THE EFFECT OF EXPERIMENTALLY MANIPULATED IMPLICIT NEGATIVE
GENDER SELF-StereotypIING ON WOMEN’S IMPLICIT SELF-ESTEEM AND
IMPLICIT CAREER IDENTIFICATION AND ATTITUDES

by

VALERIE LEIGH LAWS

A Dissertation submitted to the
Graduate School-Newark
Rutgers, The State University of New Jersey
in partial fulfillment of the requirements
for the degree of
Doctor of Philosophy
Graduate Program in Psychology
written under the direction of
Dr. Luis M. Rivera

and approved by

__________________________
Luis M. Rivera

__________________________
Elizabeth Tricomi

__________________________
Kent Harber

__________________________
Bonita Veysey

Newark, New Jersey
May 2014
Acknowledgement

I would like to dedicate this dissertation to my grandmother, Mozelle Wheeler, an incredibly compassionate, selfless, intelligent, encouraging, and inspirational woman.

I would like to express deep appreciation to my advisor, Dr. Luis M. Rivera, who constantly guides, challenges, and encourages me to hone my research skills (i.e., developing scholarly, goal-oriented writing, running complex data analyses, presenting research for diverse audiences, and thinking critically). Luis has a magical way of making even the most mundane research sound unequivocally exhilarating. His mentorship and enthusiasm for research are inspiring, intellectually stimulating, and empowering. Without his guidance, this dissertation would not have been possible.

In addition, I deeply appreciate the prompt, thorough, invaluable, and encouraging feedback from my dissertation committee members, Drs. Bonita (Bonnie) Veysey, Kent Harber, and Elizabeth (Eebie) Tricomi. I also sincerely appreciate the support and funding from both the Rutgers University, Newark, Psychology Department and Graduate School. I am also grateful to Mideline Belcher, Samuel Brew, Kylie Cruz, Assia Ghoul, Farbod Fallah, Liliana Franco, Fanta Keita, Lisa Panila, Briana McNair, Rosane Morais, Katherine Morales, Hetal Patel, Kadiatu Tarawalie, Priyanka Vaghani, Marie Vogel, Perpetual Yankholmes, and Inga Yusofov for their help with data collection. Thank you to the Rutgers Implicit Social Cognition (RISC) Lab members for their thoughtful comments and feedback on this project.

A special thank you to four very influential women who have served as my on-campus support system at Rutgers: Ashley Schappell D’Inverno, Alexandra Margevich, Lisa Panila, and Assia Ghoul. I appreciate all of the times you patiently listened while I
vented, consoled me when my data were inconclusive, encouraged me to remain hopeful, and celebrated each milestone with me. I cannot imagine what graduate school would have been like without you.

Another special thank you goes to my family—this includes my CA, NJ, and NC families (Wheelers, Laws’, and my soon-to-be-in-laws, the Backstoms). My family has unconditionally supported and encouraged me throughout all of my academic endeavors. Since my dissertation focuses on women, I wanted to highlight a few important and inspirational women in my life. First, thank you to my mother, Vickie Wheeler, who truly loves me unconditionally and whose calming voice always puts me at ease. Thank you Mom for inspiring me to become a better writer and for always wanting to read my papers even when they are extremely complex. Second, thank you to my identical twin sister, Rebecca McKee, who always knows how to calm my nerves and reassure me. I appreciate our daily and invigorating phone conversations. Third, thank you to my aunt, Sandra Bailey, whose help, support, and encouragement made it possible for me to earn so many college degrees. Fourth, thank you to my sister-in-law, Lisa Laws, and to my best friend, Stephanie King, I also sincerely appreciate your never-ending support.

Finally, I would like to express my deepest appreciation to my in-home support system; my fiancé, Bryson Backstrom, and our doggy baby, Luke. I am so truly grateful for Bryson as he intuitively knows how to relieve my stress. He also encourages and supports me, and always makes me feel like I am on top of the world. In addition, I am thankful for my executive assistant, Luke, who periodically distracts me while reading, writing, or analyzing data so that I take a healthy amount of breaks throughout the day.
ABSTRACT OF THE DISSERTATION

The Effect of Experimentally Manipulated Implicit Negative Gender Self-Stereotyping on Women’s Implicit Self-Esteem and Implicit Career Identification and Attitudes

By VALERIE LEIGH LAWS

Dissertation Director:
Dr. Luis M. Rivera

Abstract

Institutional sexism still exists today and has implications for women’s gender self-concept. One example of how sexism influences women’s self-concept is through the process of implicit gender self-stereotyping—defined as when individuals automatically associate themselves with society’s widely known gender stereotypes. The present dissertation research examines three primary goals. The first goal is to establish a method that experimentally manipulates women’s implicit negative gender self-stereotyping (Studies 1-5). The second goal is to test if an experimental manipulation of implicit negative gender self-stereotyping decreases women’s implicit (but not explicit) self-esteem (Studies 3 & 5). Finally, the third goal is to experimentally demonstrate that implicit negative gender self-stereotyping increases women’s implicit (but not explicit) career identification with and implicit positive career attitudes toward feminine relative to masculine occupations (Studies 4 & 5). Overall, the results suggest that implicit negative gender self-stereotyping enhances women’s implicit self-esteem (Studies 3 & 5) but also increases their implicit (traditional) career aspirations (Study 5).
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The Effect of Experimentally Manipulated Implicit Negative Gender Self-Stereotyping on Women’s Implicit Self-Esteem and Implicit Career Identification and Attitudes

Despite the substantial amount of progress United States society has made toward gender equality over the past few decades, modern sexism still persists (Glick & Fiske, 1996; Moss-Racusin, Dovidio, Brescoll, Graham, & Handelsman, 2012; Swim & Hyers, 2009). Modern sexism involves simultaneously believing that gender discrimination no longer exists yet also endorsing covert, subtle derogatory feelings toward women (e.g., women are weak and need to be protected; Duff, 2012). Institutional sexism, for example, involves institutional polices that restrict opportunities for women thus creating gender segregation in job categories and making it difficult for women to attain positions in traditionally masculine fields (Acker, 1990; Duff 2012). Evidence for the existence of institutional sexism stems from the fact that women are still noticeably underrepresented in conventionally masculine fields. For instance, women represent only 17% of the United States Senate, 14% of engineers, 27% of chief executive officers, 31% of dentists, 33% of lawyers, and 35% of doctors in the United States (Bureau of Labor Statistics, 2013; Inter-Parliamentary Union, 2012). In addition, women attained fewer promotions than men during the 1996-2010 years (Addison, Ozturk, & Wang, 2014) and men earn approximately $3.00 more, on average, in hourly wages than women (Galley, 2014).

Empirical research suggests that chronic exposure to sexism has important implications for women’s gender self-concept (Cadinu & Galdi, 2012; Hogg & Turner, 1987, see also: Barreto, Ellemers, Piebinga, & Moya, 2009). Benevolent sexism, for example, is the endorsement of positive but discreetly patronizing beliefs about women, (e.g., men who act chivalrous toward women may endorse positive, kind beliefs about
women, yet they may simultaneously believe women are weak need to be protected by men; Glick & Fiske, 1996, 2001). Women who are directly or indirectly exposed to benevolent sexism subsequently describe themselves more in line with female gender stereotypes when compared to women who are not exposed to sexism (Barreto et al., 2009).

The present research focuses on implicit gender self-stereotyping (IGSS) in women. As opposed to explicit or self-reported gender self-stereotyping, IGSS is the nonconscious, automatic association of oneself with gender stereotypes (see Gender Self-Stereotyping section for full details). Gender self-stereotyping is defined as the extent to which women associate themselves with female stereotypes (Abrams & Hogg, 2010; Hogg & Turner, 1987). These associations can occur both implicitly (automatically) and explicitly (deliberately). The present research argues that implicit gender self-stereotyping influences women’s overall self-image and career aspirations. This is consistent with research suggesting that individuals may be unaware that stereotypic cues influence their own academic and professional choices (e.g., Dasgupta, 2011). We argue that when women implicitly internalize negative stereotypes about their gender ingroup, it may in turn motivate them to express positive attitudes toward, and strong identification with, traditionally feminine careers. In fact, recent research finds that well qualified women often elect not to pursue higher education and top professional careers because they tend to settle on jobs where they can subconsciously conform to ingroup stereotypes and thus avoid feeling uncomfortable by deviating too far from ingroup stereotypes (Dasgupta, 2011).
Gender Self-Stereotyping

Self-categorization theory argues that when people classify themselves as members of social groups, they are more likely to hold mental representations of themselves in agreement with stereotypic ingroup traits (Hogg & Turner, 1987). The process of self-stereotyping is defined as the association of widely known stereotypes about one’s ingroups with the self-concept. The present research focuses on gender self-stereotyping to understand why women are still underrepresented in traditionally masculine fields and how IGSS affects their overall self-image. Gender self-stereotyping is a specific association between self and gender stereotypes. As a case in point, consider how sexism leads women to embody the widely known female stereotypes that women tend to be weak, dependent on men, and moody. The social cognitive process of gender self-stereotyping occurs when a woman makes the following associations: women = weak/dependent/moody, myself = woman, therefore, myself = weak/dependent/moody (cf. Nosek, Banaji, & Greenwald, 2002). In support of this process, a substantial amount of research measures group and individual differences in explicit and implicit gender self-stereotyping (see Table 1 for a list of citations).

Explicit gender self-stereotyping (EGSS) is the conscious and deliberate association of oneself with gender stereotypes (e.g., Greenwald & Banaji, 1995; Devine, 1989; Deutsch & Strack, 2010). Because EGSS is a conscious process, individuals can easily self-report its outcome using questionnaire or survey methods, as demonstrated in most of the studies listed in Table 1 (e.g., Aldag & Brief, 1979; Cihangir, Barreto, & Ellemers, 2010; Clark, 2001; Cohen & Garcia, 2005; Coleman & Hong, 2008; James, 1993). For example, Lun and colleagues (2009) administered a self-report measure of
EGSS to a sample of White female participants which required them to rate the extent to which both positive (e.g., caring, compassionate, athletic, strong) and negative (e.g., complaining, moody, aggressive, stubborn) traits were characteristic of themselves. Participants explicitly self-stereotyped more on positive traits than negative traits (see also: Biernat, Vescio, & Green, 1996). Women also describe themselves to a greater extent with stereotypically feminine than masculine traits when using the original Bem Sex Role Inventory (BSRI; Deutsch & Gilbert, 1976; Johnson & McCoy, 2000) and an extended version of the Personal Attributes Questionnaire (Extended PAQ; Spence, Helmreich, & Holahan, 1979).

In contrast to EGSS, *implicit gender self-stereotyping (IGSS)* is the nonconscious, automatic association of oneself with gender stereotypes (e.g., Greenwald & Banaji, 1995; Wittenbrink, Judd, & Park, 2001). A handful of the gender self-stereotyping studies listed in Table 1 used measures of IGSS such as the Implicit Association Test (IATs; Asgari, Dasgupta, & Cote, 2010; Cadinu & Galdi, 2012; Gustafsson & Bjorklund, 2008; McCall & Dasgupta, 2007; Rudman & Phelan, 2010; Rudman, Greenwald, & McGhee, 2001), me-not me type tasks (Lorenzi-Cioldi, 1991; Onorato & Turner, 2004; Sakata, 1995), or lexical decision tasks (Lun et al., 2009). The commonality amongst these implicit measures is that reaction time is used as an indicator of the strength of implicit associations between the self and gender stereotypes. Lun and colleagues (2009, Study 1) administered a lexical decision task to a sample of White female participants. Participants indicated if stereotype-relevant (e.g., compassionate, moody) and stereotype-irrelevant (e.g., powerful, arrogant) stimuli presented on the screen were words or non-words (e.g., youey, njoue). Each stimulus was preceded by a self-relevant (e.g., I, me) or neutral (e.g.,
at, the) subliminal prime. Participants were quicker to respond to female stereotypes following a self prime than a neutral prime, but there was no difference in the speed with which participants responded to irrelevant stereotypes when they were preceded by self versus neutral primes. This research suggests that women implicitly self-stereotype specifically on positive and negative female gender traits but not on stereotypical traits of any group in general.

One of the most common IGSS measurements is the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998), which uses response latency to assess the strength of associating the self with stereotype relevant words. In the IGSS IAT procedure, participants see four types of stimuli presented one at a time on a computer screen (e.g., they see words that represent self versus other, and female versus male stereotypes). Participants are required to categorize each stimulus using one of two designated response keys on the keyboard. The rationale underlying the IAT is that when highly associated stimuli share the same response key, participants typically classify them quickly and easily; however, when weakly associated words share the same response key, participants tend to classify them more slowly and with greater difficulty. Women who display strong IGSS should perform the classification task significantly faster when “self” and “feminine” stimuli share the same response key while “other” and “masculine” stimuli share the other response key than when the classification task involves the opposite combinations of stimuli (Cadinu & Galdi, 2012).

