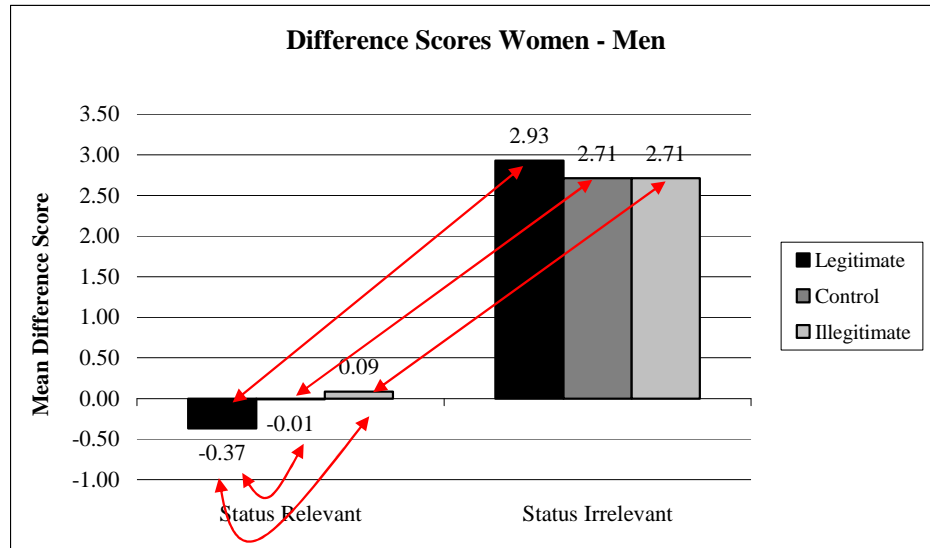


Figure 8

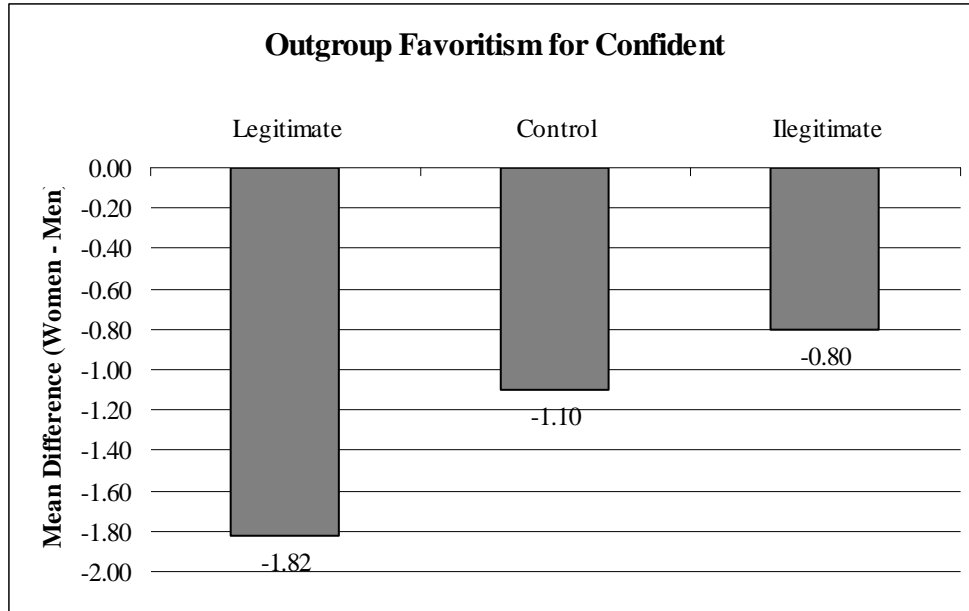


Figure 9