Researchers demonstrate that various contexts can influence explicit and implicit gender self-stereotyping. When the former is the dependent variable, exposure to gender stereotypes, prejudice, and discrimination (Barreto et al., 2009, Studies 1 & 2; Chiu,
Hong, Lam, Tong, & Lee, 1998; Cihangir et al, 2010; Ross, Anderson, & Wisocki, 1982; Sinclair, Hardin, & Lowery, 2006), group collective threat manipulated by watching another woman perform poorly on a stereotype relevant task (Cohen & Garcia, 2005), group identity threat manipulated by telling women that masculine personalities are more personally successful than feminine ones (Latrofa, Vaes, & Cadinu, 2012), upholding the belief that men and women differ biologically (Coleman & Hong, 2008), writing about gender differences in behavior rather than what makes participants unique as individuals (James, 1993), abstract rather than concrete self-construal mindset (McCrea, Wieber, & Myers, 2012), interviewing for a gender stereotypic job (Miller, Lewy, & Peckham, 1997), system justification beliefs (Laurin, Kay, & Shepard, 2011), social comparisons (Guimond et al., 2006; Guimond et al., 2007; Schmitt, Branscombe, & Silva, 2006, Study 1), and gender salience (Hans & Eisenberg, 1985; Hogg & Turner, 1987; Kaschak & Sharatt, 1988; Swan & Wyer, 1997) all lead to relatively strong EGSS.

With respect to contextual effects on IGSS, stereotype threat employed by telling women their salary negotiating skills would be tested (Gustafsson & Bjorklund, 2008), group rather than individual settings (Lorenzi-Cioldi, 1991; Onorato & Turner, 2004; Sakata, 1995), subordinate rather than superior roles (McCall & Dasgupta, 2007), gender attitudes of important close others (Sinclair & Lun, 2006; Sinclair et al., 2006, Study 4), contact with female experts in their fields (Asgari et al., 2010; Stout, Dasgupta, Hunsinger, & McManus, 2011), and exposure to atypical gender roles (Rudman & Phelan, 2010) all result in relatively strong IGSS.

Other research suggests that gender self-stereotyping is the antecedent to a host of predictable outcomes. Strong EGSS is associated with strong stereotyped perceptions of
others (Clark, 2001; Davis, Williams, & Best, 1982; Downs & Abshier, 1982; Elman, Press, & Rosenkrantz, 1970; Endo, 1984; Gupta, 1992; Harris, Perricone, & Smith, 1988; O’Leary & Depner, 1975; Pennell & Ogilvie, 1995; Rosenkrantz et al., 1968; Rudman et al., 2001; Signorella, 1992; Spence & Buckner, 2000; Spence & Hall, 1996), strong agreement of gender stereotyped occupations (McLean & Kalin, 1994), high work satisfaction in women (Aldag & Brief, 1979), high maintenance of positive relationships with others (September et al., 2001), high relationship satisfaction in men (Donaghue & Fallon, 2003), high self-confidence in men (Johnson & McCoy, 2000), strong use of gender stereotyping of sports (Lauriola et al., 2004), high risk drinking (Ricciardelli, Connor, Williams, & Young, 2001; Williams & Ricciardelli, 2003), and high reports of binge eating (Williams & Ricciardelli, 2003). In contrast, low EGSS is associated with strong self-actualization (Cristall & Dean, 1976), high depression in boys (Allgood-Merten, Lewinsohn, & Hops, 1990), high leadership aspirations in women (Barreto et al, 2009, Study 3), high psychological adjustment (Deutsch & Gilbert, 1978; Gilbert, Waldroop, & Deutsch, 1981; September et al., 2001), high career self-efficacy in male dominated occupations among women (Matsui, Ikeda, & Ohnishi, 1989), and strong verbal word performance in men (Ritter, 2004). Strong IGSS is associated with strong implicit gender identification (Cadinu & Galdi, 2012) and low explicit self-esteem in women (Rudman et al., 2001).

A major limitation of the gender self-stereotyping literature is that it uses correlational studies that measure individual differences in gender self-stereotyping and test how they predict important consequences. In these studies gender self-stereotyping is argued or presumed to be a causal factor. However, in the absence of an experimental
manipulation of gender self-stereotyping, the extant literature is unable to make suggestions about the causal effects of gender self-stereotyping. Therefore, the first goal of the present dissertation is to extend the current literature by testing an experimental manipulation of IGSS. As opposed to EGSS, we focus on IGSS because it (a) is automatically activated outside of women’s conscious awareness, and (b) can reveal the basic underlying social cognitive structure and processes represented in memory before they are influenced by psychological motivations and self-presentation concerns. As such, an IGSS manipulation and its effect on theoretically relevant outcomes should provide a more rigorous approach to understanding implicit social cognition of women.

Furthermore, the present research will focus exclusively on negative IGSS because negative stereotypes may have a greater detrimental impact on women’s self-esteem and career attitudes than positive stereotypes (Cejka & Eagly, 1999; Gadassi & Gati, 2009; Ritsher, Otilingam, & Grajales, 2003; Whitely, 1983; see General Discussion for more thorough details). One limitation of the gender self-stereotyping literature is that researchers often neglect to acknowledge the importance of distinguishing the valence of gender stereotypes and their association with the self-concept. Self-categorization theory (SCT), which stems from social identity theory, argues that when people classify themselves as members of social groups, they are more likely to hold mental representations of themselves in agreement with stereotypic ingroup traits (Abrams & Hogg, 2010; Hogg & Turner, 1987). This suggests that group members should possess mental representations of associating oneself with the stereotypes of their ingroup, regardless of the valence of the stereotypes. We argue that distinguishing between positive versus negative stereotypes may have distinct implications for the cognitive
structure of gender self-stereotyping and its consequences on women’s self-esteem and career attitudes.

**The Implicit Social Cognition of Gender Self-Stereotyping**

As noted above, the first goal of this dissertation is to develop an experimental manipulation of negative IGSS that is based on implicit social cognitive theories (Greenwald & Banaji, 1995; Greenwald, Banaji, Rudman, Farnham, Nosek, & Mellott, 2002; Perugini, 2005; Perugini, Richetin, & Zogmaister, 2010; Petty & Briñol, 2009; Petty, Briñol, & DeMarree, 2007). Consistent with such theories, priming effects can reveal the basic implicit social cognitive structure and underlying processes of gender self-stereotyping (cf. Wentura & Degner, 2010). *Priming* is the exposure to stimuli that in turn influences an individual’s response to related stimuli (Duff, 2012; see also Levy, 1996). *Activation* is defined as the increased accessibility of particular constructs or associations (Wheeler & Petty, 2001). The present dissertation will adopt a manipulation of negative IGSS in which *priming* the constructs of “self” and “negative female stereotypes” should subsequently *activate* the pre-existing association between these two constructs.

Furthermore, the manipulation of negative IGSS should be more likely to affect related implicit constructs than explicit constructs. Several implicit social cognition theories make the prediction that individual’s implicit attitudes tend to influence other spontaneous, automatically activated constructs and responses (Greenwald & Banaji, 1995; Greenwald et al., 2002; Perugini, 2005; Perugini et al., 2010; Petty & Briñol, 2009; Petty et al., 2007). For instance, the double-dissociation model of attitudes postulates dual attitudes (i.e., implicit and explicit evaluations of the same object) co-exist in memory
and guide behaviors such that implicit attitudes direct spontaneous behaviors while explicit attitudes direct deliberate behaviors (Perugini, 2005; Perugini et al., 2010; Wilson, Lindsey, & Schooler, 2000).

Also, balanced identity theory (BIT; Greenwald et al., 2002) posits that individual’s drive for consistency should create automatic associations between the constructs of self, groups, and attributes. BIT argues these associations should be more strongly inter-related at an implicit rather than explicit level because implicit, automatically activated associations among mental representations are not subject to social desirability constraints. Demand characteristics (Orne, 1962) and evaluation apprehension (Rosenberg, 1969) may mask these associations when measured explicitly. In line with these arguments, the present research predicts that activating the implicit associations between self and negative gender ingroup stereotypes should also affect implicit (not explicit) outcomes (cf. Laws & Rivera, 2012).

**Effect of Implicit Negative Gender Self-Stereotyping on Implicit Self-Esteem**

Following the above review, the second goal of the present research is to demonstrate how negative IGSS affects implicit self-esteem. Research suggests that the mental representations of an individual’s self-concept and that of their ingroups are overlapping and interconnected constructs (Smith & Henry, 1996). This suggests that negative IGSS has implications for women’s overall self-image. This idea is consistent with research on the looking-glass self, which argues that individuals see themselves as they imagine others see them (Cooley, 1902; Mead, 1934). Because society in general holds negative stereotypic beliefs about women, these attitudes will likely become an
internalized representation of how women imagine others perceive them. Thus, it is likely this negative internalization can have damaging implications for women’s self-concept.

Similarly, cognitive consistency researchers argue that people strive for consistency in both cognitions and behaviors (Festinger, 1957; Festinger & Carlsmith, 1959; Gawronski, 2012). This theory of cognitive consistency postulates that inconsistencies create an aversive state of arousal and thus people are driven to maintain consistency in their thoughts and behaviors. In the context of self-stereotyping, consistency motives would predict that negative self-stereotyping should affect negative outcomes (e.g., lower self-esteem, life satisfaction, confidence, worse mental and physical health).

Consistent with looking-glass self and cognitive consistency theories, the more women explicitly associate themselves with female relevant traits (e.g., weakness), the lower their explicit self-esteem (Rudman et al., 2001, Study 3). Also, women who endorse female a blend of valenced gender stereotypes report lower self-esteem than women who renounce such stereotypes (Hirschy & Morris, 2002; Major, Barr, Zubek, & Babey, 1999; Spence, Helmreich, & Stapp, 1975; Whitely, 1983). However, Spence and Hall (1996) found that no relation exists between EGSS and self-esteem among fourth through sixth grade girls.

In contrast to looking-glass self and cognitive consistency hypotheses, social identity theory (SIT) argues that individuals are motivated to achieve a positive group identity by acting in accordance with group norms (Abrams & Hogg, 2010; see also Abrams & Hogg, 1990). Furthermore, when group members associate themselves with stereotypic ingroup traits, regardless of valence, these associations can subsequently
make individuals feel good because they feel included and prototypical members of their social ingroups. Thus, strong negative IGSS could be associated with high self-esteem.

Consistent with SIT, research explores a relation between “selective gender self-stereotyping” and self-esteem (Oswald & Chapleau, 2010; Oswald & Lindstedt, 2006). Selective self-stereotyping is the use of socially creative strategies to compare ingroups versus outgroups on dimensions that highlight positive outcomes (Biernat et al., 1996; see also Tajfel & Turner, 1986). The process of selective self-stereotyping in women is influenced by positive self-image motives whereby women easily accept positive female attributes as descriptive of themselves, but require creative ways to increase their group’s positive distinctiveness when exposed to threatening intragroup comparisons (Biernat et al., 1996; see also Tajfel & Turner, 1986). Hence, females strategically express simultaneous denial and acceptance of negative female attributes (i.e., deny the attribute as descriptive of themselves and closest female members, but accept them as true of a more broad, general ingroup; Biernat et al., 1996).

Selective self-stereotyping studies have examined physical, personality, (Oswald & Chapleau, 2010; Oswald & Lindstedt, 2006) and cognitive (Oswald & Chapleau, 2010) gender based self-stereotyping in men and women. Female participants rated the extent to which each trait was self-descriptive, descriptive of their closest women friends, of women in general, and university students in general. Women selectively stereotyped by endorsing positive personality (e.g., nurturing) and physical (e.g., sexy) traits as more descriptive of the self and closest women friends than women in general or university students in general. However, they endorsed negative traits (e.g., manipulative, weak) as more descriptive of women in general and university students than of themselves or
closest women friends (Oswald & Chapleau, 2010; Oswald & Lindstedt, 2006). Moreover, among women, physical trait strong selective self-stereotyping was associated with high appearance, social, and performance state self-esteem (Oswald & Chapleau, 2010; Oswald & Lindstedt, 2006), which suggests that among college-aged women, attaining gender-based physical stereotype standards seems to be important for state self-esteem. These findings are in line with research demonstrating that women’s spotlight on their bodies may stem from the fact that women are (a) less satisfied than men with their bodies and (b) they view their bodies in an objectified manner (Fanzoi, 1995; Fredrickson & Roberts, 1997).

In summary, there is mixed correlational evidence regarding the relationship between EGSS and self-esteem. For instance, Rudman and colleagues (2001) find that strong EGSS is associated with low self-esteem while Spence and Hall (1996) report no relationship between self-esteem and the extent to which elementary aged girls gender self-stereotype. In addition, women who strongly endorse positive female stereotypes as characteristic of themselves and report negative traits as characteristic of others report higher self-esteem than those who do not (Oswald & Chapleau, 2010; Oswald & Lindstedt, 2006). It remains unclear from previous correlational research on individual differences in EGSS what the basic underlying social cognitive structure of IGSS is and how its processes are represented in memory before they are influenced by psychological motivations and self-presentation concerns. Thus, the present research uses an experimental manipulation of negative IGSS to examine its effect on implicit self-esteem because, as described above, implicit processes are automatically activated and thus able to bypass self-presentation concerns.
One study recently examined the relationship between IGSS and self-esteem (Rudman et al., 2001, Study 3). Rudman and colleagues (2001, Study 3) administered an IAT that consisted of the association of self versus other with powerful (e.g., bold, strong) versus weak (e.g., timid, shy). The results revealed that the more women implicitly associated themselves with female relevant traits (e.g., weakness), the lower their self-esteem. However, this finding should be interpreted with caution as the masculine attribute dimension (power) is more positive than the feminine attribute dimension (weakness). Therefore, this valence confound across the stereotype categories in Rudman et al.’s IAT may be inadvertently capturing self-esteem.

In summary, the second goal of the present research is to test the experimental effect of negative IGSS on women’s implicit self-esteem. Looking-glass self and cognitive consistency theories predict negative IGSS will result in a decrease in implicit (not explicit) self-esteem. However, it is plausible that negative IGSS will produce an increase in implicit (not explicit) self-esteem, which would be in line with the current interpretation of social identity theory; when group members associate themselves with stereotypic ingroup traits, these associations can subsequently make individuals feel good because they feel included and prototypical members of their social ingroups (Abrams & Hogg, 2010, see also Abrams & Hogg, 1990). This predicted effect on implicit (but not explicit) self-esteem is in line with implicit social cognitive theories (double dissociation model; Perugini, 2005; Perugini et al., 2010; meta-cognitive model; Petty & Briñol, 2009; Petty et al., 2007; balanced identity theory; Greenwald et al., 2002; see Implicit Social Cognition Section above for details).
Effect of Implicit Negative Gender Self-Stereotyping on Career Attitudes

The third and final goal of the present research is to experimentally show that negative IGSS in women detrimentally impacts their career attitudes. The present research predicts that negative IGSS should result in stronger implicit (not explicit) identification with positive attitudes toward feminine than masculine careers. This is in line with research suggesting that women arguably feel more comfortable in domains where women stereotypically excel and where women recognize similarities with same-sex role models (Asgari et al., 2010; Ceci, Williams, & Barnett, 2009; Dasgupta, 2011; Lockwood, 2006; Markus & Nurius, 1986). Dasgupta (2011) posits that well qualified women often elect not to pursue leading professional careers because they tend to settle on jobs where they can subconsciously conform to ingroup stereotypes. This subconscious process allows women to avoid feeling uncomfortable by deviating too far from ingroup stereotypes (Dasgupta, 2011).

A limited amount of research conducted on EGSS and explicit career attitudes finds that among females, strong EGSS is associated with lower career self-efficacy in male dominated occupations (Matsui et al., 1989). Career self-efficacy was assessed by asking participants the extent to which they could effectively complete the educational prerequisites and job responsibilities of several gendered occupations. In addition, reporting fewer female role models in male–dominated positions was also associated with lower career self-efficacy in male dominated occupations than in female dominated occupations. If women recognize a deficiency of female role models in male dominated occupations, they may characterize the career as masculine, and assume that achievement in that position requires masculine traits. Therefore, women may feel less efficacious in
male dominated careers to the extent that they lack female role models in that domain and to the extent that they view themselves as feminine.

As further evidence for the relationship between EGSS and explicit career attitudes, researchers asked people to participate as an interviewee on videotape (Study 1) or using paper materials (Study 2) for a job that either required someone to work as a team member who compromises, follows orders, and is responsive (i.e., requires expressive/feminine traits) or required someone to speak authoritatively, direct projects, work alone, and be competitive (i.e., requires instrumental/masculine traits; Miller et al., 1997). Participants completed the Bem Sex Role Inventory (BSRI; Bem, 1974) both before and after their participation as an interviewee. In the expressive condition, EGSS increased relative to the instrumental condition. In the instrumental condition, self-descriptions on masculine traits increased relative to the expressive condition. Interviewing for either a feminine or masculine job enhanced the associations between self and gender stereotypes. This finding suggests that there is a congruence between gender stereotyped occupations and the extent to which one self-stereotypes. Although this work does not provide evidence for the temporal order that we predict, it does support social role theory’s principle that society expects men and women to exude attributes that permit them to carry out sex-typical work (Eagly, 1997; Eagly & Wood, 2012).

It remains unclear from previous correlational research on individual differences in EGSS what the basic underlying social cognitive structure of IGSS is and how its processes are represented in memory before they are influenced by psychological motivations and self-presentation concerns. Thus, the present research experimentally
manipulates of negative IGSS to examine its effect on implicit career identification and attitudes because, as described above, implicit processes are automatically activated and thus able to bypass self-presentation concerns.

One study examined IGSS in the domain of career aspirations. Rudman and Phelan (2010) examined the effect of exposing women to typical versus atypical gender roles on IGSS and explicit career attitudes. Although this line of work does not examine the relation between IGSS and career attitudes, it demonstrates various contexts that influence this relationship. Participants in this study were shown pictures and biographical information describing targets’ occupation as either traditional or nontraditional for their gender and were told to study the information for a memory test. In the traditional (typical) priming condition, participants were exposed to men in traditionally male roles (e.g., business school professor, chief transplant surgeon, and business executive), and women in traditionally female roles (e.g., elementary school teacher, nurse, and homemaker). Exposure to these traditional roles was expected to exacerbate gender stereotypes and reduce women’s interest in masculine jobs. In the nontraditional (atypical) priming condition, participants were exposed to the reversed gender role, so that women were in traditionally male roles, and men were in traditionally female roles. The authors expected exposure to female vanguards to increase women’s IGSS and to reduce their interest in masculine jobs relative to controls. Finally, the control condition read information about animals (Rudman & Phelan, 2010).

The categories and stimuli used in the IGSS IAT were: “self” versus “other” (self: I, me, my, mine, and myself versus others: others, they, them, their, and theirs) and “leader” versus “follower” (leader: bold confident, successful, assertive, ambitious, and
competent versus follower: *meek, uncertain, failure, indecisive, confused, and loser*; Rudman & Phelan, 2010). Women exposed to atypical gender roles (i.e., *female surgeon, male nurse*) implicitly associated themselves more with “follower” relative to “leader” compared to control condition. This suggests that exposure to women in high status, atypical positions signifies a social comparison threat that may reduce women's ability to link the self with leadership qualities. In contrast, women in the typical priming condition (i.e., *male surgeon and female nurse*) did not differ in IGSS from the control condition. Additionally, in the atypical condition, IGSS predicted job preference such that the more women implicitly associated themselves with “leader” relative to “follower”, the greater their interest in feminine jobs. In contrast, IGSS did not predict interest in masculine jobs. The authors argue that these findings suggest that women high on self-empowerment may desire feminine jobs as a means of achieving their goals, rather than overcome the challenges involved in becoming successful in male-dominated domains. Finally, in the control condition, the more women implicitly associate themselves with “leader”, the stronger their interest in masculine jobs. The typical condition also yielded a similar (albeit marginal) relationship between IGSS and masculine job preferences. In summary, exposure to different gender roles influences the extent to which women associate themselves with female stereotypes and their career goals.

A major limitation of the aforementioned studies is that they do not disentangle positive from negative stereotypes. Although Rudman and Phelan (2010) did not pre-test their “leader” and “follower” stimuli for valence, the traits categorized as “leader” appear to be more positive than the traits categorized as “follower”. Therefore, the underlying valence imbalance in these opposing categories may be confounded with self-esteem in
this measurement. Furthermore, it remains unknown if negative IGSS affects career attitudes.

The third goal of the present research is to demonstrate that negative IGSS will have a cause-and-effect relation to implicit (but not explicit) attitudes toward feminine versus masculine careers. We predict that women, in general, should endorse more positive attitudes toward and stronger identification with feminine than masculine careers. This is in line with research demonstrating that social roles influence women to navigate away from powerful leadership careers and more toward relational or care-focused careers (e.g., Eagly & Karau, 2002; Killeen, Lopez-Zafra, & Eagly, 2006; Lips, 2000). Activating negative IGSS should strengthen these associations on measures of implicit career beliefs because IGSS is automatically activated outside of women’s conscious awareness, and can reveal the processes represented in memory before they are influenced by psychological motivations and self-presentation concerns (e.g., Greenwald et al., 2002; see Implicit Social Cognition Section above for details).

**Research Overview**

The overall goal of the present research is to develop an experimental manipulation of negative IGSS and to test its effect on women’s implicit self-esteem and implicit career identification and attitudes. The manipulation aims to prime and activate the association between the self-concept and negative female stereotypes. An experimental manipulation of negative IGSS is distinct from the extant gender self-stereotyping research because it has adopted correlational designs and thus is unable to infer causality (e.g., Asgari, Dasgupta, & Cote, 2010; Biernat et al., 1996; Nosek et al., 2002; Rudman et
al., 2001; Rudman & Phelan, 2009). The primary research goals with a sample of women are:

(1) To establish a method that experimentally manipulates negative IGSS (Studies 1-5).

(2) To test if an experimental manipulation of negative IGSS decreases (consistent with a looking-glass self hypothesis) or increases (consistent with a SIT hypothesis) their implicit (but not explicit) self-esteem (Studies 3 & 5).

(3) To test if an experimental manipulation of negative IGSS strengthens their implicit (but not explicit) identification with and implicit positive attitudes toward feminine careers relative to masculine careers (Studies 4 & 5).

**Study 1a: Pre-Test Gender Stimuli for Experimental Manipulation of Negative IGSS**

Study 1a pre-tested 120 adjectives on gender relevance and valence continuous scales. Stimuli that are rated as strongly associated with women and negative will be used in the negative IGSS manipulation.

**Method**

**Participants.** Thirty-four female students participated in exchange for partial course credit. Participants’ age ranged from 18 to 35 years ($M = 20.03$). Twenty-nine percent were Hispanic, 26% were Asian or Pacific Islander, 14% were White, 9% were African American, 9% were multi-racial, 9% were another ethnicity not listed, and 3% were Native American or Alaskan.

**Procedure.** Participants were presented with 120 adjectives that were identified and selected from previous work on gender self-stereotyping and Webster’s Dictionary
(see Appendix A; Gustafsson & Bjorklund, 2008; Lorenzi-Cioldi, 1991; Lun et al., 2009; Rudman et al., 2001). All adjectives were rated on two scales: (a) gender relevance from 1 (mostly associated with men) to 7 (mostly associated with women); and (b) valence from 1 (negative) to 7 (positive).

**Results and Discussion**

T-tests were run to select the final four stimuli categories that would be used in the negative Igss manipulation procedure and manipulation check measure (see Table 2). The negative female stereotype relevant stimuli (*moody, materialistic, vulnerable, complaining, weak*) were each significantly below the valence scale midpoint and significantly above the gender scale midpoint (see Table 2). The negative female stereotype irrelevant stimuli (*racist, gullible, worthless*) were each significantly below the valence scale midpoint but not significantly different from the gender scale midpoint. The neutral female stereotype irrelevant stimuli (*busy, unpredictable, old-fashioned*) were not significantly different from neither the valence scale midpoint nor the gender scale midpoint. Finally, the positive female stereotype irrelevant stimuli (*artistic, modern, calm*) were each significantly above the valence scale midpoint but not significantly different from the gender scale midpoint. Study 1a allowed us to pre-test stimuli for use in both the manipulation and manipulation check tasks of negative Igss.

**Study 1b: Pilot Experimental Manipulation of Negative Igss**

Study 1b provided an initial test of the negative Igss experimental manipulation. This task involved priming the mental representation of two particular constructs—“self” and “female stereotypes”—which subsequently automatically activated the (pre-existing) association between these two constructs. Thus, priming effects can provide a glimpse
into the cognitive structure of self-stereotyping and its basic underlying implicit processes (Wentura & Degner, 2010). The present research makes two assumptions -- that women identify with their gender ingroup (e.g., Becker & Wagner, 2009) and are aware of society’s stereotypes of their gender ingroup (e.g., Prentice & Carranza, 2002). We predicted that women randomly assigned to complete the negative IGSS manipulation would display stronger negative IGSS (not EGSS) relative to women in the control condition.

**Method**

**Participants.** Forty-two female Rutgers University, Newark, students participated in a study on “personal cognition” in exchange for partial course credit or extra credit. Participants’ age ranged from 18 to 50 years ($M = 22.17$). Thirty-one percent were Hispanic, 26% were Asian or Pacific Islander, 20% were White, 11% were African American, 3% were multiracial, and 6% were another ethnicity not listed. Seven participants were dropped from analyses: six were procedural problems (three indicated *not me* on all stereotype relevant stimuli on the Me-Not Me task, one indicated *me* on all stereotype relevant stimuli on the Me-Not Me task, two did not complete the self-stereotype manipulation correctly), and one guessed the hypothesis. The final sample consisted of 35 women.

**Procedure.** Participants were randomly assigned to one of two conditions: the experimental condition in which they completed the negative IGSS manipulation followed by manipulation check measures, or the control condition in which they did not complete the negative IGSS manipulation but proceeded directly to completing the manipulation check measures. Finally, all participants were fully debriefed.
Manipulated variable.

*Implicit gender self-stereotyping.* Participants were ostensibly informed that this task measures attention. Instructions indicated for participants to memorize two pre-specified words, a self-related and a female stereotype word. Their task was to indicate (using the spacebar) when one of the two pre-specified words was presented on the screen as quickly as possible. More specifically, each trial contained a pair of words presented side by side on the screen, one randomized self stimulus and one randomized stereotype stimulus. The self-related stimuli were: *me, my, mine, I,* and *myself* while the negative female relevant stereotype stimuli were: *moody, materialistic, weak, vulnerable,* and *complaining.* These stimuli were presented for 1500 milliseconds. Then the screen displayed the next trial, regardless of whether or not the participant responded. The instructions specified to press a button (spacebar) if participants saw a pre-specified target on the screen. If participants did not see the pre-specified target on the screen, they were instructed to make no response (i.e., press no buttons). The task consisted of five blocks of 25 trials each, for a total of 125 trials. Each block contained a different set of pre-specified targets than any prior blocks, so that each self-related word and each negative stereotype related word served as a target in exactly one block. Fifty of these trials required a spacebar response (because one of the pre-specified targets was present) while the rest of the trials did not. The two target words never appeared together. For example, if the participant was told to memorize the words “I” and “vulnerable”, they never appeared together on the screen. In order for participants to gain familiarity with the task, they were instructed that the first block of trials was practice.