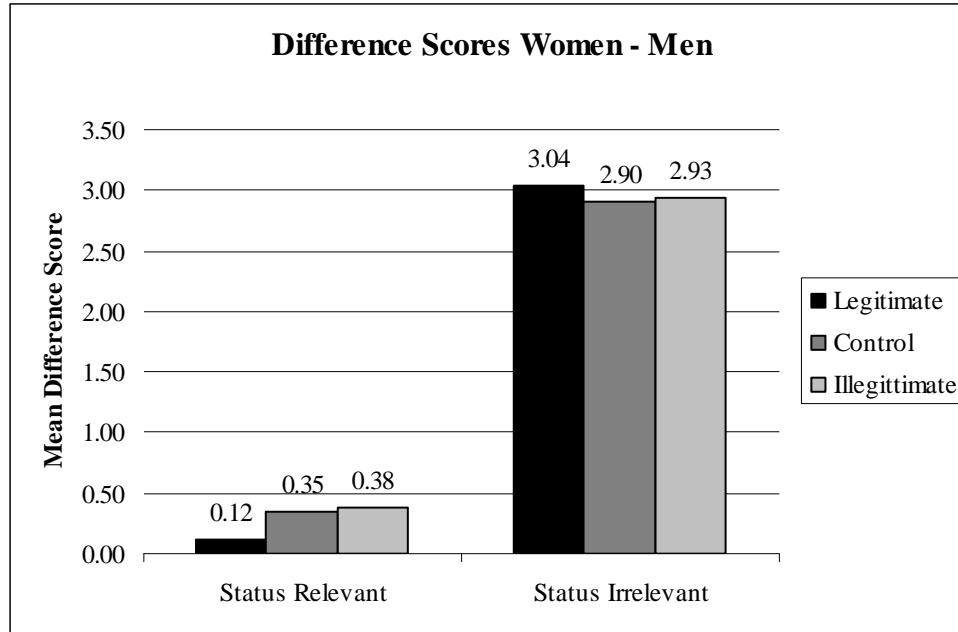


Figure 10

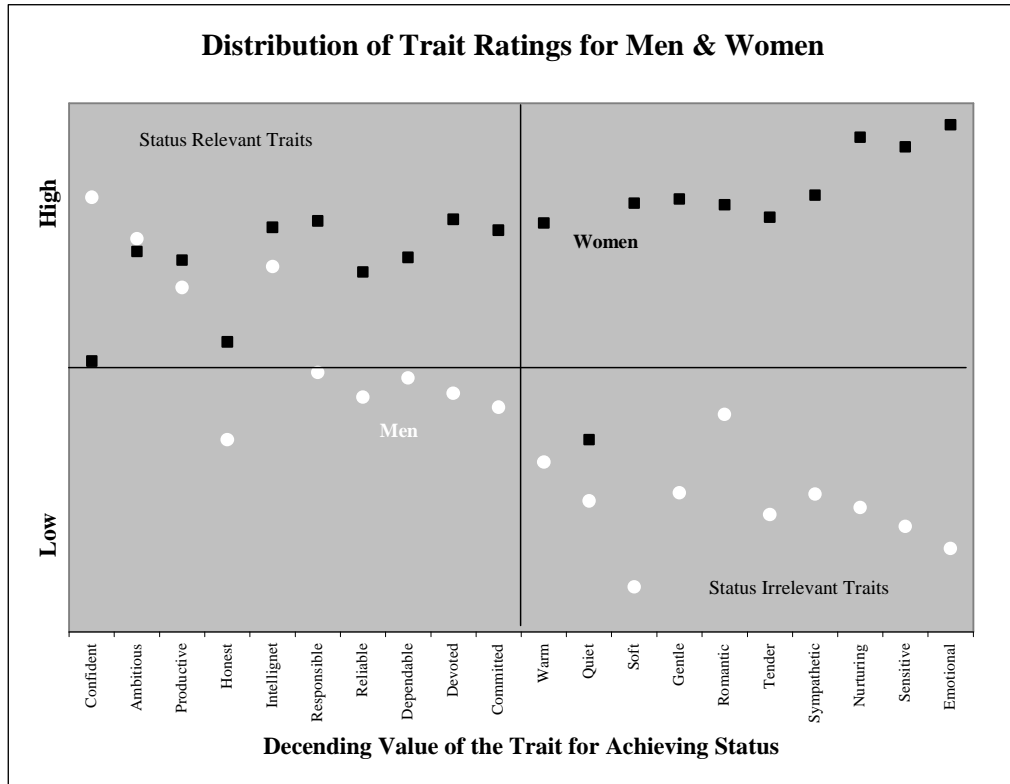
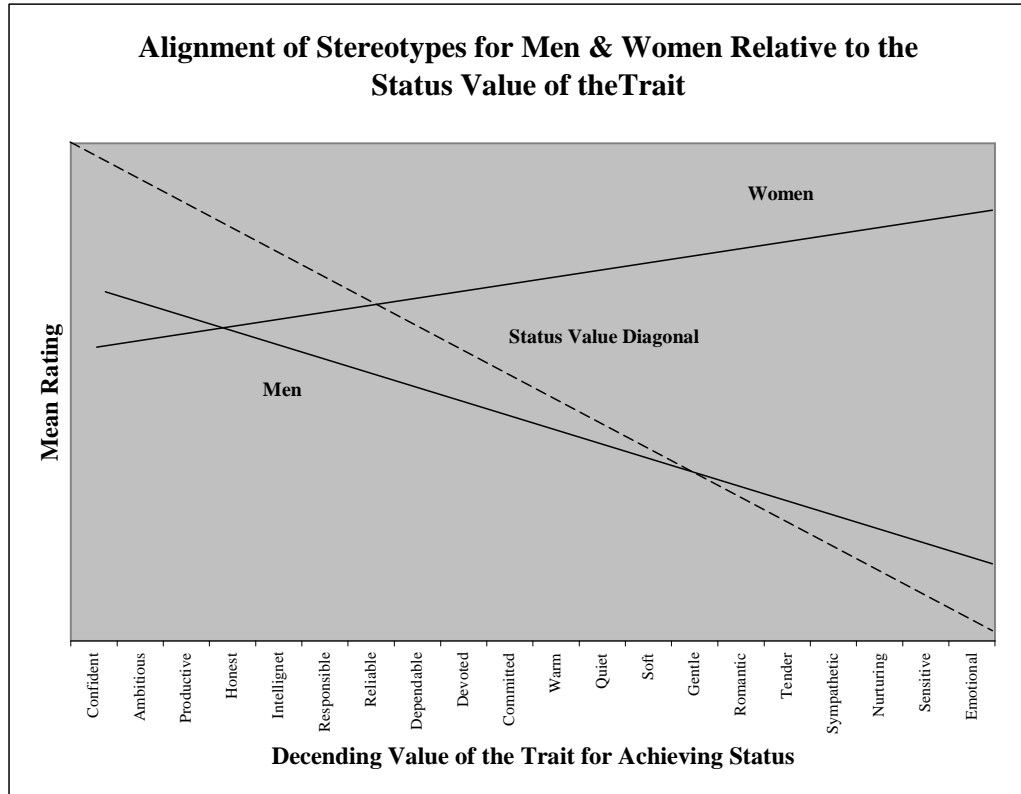