*Measured variables: Manipulation check.*
Implicit gender self-stereotyping – Me-Not Me Task. Participants completed a Me-Not Me task (Markus, 1977) to assess the extent to which they associate themselves with negative female stereotypes. Participants were instructed to respond using two keys on the keyboard if they characterized the stimuli on the screen as “me” or “not me”. They were told to do so as quickly as possible. Their response latencies were recorded. This task used the same negative stereotype relevant stimuli from the manipulation procedure. In addition, three negative irrelevant stimuli (racist, gullible, worthless), three positive irrelevant stimuli (artistic, modern, calm), and three neutral stimuli (busy, unpredictable, old-fashioned) were presented. Participants were told that the first 15 trials were practice while the last 45 trials were critical, for a total of 60 trials. The Me-Not Me task has been used to measure IGSS (Lorenzi-Cioldi, 1991; Onorato & Turner, 2004; Sakata, 1995).

Explicit gender self-stereotyping (negative EGSS). Participants were instructed to rate the negative stereotype relevant words from the negative IGSS manipulation on a scale of 1 (not very characteristic of me) to 7 (very characteristic of me). Higher scores represent high negative EGSS ($\alpha = .69$). Participants also rated the stereotype irrelevant stimuli from the Me-Not Me task as fillers.

Debriefing.

Once these procedures were concluded, the participants were fully debriefed (the same debriefing procedure was used in Studies 1b-5). First, participants were probed for suspicion about the relation between the methodology and hypotheses of the study using the following questions: (a) What do you think the purpose of the tasks was about? (b) Do you think there was any connection between the tasks? If they responded “yes” they were also asked: (c) Can you elaborate on what you think the connection was? In order to
eliminate any effects of the false feedback, we used a well-established debriefing method (Ross, Lepper, & Hubbard, 1975). In this procedure, we (a) disclosed the true nature of the study and the reason for deception, (b) asked participants to recognize their understanding of the nature and purpose of the deception, (c) gave the participant contact information for the primary researcher and the Rutgers Counseling Center, and (d) provided a list of journal articles about self-stereotyping.

Results and Discussion

An inverse transformation (1000/RT) was applied to the Me–Not Me task latencies which is typical when analyzing skewed response latencies. Next, difference scores were calculated such that me latencies were subtracted from not me latencies. Difference scores allow us to take into consideration latencies from both me and not me responses. The results revealed a significant difference in latency scores, $F(1,33) = 6.65$, $p = .015$ (see Figure 1), such that the participants in the negative IGSS condition ($M_{\text{experimental transformed}} = -.15$, $SD_{\text{experimental transformed}} = .28; M_{\text{experimental raw}} = 228.26$, $SD_{\text{experimental raw}} = 352.05$) responded faster to characterize negative female stereotypes as “me” than “not me” compared to those in the control condition ($M_{\text{control transformed}} = .04$, $SD_{\text{control transformed}} = .15; M_{\text{control raw}} = -80.85$, $SD_{\text{control raw}} = 563.12$). This suggests that the manipulation task activated negative IGSS relative to not completing the task. In addition, the mean Me/Not-Me latency difference score in the experimental condition was significantly different from zero, $t(17) = -2.305$, $p = .03$, but this was not the case in the control condition, $t(16) = 1.25$, $p = .23$. See Figure 2 for a graph displaying the raw latency reaction times (ms) for categorizing the negative stereotypes as me versus not me across conditions.²
However, there were no significant mean differences in Me/Not-Me latency scores across condition for the Me-Not Me non-stereotyped words: negative irrelevant: $F(1,26) = 1.402, p = .247$, positive irrelevant: $F(1,15) = .028, p = .87$, or neutral irrelevant $F(1,27) = .0117, p = .735$. Lastly, there were no significant mean differences across condition in explicit non-stereotype words self-characterizations, negative irrelevant: $F(1,34) = 1.072, p = .308$, positive irrelevant: $F(1,34) = .076, p = .784$, or neutral irrelevant $F(1,34) = .365, p = .55$. A graph displaying the raw latency reaction times (ms) for these positive, negative, and neutral non-stereotyped (i.e., stereotype irrelevant) stimuli classified as me versus not me across condition was also included (albeit these are null results; see Figures 3-5). Lastly, there were no significant mean differences across condition in negative EGSS, $F(1,34) = 1.42, p = .24$.

Study 1b provides initial evidence that the manipulation of negative IGSS activates the implicit association between self and negative ingroup stereotypes. With these favorable results, Study 2 examined if the negative IGSS manipulation is applicable to only those individuals in the gender ingroup (i.e., women) rather than the gender outgroup (i.e., men).

**Study 2: Replication of Experimental Manipulation of Negative IGSS**

The purpose of Study 2 is to (a) replicate the findings from Study 1b and (b) to extend the results by showing that the negative IGSS manipulation only applies to stereotyped ingroup members (women) rather than outgroup members (men). The negative IGSS manipulation should only affect women because the stereotypes are female (not male) relevant. Recall that the present research makes two assumptions – that women identify with their gender ingroup (e.g., Becker & Wagner, 2009) and are aware
of society’s stereotypes of their gender ingroup (e.g., Prentice & Carranza, 2002). We predicted that women randomly assigned to complete the negative IGSS manipulation would display stronger negative IGSS (not EGSS) relative to women in the control condition. Lastly, we predicted that men’s negative IGSS and EGSS would not differ across the two conditions.

**Method**

**Participants.** Sixty-seven undergraduate students (34 women, 33 men) were recruited from the Rutgers University, Newark, Psychology Department subject pool. Six participants were dropped from analyses because two participants made too many errors on the conditioning (manipulation) task, one participant identified as exclusively homosexual, two participants made too many errors on the IAT, and one participant guessed the hypothesis. The final sample consisted of 61 undergraduates (32 women, 29 men). Thirty percent were Asian or Pacific Islander, 21% were Caucasian, 13% were African American, 13% were multiracial, 13% were another ethnicity not listed, and 10% were Hispanic. Participants’ age ranged from 18 to 46 years ($M = 20.11$, $SD = 4.24$).

**Procedure and manipulated variable.** Study 2 used the same study design from Study 1b in which participants were randomly assigned to either the negative IGSS experimental condition or control condition. Study 2 differs from Study 1b in two ways: (a) a sample of both men and women (as opposed to women only) was recruited, and (b) an IAT was administered to measure negative IGSS (as opposed to the Me/Not-Me task). To avoid the gender of the research assistant influencing the responses of the participants, a female experimenter was utilized to interact with female participants while a male experimenter interacted with male participants. Men and women may be motivated to
affiliate with a person of an opposing gender (see Sinclair, Huntsinger, Skorinko, & Hardin, 2005) and, thus, may be motivated to associate themselves with stereotypes of their gender outgroup in the presence of a member from the opposing gender group.

**Measured variables: Manipulation check.**

*Implicit gender self-stereotyping – Implicit Association Test (IAT)*. An IAT (Greenwald et al., 1998) was administered to measure negative IGSS. The IAT measured the relative strength with which two target groups (*self* vs. *others*) were associated with two opposing evaluations (*feminine* vs. *masculine* stereotypes). The negative feminine stereotypes were the same as the negative IGSS manipulation Study 1b (*materialistic, vulnerable, weak, complaining, moody*; see Table 2). The negative masculine stereotypes were *violent, poor, mediocre, dangerous*, and *lower-class*. These negative masculine stimuli came from the same set of 120 stimuli that were pre-tested in Study 1a. These stimuli were significantly below the midpoints on the gender (i.e., strongly associated with men) and valence scales (see Table 3).

Each stimuli appeared randomly one after the other centered on the computer screen while category labels were appropriately positioned on the top left (e.g., “self,” “feminine”) and top right (e.g., “other,” “masculine”) sides of the screen. Participants’ main task was to categorize the four types of stimuli using two designated response keys on the keyboard. For half of the task, participants were instructed to categorize female stereotypes that are generally evaluated as self-relevant using the same key and simultaneously to categorize male stereotypes that are generally evaluated as others-relevant using the other key. For the remaining half of the task, the pairing of categories was reversed – self-words and male stereotypes were now on one side of the monitor, and
other-words and feminine stereotypes on the other side. Finally, the order of the two
categorization tasks was counterbalanced between participants. The underlying rationale
of the present IAT is that, when “self” and “feminine” stimuli share the same key, women
tend to categorize them relatively quickly and easily. In contrast, when “self” and
“masculine” share the same key, women tend to categorize them relatively slowly and
with difficulty.

Following the scoring algorithm recommended by Greenwald and colleagues
(Greenwald, Nosek, & Banaji, 2003), an IAT $D$ score is the difference in the average
response time between the two critical category blocks (the self paired with masculine
stereotypes minus the self paired with feminine stereotypes) divided by the pooled
standard deviation. A relatively high positive IAT $D$ indicates faster associations between
the self and negative feminine stereotypes (negative female gender self-stereotyping), a
relatively low negative IAT $D$ indicates faster associations between the self and negative
masculine stereotypes (male gender self-stereotyping), and an IAT $D$ score of zero
indicates equally speeded associations between the self and both gender stereotypes.
Several studies have used varied IATs to measure IGSS (Cadinu & Galdi, 2012; Haller &
Rivera, 2008; Rudman et al., 2001; Rudman & Phelan, 2010).

We acknowledge that the negative masculine stereotypes, poor and lower-class
may pose a threat to face validity as they may seem to be neither masculine nor feminine
stereotypes. Therefore, a separate sub-sample of sixty participants (38 women, 22 men)
completed an additional pre-test of the negative masculine stereotype stimuli. This pre-
test utilized a forced choice design as opposed to a continuous scale response.
Participants were instructed to use their general societal knowledge to categorize each
word as typical of men versus women. The negative masculine stereotype stimuli were violent, poor, mediocre, dangerous, and lower-class. The results revealed that participants categorized the traits moody (95%), materialistic (82%), vulnerable (92%), weak (85%), and complaining (95%) as relatively associated with women, $\chi^2$s $> 15.75$, $p$s $< .001$, while poor (83%), dangerous (77%), lower-class (72%), violent (93%), and mediocre (70%) was relatively associated with men, $\chi^2$s $> 11.84$, $p$s $< .001$. These forced choice responses provide additional validation evidence that the stereotype stimuli used in the measures of negative IGSS represent stereotypes mapped on to their respective gender groups.\(^3\)

Finally, following Nosek, Greenwald, and Banaji (2007), a reliability for all IATs was calculated by submitting difference scores between compatible and incompatible block latencies to a Cronbach’s alpha analysis. Consistent with the pre-testing data from Study 1a and in the presented study (see above), the high internal reliability among the IAT trials ($\alpha = 87$) using the negative masculine and feminine stereotypes provide additional validation evidence. Altogether, the masculine and feminine stereotypes represent contemporary deep-rooted beliefs about feminine and masculine negative stereotypes.

**Explicit gender self-stereotyping (negative EGSS).** Participants were instructed to rate the feminine and masculine stereotype words from the IAT on a scale of 1 (not very characteristic of me) to 7 (very characteristic of me). To parallel the IAT score, the negative EGSS was scored as a difference of feminine and masculine ratings such that a relatively high positive score indicates stronger explicit negative female self-stereotyping, a relatively low negative score indicates stronger explicit negative male self-stereotyping,
and a score of zero indicates no self-characterization with feminine nor masculine stereotypes ($\alpha = .77$).

**Results**

ANOVA were run in which condition (coded control = 0, experimental =1) and gender (coded men = 0, women = 1) were entered as main effects, followed by a Condition X Gender interaction, and the manipulation check measures (measurements of negative IGSS and negative EGSS) were entered as dependent variables. The main effect for gender was significant, such that women exhibited stronger negative IGSS than men ($IAT_{women} = .36, SD_{women} = .41; IAT_{men} = -.23, SD_{men} = .33), F(1,57) = 34.32, p = .001$. These results suggest that both men and women showed evidence of negative IGSS on the IAT measure. However, the main effect for condition did not produce significant mean differences in negative IGSS, $F(1,57) = 1.47, p = .23$. Lastly the Condition X Gender interaction did not significantly affect negative IGSS, $F(1,57) = .45, p = .50$.