Figure 11



VITA

Christina Marie Almstrom

Candidate for the Degree of

DOCTOR OF PHILOSOPHY

Dissertation: THE IMPORTANCE OF STEREOTYPE CONSISTENCY OF
OUTGROUP FAVORITISM AMONG WOMEN UNDER VARYING
CONDITIONS OF PERCEIVED LEGITIMACY

Major Field: Clinical Psychology

Biographical:

Personal Data: Born in Rapid City, South Dakota on November 10, 1978 to
John and Colleen Harrington.

Education: Graduated from Putnam City High School, in Oklahoma City, OK in
May 1997; received Bachelor of Arts degree in Psychology from the
University of Central Oklahoma - Edmond, Oklahoma, in May 2002;
received Masters of Arts degree in Experimental Psychology University
of Central Oklahoma - Edmond, Oklahoma, in May 2004. Completed
requirements for the Master of Science degree with a major in Clinical
Psychology at Oklahoma State University, Stillwater, Oklahoma, in May
2007. Completed the requirements for the Doctorate in Philosophy in
Clinical Psychology at Oklahoma State University, Stillwater, Oklahoma
in July, 2009.

Experience: Completed Clinical Psychology Internship at Oklahoma Health
Science Center in June of 2009.

Professional Memberships:

American Psychological Association (APA)

Division 12, 38, and 50

American Psychological Society (APS)

Association for Behavior and Cognitive Therapies (ABCT)

Oklahoma Psychological Association (OPA)

Name: Christina M. Almstrom

Date of Degree: July, 2009

Institution: Oklahoma State University

Location: Stillwater, Oklahoma

Title of Study: THE IMPORTANCE OF STEREOTYPE CONSISTENCY OF
OUTGROUP FAVORITISM AMONG WOMEN UNDER VARYING
CONDITIONS OF PERCEIVED LEGITIMACY

Pages in Study: 126

Candidate for the Degree of Doctorate of Philosophy

Major Field: Clinical Psychology

Scope and Method of Study: In its modern form gender hegemony is based on persuasion rather than conflict (Jackman, 1994) where the inculcation of status beliefs sanctioned by women sustains benevolent sexism (Glick & Fiske, 2001). Systems justification theory (Jost & Banaji, 1994) explains gender outgroup favoritism as females exhibiting a preference for male traits which are markers for status and stereotyping women with less valued status markers that perpetuate inequality (Jost & Kay, 2005). This status value asymmetry effect was examined in the current experiment by exposing female participants to legitimate or illegitimate stereotype consistent information using stimuli from a stereotype threat situation.

Findings and Conclusions: The female participants evidenced a strong tendency to stereotype men differently than women. While women were described as possessing both status relevant and status irrelevant traits men were described using status relevant traits exclusively. The hypothesis of a legitimization effect for outgroup favoritism on status relevant traits was only partially supported and then only when the trait Confident was included. This suggests that being exposed to information which legitimized the stereotype of men as naturally superior to women in math and science may have activated a stereotype threat frame of reference where men would be perceived as more competent and more confident as a result (Smith, 2004). These data suggest that the content of the stereotypes for men and women among females are gender hegemonic and thus highly resistant to change in a manner consistent with the null education environments hypothesis (Betz & Fitzgerald, 1987).

ADVISER'S APPROVAL: Dr. John M. Chaney