When negative EGSS was entered as the dependent variable, the main effect for gender was also significant, such that both men and women showed evidence of self-characterizations with negative female stereotypes ($M_{women} = .90, SD_{women} = 1.14; M_{men} = .27, SD_{men} = .55), F(1,57) = 6.93, p = .01$. This finding replicates previous research showing that women explicitly self-stereotype more than men (e.g., Cadinu & Galdi, 2012; Latrofa et al., 2010; Rudman et al., 2001). However, the main effect for condition did not produce significant mean differences in negative EGSS, $F(1,57) = .27, p = .61$. Lastly the Condition X Gender interaction did not significantly affect negative EGSS, $F(1,57) = 1.22, p = .27$. 
Discussion

In Study 2 we found a significant gender main effect. The results demonstrate that women display feminine IGSS while men display masculine IGSS. In addition, both men and women explicitly self-characterize more with the negative female stereotypes, however, women do so to a stronger extent. We speculate that men display a bias toward explicit feminine self-characterizations as a way to appear more chivalrous and empathetic toward women. Overall, these gender difference results provide evidence that the measurements of implicit and explicit negative gender self-stereotyping are reliable and valid. However, and unfortunately, we did not find that women in the IGSS manipulation condition exhibited stronger IGSS relative to women in the control group.

**Study 3: Effect of Negative IGSS on Implicit Self-Esteem**

The goal of Studies 1a-2 was to establish that the negative IGSS manipulation paradigm activates implicit associations between “self” and “female stereotypes.” Although Study 2 did not replicate the initial findings from Study 1b, we proceeded to Study 3 to test the effect of experimentally manipulating negative IGSS on women’s implicit (and explicit) self-esteem. If this experimental manipulation is activating implicit self-stereotyping, then the manipulation should also have a series of theoretically predictable effects on other relevant outcomes including implicit self-esteem. As discussed above, the looking-glass self hypothesis would argue that because society in general holds negative female stereotypic beliefs, women will likely internalize this mental representation (Cooley, 1902; Mead, 1934). Thus, it is likely this negative internalization can have damaging implications for women’s self-concept. However, consistent with SIT, negative IGSS may be enhancing for women because it allows them
to feel included and prototypical members of their gender ingroup (see SIT; Tajfel, 1978; Tajfel & Turner, 1986). Thus, we predicted that women randomly assigned to complete the negative IGSS manipulation would display lower implicit (not explicit) self-esteem relative to women in the control condition.

Method

Participants. Fifty-nine undergraduate female students were recruited from the Rutgers University, Newark, Psychology Department subject pool. Two participants were dropped from analyses because one was an outlier on the measurement of implicit self-esteem in the control condition and the other identified as exclusively homosexual. The final sample consisted of 57 women. Thirty-seven percent were Asian or Pacific Islander, 19% were Caucasian, 16% were another ethnicity not listed, 11% were Hispanic, 9% were African-American, 7% were multi-racial, and 2% were American Indian. Participants’ age ranged from 18 to 46 years ($M = 21.02$, $SD = 5.47$).

Procedure and manipulated variable. This study used the experimental manipulation from Studies 1b and 2 in which participants were randomly assigned to either the negative IGSS condition or the control condition. Then, participants completed measures of implicit and explicit self-esteem.

Measured variables.

Implicit self-esteem. An IAT was administered to measure implicit self-esteem (Greenwald & Farnham, 2000). The Self-Esteem IAT procedure was similar to the description of Study 2’s negative IGSS IAT. However, the Self-Esteem IAT used the two target groups (self vs. others) with two opposing evaluations (good vs. bad words). The good stimuli were smile, gift, joy, paradise, and laughter while the bad stimuli are filth,
cancer, vomit, war, and poison. The Self-Esteem IAT is a reliable and valid measure of implicit self-esteem (Greenwald & Banaji, 1995; Greenwald & Farnham, 2000; Greenwald et al., 2009). Higher IAT D scores indicate high implicit self-esteem (α = .87).

Explicit personal self-esteem. The 10-item Rosenberg self-esteem scale (Rosenberg, 1965) was administered to assess explicit personal self-esteem. This scale is a highly reliable and valid measure of explicit self-esteem (α = .86). Higher scores represent high explicit self-esteem.

Results and Discussion

Female participants who completed the negative IGSS manipulation displayed somewhat higher implicit self-esteem (M = .76, SD = .40) than those in the control condition (M = .58, SD = .39), t(55) = -1.72, p = .09 (Figure 6). This finding is in line with SIT, which argues that individuals can achieve a positive group identity by acting in accordance with group stereotypes (Tajfel, 1978; Tajfel & Turner, 1986). Interestingly, and contrary to a looking-self glass and cognitive consistency hypothesis, the implicit association between oneself and negative gender stereotypes can be enhancing for women because presumably it allows them to feel included and prototypical members of their gender ingroup. Lastly, there were no significant mean differences in explicit self-esteem across condition, (M_{control} = 3.77, S_{control} = .76 vs M_{experimental} = 3.68, S_{experimental} = .60), t(55) = .45, p = .65. In sum, Study 3 found partial support for the prediction that negative IGSS enhances women’s implicit (but not explicit) self-esteem.

Study 4a: Pre-Test Occupation Stimuli for Career Beliefs Measurements

The final goal was to experimentally show that negative IGSS detrimentally impacts women’s career attitudes. To this end, Study 4a recruited three separate sub-
samples to pre-test a set of 84 occupations on their gender, status, and valence relevance. The final occupation stimuli were selected for the measurements of implicit (and explicit) career attitudes and career identification. Following Study 4a, tests were conducted to establish the reliability and validity of career beliefs measurements (Studies 4b and 4c).

**Method**

**Participants.** All participants volunteered in exchange for partial course credit.

*Gender evaluation sample.* Twenty-six undergraduate students (14 women, 11 men, 1 undisclosed).

*Status evaluation sample.* Eighteen undergraduate students (11 women, 6 men, 1 undisclosed).

*Valence evaluation sample.* Twenty-eight undergraduate students (16 women, 12 men, 2 undisclosed).

**Procedure.**


**Measured variables.**

*Gender evaluation.* Participants rated the occupations on a scale from 1 (men) to 7 (mostly women) with the midpoint 4 (both men and women equally) after reading the following instructions:

“The purpose of this survey is to pretest words for a future study. Please rate each occupation on whether you believe these positions are typically
held by men or women. There is no right or wrong answer. We are only interested in your personal beliefs and opinions. Try to answer each question as quickly as possible while trying to use the entire scale in your ratings. Please skip any occupation that you are not familiar with.”

**Status evaluation.** Participants rated the occupations on a scale from 0 (low status) to 6 (high status) after reading the following instructions:

“The purpose of this survey is to pretest words for a future study. *Low status* occupations are occupations with relatively low pay, low prestige, and requiring little education (i.e., high school diploma) while *high status* occupations consist of relatively high pay, high prestige, and requiring high levels of education (i.e., bachelors, masters, PhDs). Please rate each occupation on the extent to which you perceive its corresponding status using the below continuum. Please use the entire scale in your ratings. There is no right or wrong answer. We are only interested in your own personal beliefs and opinions. Try to answer each question as quickly as possible. Please skip any occupations that you are not familiar with.”

**Valence evaluation.** Participants rated the occupations on a scale from -3 (negative) to 3 (positive) after reading the following instructions:

“The purpose of this survey is to pretest words for a future study. Please rate each occupation on whether they are generally believed to be positive or negative in society. There is no right or wrong answer. We are only interested in your own personal beliefs and opinions. Try to answer each
question as quickly as possible. Please skip any occupations that you are
not familiar with.”

Results and Discussion

Gender evaluation. The feminine occupation stimuli (elementary teacher, nurse, social worker, speech therapist) were each significantly above the gender scale midpoint (associated with both men and women equally; see Table 4). In contrast, the masculine occupation stimuli (pilot, surgeon, police officer, ship captain) were each significantly below the gender scale midpoint. In addition, a composite of the four masculine occupations was significantly different from the midpoint and thus was strongly associated with men ($M = 2.55$, $SD = .87$), $t(25) = -9.44$, $p = .001$ while a composite of the four feminine occupations was significantly different from the midpoint and thus was strongly associated with women ($M = 5.29$, $SD = .81$), $t(25) = 8.13$, $p = .001$. Lastly, the gender ratings for the masculine vs feminine occupation composites were significantly different from each other ($M_{women} = 5.29$ vs. $M_{men} = 2.21$), $t(25) = 9.72$, $p = .001$.

Status evaluation. The feminine occupation stimuli (elementary teacher, nurse, social worker, speech therapist) and the masculine occupation stimuli (pilot, surgeon, police officer, ship captain) were each significantly above the status scale midpoint (average status; see Table 4). In addition, a composite of the four masculine occupations was significantly different from the midpoint and thus was perceived as high status ($M = 4.55$, $SD = .71$), $t(27) = 10.65$, $p = .001$ while a composite of the four feminine occupations was significantly different from the midpoint and thus were perceived as high status ($M = 4.11$, $SD = .55$), $t(27) = 11.61$, $p = .001$. Lastly, the status ratings for the masculine versus feminine occupation composites were significantly different from each
other ($M_{women} = 4.11$ vs. $M_{men} = 4.55$), $t(27) = -2.69$, $p = .01$. Thus, masculine and feminine careers differ in status such that both were perceived as high status but the masculine careers were significantly higher than the feminine careers. However, this difference in status evaluations is primarily driven by the women who perceive a much larger difference in status across the masculine versus feminine occupations than men.

**Valence evaluation.** The feminine occupation stimuli (elementary teacher, nurse, social worker, speech therapist) and the masculine occupation stimuli (pilot, surgeon, police officer, ship captain) were each significantly above the valence scale midpoint (neutral valence; see Table 4). In addition, a composite of the four masculine occupations was significantly different from the midpoint and thus was perceived as positive ($M = 1.81$, $SD = 1.30$), $t(17) = 5.91$, $p = .001$ while a composite of the four feminine occupations was significantly different from the midpoint and thus were perceived as positive ($M = 1.92$, $SD = 1.17$), $t(17) = 5.91$, $p = .001$. Lastly, the valence ratings for the masculine vs feminine occupation composites were not significantly different from each other and thus were equal in terms of valence ($M_{women} = 1.92$ vs. $M_{men} = 1.81$), $t(17) = .55$, $p = .59$. This finding suggests that perhaps the status and valence of gendered occupations are distinct constructs.

In summary, Study 4a yielded four masculine occupations (pilot, ship captain, police officer, surgeon) and four feminine occupations (nurse, elementary teacher, speech therapist, social worker) that will be used to create measurements of career beliefs in Study 4b. The occupations were (a) strongly associated with women versus men and (b) are relatively high in status, and (c) positive in valence.
Study 4b: Pilot Implicit Career Identification and Attitude Measurements

Study 4b sought to establish reliable and valid measures of implicit (and explicit) career identification and career attitudes as no such measures exist in the literature that assess implicit attitudes beliefs about careers targeted in the present research. Career identification is defined as the extent to which individuals associate their self-concept with feminine versus masculine occupations. Career attitudes are defined as the extent to which individuals express negative versus positive attitudes toward feminine versus masculine occupations. We predicted that women would display implicit and explicit identification with, and positive attitudes toward, feminine careers while men should display implicit and explicit identification with and positive attitudes toward masculine careers.

Method

Participants. Forty-one students (21 women, 20 men) participated in a study on “personal cognition” in exchange for partial course credit or extra credit.

Procedure. Participants completed the measures of implicit and explicit career identification and career attitudes (counterbalanced) in individual private rooms. The implicit measures always preceded the explicit measures. Finally, participants were fully debriefed.

Implicit career identification. An IAT (Greenwald et al., 1998) was administered to measure implicit career identification. The Career Identification IAT measured the relative strength with which two target groups (self vs. others) were associated with two opposing evaluations (nurturing vs. physical occupations). Nurturing occupations were defined as jobs that involve supporting and encouraging others. The nurturing occupation
stimuli were elementary teacher, nurse, social worker, speech therapist. Physical occupations were defined as jobs that involved physical training and are relatively demanding on the body. Physical occupation stimuli were ship captain, police officer, pilot, and surgeon. A relatively high positive IAT $D$ indicates faster associations between the self and feminine occupations (implicit identification with feminine careers), a relatively low negative IAT $D$ indicates faster associations between the self and masculine occupations (implicit identification with masculine careers), and an IAT $D$ score of zero indicates equally speeded associations between the self and both gender occupations (no identification with either type of gendered careers; $\alpha = .75$).

**Implicit career attitudes.** Similarly, we administered an IAT to measure implicit career attitudes. In this IAT, the categories were good (laughter, gift, joy, paradise, smile) and bad (filth, cancer, vomit, poison, war), versus nurturing and physical occupations (same occupation stimuli in the Career Identification IAT above). A relatively high positive IAT $D$ on indicates faster associations between the positive and feminine occupations (positive attitudes toward feminine careers), a relatively low negative IAT $D$ indicates faster associations between the positive and masculine occupations (positive attitudes toward masculine careers), and an IAT $D$ score of zero indicates equally speeded associations between the positive and both gender occupations (no bias toward feminine nor masculine careers; $\alpha = .88$).

**Explicit career identification.** Participants were instructed to indicate the extent to which they personally identified with each occupation using in the IAT (i.e., the extent to which they are interested in pursuing the occupation) at the present moment or in the future on a scale of 0 (not very interested) to 6 (very interested). To parallel the Career
Identification IAT score, we scored the explicit career identification ratings as a difference of feminine and masculine ratings such that a relatively high positive score indicates stronger explicit identification with feminine occupations, a relatively low negative score indicates stronger explicit identification with masculine occupations, and a score of zero indicates no bias toward feminine nor masculine occupations ($\alpha = .64$).

**Explicit career attitudes.** Participants were instructed to indicate the extent to which they felt generally negative versus positive toward each occupation used in the IAT on a scale of -3 (negative) to 3 (positive). To parallel the Career Attitudes IAT score, we scored the explicit career attitude ratings as a difference of feminine and masculine ratings such that a relatively high positive score indicates stronger explicit positive attitudes toward feminine occupations, a relatively low negative score indicates stronger explicit positive attitudes toward masculine occupations, and a score of zero indicates no bias toward feminine nor masculine occupations ($\alpha = .90$).

**Results**

**Career identification.** Women displayed stronger implicit identification with feminine than masculine careers compared to men $t(39) = -3.26, p = .002$ (see Figure 7). Moreover, women’s implicit identification IAT D scores were different from zero ($M = .33, SD = .45$), $t(20) = 3.32, p = .003$, while men’s scores showed no bias in implicit career identification ($M = -.09, SD = .35$), $t(19) = -1.11, p = .28$. Women displayed more explicit identification with feminine than masculine careers while men do not $t(39) = -2.11, p = .04$ (see Figure 9). More specifically, women showed evidence of explicit identification with feminine careers ($M = 1.05, SD = 1.82$), $t(20) = 2.63, p = .016$, while
men showed no bias to explicitly identify with either type of gendered career \((M = -.16, SD = 1.84)\), \(t(19) = .39, p = .69\).

**Career attitudes.** Women displayed stronger implicit positive attitudes toward feminine than masculine careers compared to men \(t(39) = -2.52, p = .02\) (see Figure 8). Moreover, women showed evidence of positive implicit career attitudes toward feminine careers \((M = .66, SD = .64)\), \(t(20) = 4.75, p = .001\), while men interestingly also showed marginally positive implicit attitudes toward feminine careers \((M = .21, SD = .51)\), \(t(19) = 1.82, p = .085\). The explicit career attitude scores for women versus men were not significantly different \(t(39) = -.86, p = .39\) (see Figure 10). Interestingly, both women \((M = .62, SD = .75)\) and men \((M = .40, SD = .89)\), showed evidence of positive explicit career attitudes toward feminine careers, \(t(20) = 3.79, p = .001, t(19) = 2.08, p = .058\), respectively.

Table 5 presents the correlations between implicit and explicit career identification and career attitudes as a function of gender. Among women only, strong implicit identification with feminine careers was associated with strong positive implicit attitudes toward feminine careers, \(r_{women} = .71, p = .001\), and strong explicit identification with feminine careers was associated with strong positive explicit attitudes toward feminine careers, \(r_{women} = .42, p = .01\). Interestingly, among men only, strong implicit identification with feminine careers was associated with strong positive explicit attitudes toward feminine careers, \(r_{men} = .55, p = .001\).

**Discussion**

Study 4b allowed us to develop and calibrate the career belief measurements. The results for the implicit career attitude gender difference analysis reveal that both men and
women displayed positive implicit attitudes toward feminine careers but women did so to a stronger extent. The results for the explicit career attitude gender difference analysis reveal that both men and women displayed similar levels of positive explicit attitudes toward feminine careers. The results for career identification reveal that men displayed no implicit or explicit identification with either type of career while women strongly implicitly and explicitly identify with feminine careers. Overall, these gender difference results provide evidence that these career belief measures are reliable and valid.

We speculate that men displayed positive implicit and explicit attitudes toward feminine careers and no implicit or explicit identification with either type of career because perhaps our society is open minded to and even encouraging of the fact that men should be able to pursue traditionally feminine occupations. Evidence for this stems from recent research demonstrating that men are beginning to pursue feminine careers such as: elementary school teaching, flight attendance, librarianship, and nursing (Rajacich, Kane, Williston, & Cameron, 2013; Simpson, 2005).

**Study 4c: Effect of Negative IGSS on Implicit Career Identification and Attitudes**

Study 4c examined the experimental effect of negative IGSS on the newly developed measurements of implicit and explicit career identification and attitudes from Study 4b. We predict that women who negative IGSS will express stronger implicit (not explicit) identification with, and positive attitudes toward, feminine careers than masculine careers. This is in line with research suggesting that women feel more comfortable in domains where women stereotypically excel and where women recognize similarities with same-sex role models (Asgari et al., 2010; Ceci et al., 2009; Dasgupta, 2011; Lockwood, 2006; Markus & Nurius, 1986). Moreover, social roles influence
women to navigate away from powerful leadership careers and more toward relational or
care-focused careers (e.g., Eagly & Karau, 2002; Killeen et al., 2006; Lips, 2000).

Method

Participants. Fifty-seven undergraduate female students were recruited from
the Rutgers University, Newark, Psychology Department subject pool. Three participants
were dropped from analyses because one participant made too many errors on the
conditioning (manipulation) task, one participant made too many errors on the career
identification IAT, and one participant identified as being a man. The final sample
consisted of 54 women. Twenty-eight percent were Asian or Pacific Islander, 24% were
African-American, 20% were Caucasian, 9% were another ethnicity not listed, 7% were
Hispanic, and 2% were multi-racial. Participants’ age ranged from 18 to 51 years ($M =
20.43$, $SD = 4.82$).

Procedure and manipulated variable. The experimental negative IGSS
manipulation from Studies 1b-3 was used in this study. Then, participants completed
measures of implicit and explicit career identification and career attitudes (established in
Study 4b). The administration of career identification and career attitudes measures was
counterbalanced.

Measured variables.

Implicit and explicit career identification and career attitudes. The IAT ($\alpha = .67$
and $\alpha = .66$, respectively) and self-report measures ($\alpha = .71$ and $\alpha = .84$, respectively)
from Study 4b were used.

Explicit activity preferences. An assessment of explicit activity preferences was
also administered (modified from the Strong Campbell Inventory; Campbell & Hansen,
1981). It listed 17 activities that are stereotypically feminine (e.g., cooking, taking care of children, decorating a room with flowers, checking computerized documents for errors, looking at things in a clothing store, providing first aid, making friends, smoothing out disagreements, having patience when teaching others; α = .68) and masculine (e.g., drilling soldiers, taking responsibility, competitive activities, operating machinery, using small hand tools, adjusting a car engine, developing business strategies, using creative technical skills; α = .61). Participants rated each of these activities on a 0 (not at all interested) to 4 (very interested) scale. We converted this continuous scale into a categorical variable in order to score the items in line with the original measure’s scoring algorithm (percent of interest; Campbell & Hansen, 1981). Participants who indicated that they were “not at all interested” in an activity received a score of zero, and those who indicated “interested” received a score of one. Next, a percentage was calculated such that the sum of traditionally female activities participants expressed interest in was divided by the total number of traditionally female activities. A similar percentage was calculated for the sum of interest in traditionally male activities out of the total number of male activities. A relatively high percentage for traditionally female activities indicates strong interest in feminine-typical activities whereas a relatively high percentage for traditionally male activities indicates strong interest in masculine-typical activities.

Results and Discussion

The experimental manipulation had no impact on any of the career related dependent variables: implicit career attitudes ($M_{\text{control}} = .73$, $SD_{\text{control}} = .36$ vs $M_{\text{experimental}} = .69$, $SD_{\text{experimental}} = .44$), $t(52) = .39$, $p = .70$, explicit career attitudes ($M_{\text{control}} = 1.08$, $SD_{\text{control}} = .97$ vs $M_{\text{experimental}} = .86$, $SD_{\text{experimental}} = 1.09$), $t(52) = .77$, $p = .44$, implicit
career identification ($M_{control} = .39$, $SD_{control} = .37$ vs $M_{experimental} = .35$, $SD_{control} = .44$),
$t(52) = .36, p = .71$, explicit career identification ($M_{control} = 1.55$, $SD_{control} = 1.55$ vs $M_{experimental} = 1.57$, $SD_{experimental} = 1.83$), $t(52) = -.04, p = .97$, or explicit male activity preferences ($M_{control} = .76$, $SD_{control} = .18$ vs $M_{experimental} = .77$, $SD_{experimental} = .19$), $t(52) = -.14, p = .89$, or explicit female activity preferences, ($M_{control} = .92$, $SD_{control} = .14$ vs $M_{experimental} = .94$, $SD_{experimental} = .89$), $t(52) = -.83, p = .41$ (modified Strong Campbell Inventory; Campbell & Hansen, 1981). Thus, Study 4c unfortunately demonstrated that the negative IGSS manipulation had no significant impact on any of the career belief measurements.

**Study 5: Effect of a Revised Negative IGSS Experimental Manipulation on Implicit Self-Esteem and Implicit Career Identification**

Studies 1b-4c yielded mixed results. Study 1b showed evidence that the manipulation procedure activated negative IGSS on a Me/Not-Me task. However, Study 2 did not replicate this effect when an IAT was used to measure negative IGSS. Study 3 revealed that the (presumed) negative IGSS manipulation led women to exhibit somewhat higher implicit (but not explicit) self-esteem when compared to women in a control condition. Finally, in Study 4c, the negative IGSS experimental manipulation did not impact implicit or explicit career attitudes or career identification.

In light of the mixed evidence, we sought to provide an additional test of experimentally manipulating negative IGSS, but with a revised paradigm. Since the pilot tests for the measurements of career identification and career attitudes yielded predicted gender effects for women versus men, we argue that these measures are reliable and valid. In addition, the Self-Esteem IAT is a reliable and valid measure of implicit self-
esteem (e.g., Greenwald & Banaji, 1995; Greenwald & Farnham, 2000; Laws & Rivera, 2012). Thus, the data inconsistencies were not likely the result of our measured variables. Instead, perhaps the stereotype word presentation duration (1500 ms per trial) in the negative IGSS manipulation task allowed participants to thoroughly deliberate about (a) the meaning of each stereotype and (b) its personal relevance which would not necessarily activate implicit, automatic self-stereotyping associations. Thus, in the final study we administered a different negative IGSS manipulation paradigm that utilized a subliminal presentation procedure (described below in detail) in hopes of demonstrating that manipulating negative IGSS can shift implicit self-esteem and implicit career identification.⁶

Lastly, and as an additional control condition, we administered a stereotype-only condition in which participants were subliminally primed with a neutral word (as opposed to a self-word) prior to the presentation of the negative female stereotypes (described in detail below). Exposure to stereotypes only represents a context in which stereotypes are activated. For example, Levy’s subliminal priming research on age self-stereotyping in the elderly is an example of a stereotype activation paradigm (Levy, 1996; Levy & Leifheit-Limson, 2009). Although the authors refer to this paradigm as self-stereotyping, we argue it more accurately represents stereotype priming and activation because participants were simply subliminally primed with aging stereotypes, social category words, and neutral words (but not self-relevant words). The results revealed that among participants who received positive age stereotype subliminal primes experienced improved memory performance and memory efficacy compared to those participants who received negative age stereotyped subliminal primes (Levy, 1996). However, a limitation
of this study is that the authors did not prime an association between the self-concept and ingroup stereotype per se. Therefore, it remains questionable if the prime merely resulted in stereotype activation.

In the context of gender stereotypes, some research suggests that stereotype activation and explicit self-stereotyping are interconnected (Chiu et al., 1998, Study 2). Researchers found that male and female high school students exposed to two gender-related pictures (i.e., magazine advertisement of a feminine woman and masculine man) generated significantly more gender stereotypical self-descriptions than participants exposed to two gender-neutral pictures (i.e., advertisement for a food festival and for environmental protection). Thus, the gender-related pictures temporarily increased the accessibility of stereotypes associated with gender ingroups, and led to increased explicit gender self-stereotyping in both males and females. We argue that our new IGSS manipulation will reveal implicit gender self-stereotyping effects that are above and beyond stereotype activation.

Therefore, in Study 5, we predicted that women randomly assigned to complete the self-stereotyping condition would display stronger implicit (not explicit) self-esteem and identification with female careers relative to women in the two control conditions including the stereotype activation condition.

**Method**

**Participants.** Fifty-two Rutgers University, Newark, undergraduate female students were recruited to participate in this study in exchange for either partial course credit or $10 cash. Three participants were dropped from analyses because one was an outlier on explicit self-esteem (very low self-esteem) and two did not complete the IAT
task correctly. The final sample consisted of 49 women. Twenty-one percent were African American, 18% were another ethnicity not listed, 18% were Asian or Pacific Islander, 18% were Caucasian, 14% were Hispanic, and 6% were multi-racial. Participants’ age ranged from 18 to 27 years ($M = 19.39, SD = 2.01$).

**Procedure.** In this study, participants were randomly assigned to one of three conditions: negative IGSS, stereotype-only, or a no stereotypes control condition. The negative IGSS and stereotype-only conditions completed a new manipulation (described in detail below) while the no stereotype control group did not complete either task but proceeded directly to the measures of implicit and explicit self-esteem and career identification. Lastly, participants were fully debriefed.

**Manipulated variable.**

*Implicit negative gender self-stereotyping versus stereotype-only.* We implemented a sequential subliminal priming task that was presented as a lexical decision task (modified from Laws & Rivera, 2012, Lun et al., 2009; Wittenbrink et al., 1997) as the new manipulation of negative IGSS. On each trial, participants were shown either a stereotype word or non-word. The stereotype words were the same pre-tested negative female stereotypes from our previous manipulation task (presented three times each). The nonwords were thormal, posirion, netessary, glasz, nosa, tosorrow, avay, tand, chayr, and draxer (presented two times each). In the task, participants decided if the stimulus presented is a word or a non-word across 50 trials.

During the task, participants were first instructed to direct their attention to a fixation point (X) that was presented in the middle of the screen. Next, a string of X’s (XXXXXXXXXXX) was presented in the center of the screen for 1,000 ms (forward mask).
This string of X’s was immediately replaced with a subliminal prime for 15 ms. The subliminal prime was then replaced with the “XXXXXXXXXX” for another 1,000 ms (backward mask). Following the forward mask-prime-backward mask sequence, a stereotype word or nonword appeared. Then, participants made their lexical judgment—they pressed the right control key for a word judgment or the left control key for a nonword judgment. The computer program waited for a correct response before continuing to the next trial. To allow participants to become acquainted with the task before completing the critical trials, four practice trials were completed including two word trials (apple, pencil) and two nonword trials (youey, njoue). In the negative IGSS condition, we manipulated self-stereotyping by subliminally priming a self-relevant word (I, me, or self). However, in the stereotype-only condition, we presented a neutral word (a, at, or the) as the subliminal prime. Finally, participants in the no stereotype control condition did not complete any version of the lexical decision task, but rather proceeded directly to the measurement of the dependent variables.

**Measured variables.**

*Implicit self-esteem.* The Self-Esteem IAT ($\alpha = .68$) from Study 3 was used.

*Explicit self-esteem.* The measure of explicit self-esteem from Study 3 was modified by implementing it as a measure of *state* rather than *trait* self-esteem as our manipulation may arguably influence more momentary rather than long-term changes in self-esteem. The six-item modified Rosenberg self-esteem scale (Rosenberg, 1965) was administered to assess explicit state self-esteem ($\alpha = .89$). These items consisted of such as statements as “At this moment, I feel positive about myself” and “At this moment, I am satisfied with who I am.”
Implicit and explicit career identification. The IAT (α = .79) and self-report measures (α = .78) from Study 4b were used. However, in the IAT, the category label for masculine careers was changed from “physical” to “mechanical” to better capture collection of occupations (pilot, ship captain, police officer, and surgeon). Mechanical occupations were defined as jobs that involved physical training for standardized and routine duties.

Results

Planned comparisons were run using condition (coded no stereotype control = -.5, stereotype-only = -.5, self-stereotyping = 1) as the independent variable and the implicit and explicit self-esteem and career identification variables as dependent variables. In line with Study 3, women in the self-stereotyping condition displayed higher implicit self-esteem (M_{self-stereotyping} = .74, SD_{self-stereotyping} = .22) than women in the combined stereotype-only and no stereotype control conditions (M_{no stereotype control} = .47, SD_{no stereotype control} = .40; M_{stereotype-only} = .55, SD_{stereotype-only} = .52), t(40.64) = 2.26, p = .03 (see Figure 11). Furthermore, there were no differences in explicit self-esteem as a function of conditions (M_{self-stereotyping} = 4.22, SD_{self-stereotyping} = .65; M_{no stereotype control} = 4.02, SD_{no stereotype control} = .81; M_{stereotype-only} = 3.84, SD_{stereotype-only} = .70), t(46) = 1.45, p = .16.

Also in support of our predictions, women in the self-stereotyping condition displayed stronger implicit identification with feminine than masculine careers (M_{self-stereotyping} = .66, SD_{self-stereotyping} = .29) compared to the combined stereotype-only and no stereotype control conditions (M_{stereotype-only} = .43, SD_{stereotype-only} = .34 versus M_{no stereotype control} = .35, SD_{no stereotype control} = .52), t(46) = 2.23, p = .03 (see Figure 12). Similarly, and consistent with our predictions there were no differences in explicit career identification
between experimental ($M_{\text{self-stereotyping}} = 1.87, SD_{\text{self-stereotyping}} = 1.24$) and the combined control conditions ($M_{\text{stereotype-only}} = 1.85, SD_{\text{stereotype-only}} = 1.26$ versus $M_{\text{no stereotype control}} = .88, SD_{\text{no stereotype control}} = 1.39$), $t(46) = 1.28, p = .21$.

**Supplemental analyses.** It appears that negative IGSS may simultaneously be beneficial (i.e., enhancing implicit self-esteem) and detrimental (i.e., enhancing implicit traditional career identification and thus upholding the status quo) for women. If self-esteem and career identification are two facets of the same overarching self-image, one could argue that these two constructs should be highly correlated. For example, research demonstrates that high self-esteem (measured by the Rosenberg scale) is associated with high occupational prestige (measured by the Duncan Socioeconomic Index; Duncan, 1981; see Bachman & O'Malley, 1977; Kammeyer-Mueller & Judge, 2008). In line with these ideas, a meta-analysis of self-esteem and socioeconomic status finds that high self-esteem is associated with high occupational status and this relationship increases as women (but not men) get older (Twenge & Campbell, 2002). In addition, Zuckerman (1980) finds that women with high self-esteem tend to be more nontraditional in their sex role beliefs. Women with high self-esteem tend to hold nontraditional beliefs regarding the rights and privileges of women, which have implications for nontraditional career aspirations. In summary, high self-esteem tends to be associated with high career status.

Therefore, we ran correlations between self-esteem and career identification, for implicit and explicit outcomes separately. We found that implicit self-esteem and implicit career identification were unrelated across each condition, $r_{\text{self-stereotyping}} = .18, r_{\text{stereotype-only}} = .20, r_{\text{no stereotype control}} = .12, ps = ns$. Similarly, explicit self-esteem and explicit career identification were unrelated across each condition, $r_{\text{self-stereotyping}} = -.23, r_{\text{stereotype-only}} = -$.
.29, \( r_{no\ stereotype\ control} = -.30, ps = ns \). These non-significant correlations reveal that perhaps self-esteem and career identification represent two distinct facets of women’s self-image. Although Study 5 does not provide support for a relation between self-esteem and career identification, we speculate that certain contexts may activate this relationship. For instance, a self-affirmation can psychologically immunize a threatened self-image (Sherman & Hartson, 2011; see also Laws & Rivera, 2012) and thus may activate or enhance the self-esteem and career identification relation.

**Discussion**

In summary, the finding that negative IGSS increases women’s implicit self-esteem relative to the stereotype-only and no stereotype control conditions is in line with SIT (Abrams & Hogg, 2010, Tajfel, 1978; Tajfel & Turner, 1986; Hogg & Turner, 1987) - associating oneself with ingroup stereotypic traits can be enhancing to one’s self-image, even when those traits are negative, as it appears to allow group members to feel included and prototypical of their ingroup. Lastly, the finding that negative IGSS increases women’s implicit identification with feminine careers relative to masculine careers is in line with our predictions that negative IGSS may subconsciously prevent women from striving for higher status, more prestigious, competitive, traditionally masculine occupations.

**General Discussion**

The present research examines the role of negative IGSS in women’s self-esteem and career attitudes. The first goal of this research was to establish a method that experimentally manipulates negative IGSS (Studies 1-5). Pre-testing resulted in the following stimuli, representing strong negative, female relevant words: *moody,*
materialistic, weak, vulnerable, and complaining. Study 1b showed evidence that the manipulation procedure activated negative IGSS on a Me/Not-Me task. However, Study 2 did not replicate this effect when an IAT was used to measure negative IGSS.

The second goal of this dissertation was to experimentally show that negative IGSS in women decreases their implicit (but not explicit) self-esteem (Study 3 & 5). Study 3 revealed that the (presumed) negative IGSS manipulation led women to exhibit somewhat higher implicit (but not explicit) self-esteem when compared to women in a control condition. This finding is in line with social identity theory (SIT), which argues that individuals can achieve a positive group identity by acting in accordance with group stereotypes (Tajfel, 1978; Tajfel & Turner, 1986). This finding is in contrast with looking-glass self and cognitive consistency theories (Cooley, 1902; Mead, 1934; Festinger, 1957; Festinger & Carlsmith, 1959; Gawronski, 2012). Thus, it appears that self-stereotyping, even when the stereotypes are negative, can be enhancing for women because it allows them to feel included and prototypical members of their gender ingroup.

The final goal of the dissertation was to experimentally show that negative IGSS in women detrimentally impacts their implicit (but not explicit) career identification and career attitudes (Studies 4 & 5). In Studies 4a and 4b, we developed and calibrated the measurements of career attitudes and career identification. However, in Study 4c, the experimental manipulation of negative IGSS produced no significant differences in career attitudes or career identification (implicit or explicit), across condition.

Thus, Studies 1b-4c yielded one significant result, one marginal result and two null results. It is plausible that the stereotype word presentation duration (1500 ms per trial) in the negative IGSS manipulation task allowed participants to thoroughly deliberate about
(a) the meaning of each stereotype and (b) its personal relevance which would not necessarily activate implicit, automatic self-stereotyping associations.

Therefore, in Study 5 we administered a different negative IGSS manipulation paradigm that utilized a subliminal presentation procedure. This manipulation involved a lexical decision task where participants must judge a set of stimuli as either words (gender stereotypes) or nonwords. Before the presentation of each gender stereotype word, participants in the negative IGSS condition were subliminally primed with a self-relevant word while participants in the stereotype-only condition were subliminally primed with a neutral word. The control condition did not complete either task. The results using the revised manipulation paradigm revealed that women in the negative IGSS experimental condition displayed higher implicit (but not explicit) self-esteem and displayed more implicit (but not explicit) identification with feminine than masculine careers compared to the combined control conditions. Thus, negative IGSS appears to have a beneficial effect for women’s self-esteem yet a harmful effect for their career identification. Women who associate themselves with negative female stereotypes may be less motivated to strive for high powered, high status, traditionally masculine careers. Perhaps negative IGSS in women influences women to want to maintain the status quo (e.g., Benokraitis & Feagin, 1995; Jost & Banaji, 1994).

**Negative Versus Positive Stereotypes**

The present research focuses exclusively on *negative* female stereotypes because of their (relative to positive stereotypes) unique implications for the detrimental impact on women’s self-esteem and career attitudes (Cejka & Eagly, 1999; Gadassi & Gati, 2009; Ritsher et al., 2003; Whitely, 1983). More specifically, women who implicitly associate
themselves with negative female relevant traits (e.g., weakness), have lower self-esteem relative to women who do not associate themselves with such attributes (Rudman et al., 2001, Study 3). In addition, women who associate themselves with negative female relevant traits (e.g., follower) displayed more interest in feminine rather than masculine jobs (Rudman & Phelan, 2010), suggesting, negative stereotypes might influence women to steer clear of the challenges associated with masculine, prestigious occupations. Lastly, negative gender stereotypes (i.e., women are bad at math) contribute to women’s underperformance on mathematical tests (e.g., Ambady, Paik, Steele, Owen-Smith, & Mitchell, 2004). In addition, women may hold mental representations of themselves as moody, weak, complaining, and vulnerable—these traits, due to their negative nature, may deflate confidence in completing jobs or tasks that require strength, power, and level-headed (non-emotionally driven) decision making. These associations might translate into women not having the confidence, motivation, or abilities to achieve in traditionally masculine fields.

In contrast, positive gender stereotypes may yield somewhat ambiguous implications as they may produce either detriments or enhancements to women’s self-esteem and career attitudes. For instance, females who associate themselves with socially desirable expressive traits have higher psychological well-being as indicated by positive relations with others (September et al., 2001). However, other research suggests that women who heard a positive stereotype about their female ingroup (e.g., "women are nurturing") during an intergroup interaction, derogated their partner and experienced greater negative emotions than those who heard no stereotype (Siy & Cheryan, 2013). This research illustrates distinct consequences (positive and negative) of women’s responses to being
the target of positive stereotypes. Therefore, future research should explore the potential beneficial versus harmful effects of positive IGSS in women’s self-esteem and career attitudes as perhaps under certain conditions these traits may lead to decreases in implicit self-esteem and more positive attitudes toward masculine than feminine careers.

**Possible Moderators of the Effect of Negative IGSS on Implicit Self-Esteem and Implicit Career Identification**

The present research establishes negative IGSS as a causal factor for changes in implicit self-esteem and implicit career identification. Future research should explore the role gender beliefs play in moderating the relationship between gender self-stereotyping in women, self-esteem, and career identification. Gender beliefs are deeply embedded cognitive frameworks regarding what society defines as socially appropriate masculine and feminine traits. Gender beliefs may serve as a moderator because research suggests that exposure to benevolent sexism enhances women’s autobiographical recall of incompetency (Dumont, Sarlet, & Dardenne 2010), which can deflate their self-worth and prevent them from achieving greater equality. Therefore, one plausible prediction is that women who believe in traditional gender roles may be more strongly affected by negative IGSS, producing more robust effects on self-esteem and career attitudes than females who believe in more nontraditional gender roles. Examples of assessments of gender beliefs are: the Ambivalent Sexism Inventory (Glick & Fiske, 1996, 1997, 2001, 2011; Lee, Fiske, & Glick, 2010), the Feminist Identity Development Scale (Bargad & Hyde, 1991), or the Attitudes Toward Equality Between the Sexes Scale (MacDonald, 1976).

In addition, researchers recently examined the role of female exemplars in women’s career attitudes (Stout et al., 2011). More specifically, a longitudinal study revealed that
the more women interact with female experts in science, technology, engineering, and mathematic (STEM) fields, the more they implicitly identify with math than English on an IAT (Stout et al., 2011). The present research extends this work by examining the role of gender self-stereotyping in actual career attitudes. In other words, the present research utilized specific and rigorously pre-tested gender stereotypes (in the negative IGSS manipulation) and occupations (in the measurements of career attitudes and career identification).

Occupational prestige is the value or worthiness individuals ascribe to various occupations (Hodge, Siegel, & Rossi, 1964). Some occupational prestige scales, like Duncan’s (1961) Socioeconomic Index (SEI), take into consideration relevant factors such as income and education which often directly influence judgments of occupational prestige. This construct of occupational prestige is relevant for the present research as male dominated occupations are perceived as more prestigious than female dominated occupations. This status inequity occurs because historically women tend to occupy lower status positions than men, have more difficulty advancing in their careers, and are paid far less than men in the same position (Treiman & Terrell, 1975, Buchmann & Kriesi, 2009). So, the question becomes, can prestige be equated across stereotypically gendered occupations or is prestige an inherent part of these careers? Social role theory provides indirect evidence that occupational prestige is an inherent part of gender stereotyped careers. This theory argues that the structure of society is what enables males to hold these high prestige positions over females. For example, this theory argues that society expects men and women to exude attributes that permit them to carry out their sex-typical work (Eagly, 1997; Eagly & Wood, 2012). This expectation is evident through the
differential treatment of girls and boys during child rearing, the differential skill sets typically taught to girls and boys (sports and military skills for boys and compassionate, nurturing skills for girls), and the occupational segregation that continues to affect our society.

In other words, the historical structure of our society creates these stereotypic behaviors, attitudes, and feelings in which males are dominant and hold prestige over women. As recent evidence of the challenge to equate prestige across genders, researchers who assess IGSS have begun to use alternative attribute dimensions on gender self-stereotyping IATs: “leader” versus “learner” (Dasgupta & McCall, 2007) and “leader” versus “follower” (Rudman & Phelan, 2010) to try and account for the inherent prestige and general valence differences associated with male versus female stereotypes. These “leader” versus “learner” versus “follower” attribute dimensions illustrate the difficulty in creating a methodology whereby we can overcome the inherent inequality of prestige across stereotypically gendered occupations.

In a series of tests to establish the reliability and validity of the present measures of career identification and career attitudes, we were able to carefully select four occupations that represent nurturing, feminine careers and four occupations that represent mechanical, masculine careers. Elementary teacher, social worker, speech therapist, and nurse were each individually and as a composite strongly associated with women, perceived to be high status, and perceived as positive in valence. Ship captain, police officer, pilot, and surgeon were each individually and as a composite strongly associated with men, perceived to be high status, and perceived as positive in valence. In addition, the valence ratings for the masculine versus feminine occupation composites were equal.
Lastly, the masculine and feminine career composites differed in status such that both were perceived as high status but the masculine careers were significantly higher than the feminine careers. Although the present research was able to equate for valence, both masculine and feminine career composites were perceived as high status. Moreover, the masculine careers were perceived as being of higher status than the feminine careers. This difference in status evaluations speaks to the continued gender gap in high status occupations.

**Implications**

The present research has theoretical implications for the literature on stereotype threat. Stereotype threat occurs when individuals are at risk for confirming a negative stereotype of their ingroup on a performance outcome (e.g., Steele & Aronson, 1995; Croizet, Désert, Dutrévis, & Leyens, 2000). Research on stereotype threat examines women in the stereotype domain of being intellectually inferior in math when compared to men (e.g., Schmader, 2002). Merely indicating that a test represents a diagnostic of mathematical ability activates women’s fear of confirming the intellectually inferior stereotype which subsequently impairs their mathematical performance.

Stereotype threat outlines the conditions that highlight individuals’ group membership and stereotypes of their ingroup, which subsequently leads to underperformance on stereotype relevant tasks. It is plausible that stereotype threat contexts may activate negative IGSS which, in turn, can affect performance. Therefore, the processes of self-stereotyping and stereotype threat are related as both demonstrate that stereotypes of disadvantaged groups continue to infiltrate the thoughts and self-concepts of group members which further propels the constant cycle of stigmatization.
Self-stereotyping may have implications for the underlying process of stereotype threat. Specifically, self-stereotyping may best serve as a potential mediator in the relationship between stereotype threat and underperformance in math among women. Altogether, the above suggests that stereotype threat activates self-stereotyping which then shapes underperformance on stereotype relevant tasks.

The present research assesses women’s career attitudes and career identification as an indicator of what careers women might eventually pursue. This construct has implications for actual behaviors such as career choice and career preference. The idea that attitudes predict preferences is in line with consumer behavior research which shows that implicit attitudes toward yogurt brands, soda brands, and fast food restaurants predicts the frequency of consumption of, and preference for, each of these products (Quek & Ortony, 2012). The motivation and opportunity as determinants of the attitude-behavior relation model (MODE; Fazio & Towles-Schwen, 1999) argues that behavior is influenced by controlled processes only when individuals are motivated to engage in deliberate reasoning and have the opportunity to do so (i.e., such as time and cognitive capacity). If individuals lack either the motivation and/or opportunity, automatically activated processes and attitudes influence behavior. We speculate that the automatic activation of implicit career attitudes and implicit career identification will influence individuals’ automatic career preferences because they do not have the motivation or opportunity to engage in deliberate processing which may interfere with the relationship of these two constructs.

The present research focuses on the domain of gender self-stereotyping. However, we argue that our manipulation of negative IGSS is easily translatable to other domains
such as ethnic, national, age, and religious self-stereotyping. For example, previous research demonstrates that self-stereotyping in different domains is linked to self-esteem. In fact, *ethnic* self-stereotyping among Latinos (e.g., *lazy, freeloadling, criminal, hardworking, peaceful, ambitious*) leads to low self-esteem (Rivera & Paredez, 2014) and *university* self-stereotyping moderates the effect of public collective self-esteem on ingroup favoritism (De Cremer, 2001). However, implicit *ethnic* self-stereotyping among Whites using *positive* traits (e.g., *successful, rich, educated*) was associated with higher state self-esteem (Lun et al., 2009, Study 2). Lastly, preliminary analyses of current research in our lab suggests that African Americans and Latinos who complete a version of the present implicit negative self-stereotype manipulation display lower implicit self-esteem relative to a control condition (Ahmed & Rivera, 2013). Given this mixed evidence for the implicit self-stereotyping and self-esteem relation, we speculate that future research, with specific attention to stereotype valence, is needed to fully understand the basic underlying processes involved in self-stereotyping in other domains.

Finally, although our data does not test how long our manipulation effects last, we speculate that the more these constructs of “self” and “female stereotypes” are associated over time, the more likely individuals will have chronic or long lasting mental representations of such associations in memory. However, only a longitudinal study can address this limitation. Research suggests that both short-term experimental manipulations of *and* real-world, long-term exposure to counterstereotypic exemplars (i.e., women in leadership roles) both influence women’s automatic gender attitudes (Dasgupta & Asgari, 2004). Specifically, women who read biographies about female leaders were more likely to implicitly associate women with leadership than individuals
who read about flowers (Dasgupta & Asgari, 2004, Study 1). For example, women who
attended an all-girl college where they are chronically exposed to an abundant amount of
women in leadership roles (i.e., faculty and deans), were also more likely to implicitly
associate women with leadership than women who attended a co-ed college where there
is less exposure to female leaders (Dasgupta & Asgari, 2004, Study 2). In this study,
these attitude assessments took place at the start of freshman year and then again at the
start of sophomore year. Although the female participants’ attitudes toward women were
similar at the start of freshman year, they diverged at the start of sophomore year,
presumably because of the difference in exposure to female leaders. This research
demonstrates that both short–term experimental manipulations of and long-term, chronic
exposure to counterstereotypic exemplars influence attitudes toward women. As it
pertains to the current research, we speculate that both our short-term implicit gender
self-stereotype manipulation as well as more chronic exposure to such associations will
lead to enhanced self-stereotyping, self-esteem, and identification with traditionally
feminine careers.
References


presentation: effects of gender stereotype activation. *Group Processes & Intergroup Relations, 1*(1), 81-96.


De Cremer, D. (2001). Relations of self-esteem concerns, group identification, and self-


Dumont, M., Sarlet, M., & Dardenne, B. (2010). Be too kind to a woman, she'll feel incompetent: Benevolent sexism shifts self-construal and autobiographical memories toward incompetence. *Sex Roles, 2*(7-8), 545-553.


Prentice, D. A. & Carranza, E. (2002). What women should be, shouldn't be, are allowed to be, and don't have to be: The contents of prescriptive gender stereotypes. *Psychology of Women Quarterly, 26*(4), 269-281.


Thailand. *International Journal of Transgenderism, 6*(1).


Footnotes

1Power analyses were ran for each of the proposed studies to calculate the sample size needed.

2For interested readers, latency difference scores (between ME and NOT ME responses to negative female stereotypes) were significantly correlated with frequency difference scores (between ME and NOT ME responses to negative female stereotypes) in the baseline condition, $r(17) = -.74, p = .001$ but not in the experimental condition, $r(19) = -.24, p = .32$. Thus, in both conditions the more frequently participants indicated ME than NOT ME to negative female traits, the faster they indicated ME than NOT ME to negative female traits. However, this relationship was significant only in the control condition.

3Separate Cronbach’s reliabilities were run for the masculine and feminine gender stereotype word ratings to examine if these trait ratings correlate among each other ($\alpha$ range = 0.2-.5). However, because the sub-sample who completed this pre-test survey was relatively small, these alphas cannot be accurately interpreted (Bonett, 2002).

4Gender identification (administered during prescreening) was examined as a moderator in the lab (as opposed to a covariate) in studies 2-4. In all studies except oddly in Study 2 the interaction results were null. The significant Gender Identification by Condition interaction on Explicit Self-Esteem yielded a significant effect, $F(1,48) = 5.08$, $p = .03$. However, these results are not consistent with past theory or evidence so we are not going to interpret it here.

5For interested readers, there was a significant correlation between gender identification and self-esteem among men only, such that the more men strongly identify with their gender ingroup, the higher their self-esteem, $r_{men}(28) = .43, p = .02$. However, no such relationship exists among women, $r_{women}(31) = .11, p = .54$. Unexpectedly, non-significant correlations reveal that for both men and women, there is no relationship between gender identification and self-esteem, $r_{men}(19) = .02, p = .95$, $r_{women}(22) = .02, p = .95$.

6Note that the study we actually conducted for Study 5 differs from the study we had originally proposed. If our previous studies had worked out, we would have demonstrated that negative IGSS was detrimental to one’s self-image and this would warrant an “intervention study”. However, given inconsistencies in our data, we decided to administer a new manipulation paradigm instead in this final study. These changes were approved by my dissertation committee on February 9, 2014.
Figure 1. Effect of negative IGSS on Me/Not Me task (Study 1b). Higher numbers on the y-axis mean large difference score between the Me and Not Me latencies.
Figure 2. Effect of negative IGSS on classifying negative stereotypes as *me* versus *not me* (Study 1b). Higher numbers on the y-axis mean slower time in response.
Figure 3. Effect of negative IGSS on classifying negative non-stereotypes as me versus not me (Study 1b). Higher numbers on the y-axis mean slower time in response.
Figure 4. Effect of negative IGSS on classifying positive non-stereotypes as *me* versus *not me* (Study 1b). Higher numbers on the y-axis mean slower time in response.
Figure 5. Effect of negative IGSS on classifying neutral non-stereotypes as *me* versus *not me* (Study 1b). Higher numbers on the y-axis mean slower time in response.
Figure 6. Effect of negative IGSS on implicit self-esteem (Study 3). Higher SE-IAT $D$ numbers indicate higher implicit self-esteem on the IAT.
Figure 7. Gender differences in implicit career identification (Study 4b). Higher Career Identification IAT $D$ numbers indicate strong implicit identification with feminine careers on the IAT.
Figure 8. Gender differences in implicit career attitudes (Study 4b). Higher Career Attitudes IAT $D$ numbers indicate strong more positive attitudes toward feminine careers on the IAT.
Figure 9. Gender differences in explicit career identification (Study 4b). Higher numbers indicate strong explicit identification with feminine careers.
Figure 10. Gender differences in explicit career attitudes (Study 4b). Higher numbers indicate more positive attitudes toward feminine careers.
Figure 11. Effect of negative IGSS on implicit self-esteem (Study 5). Higher SE-IAT D numbers indicate higher implicit self-esteem on the IAT.
Figure 12. Effect of negative IGSS on implicit career identification (Study 5). Higher Career Identification IAT $D$ numbers indicate strong implicit identification with feminine careers on the IAT.
Table 1
Summary of Empirical Articles that Measure Gender Self-Stereotyping (GSS)

<table>
<thead>
<tr>
<th>Citation</th>
<th>Type of (GSS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asgari, Dasgupta, Cote (2010)</td>
<td>implicit</td>
</tr>
<tr>
<td>Cadinu &amp; Galdi (2012)</td>
<td>implicit</td>
</tr>
<tr>
<td>Gustafsson &amp; Bjorklund (2008)</td>
<td>implicit</td>
</tr>
<tr>
<td>Lorenzi-Cioldi (1991)</td>
<td>implicit</td>
</tr>
<tr>
<td>Lun, Sinclair, &amp; Cogburn (2009, Study 1)</td>
<td>implicit</td>
</tr>
<tr>
<td>McCall &amp; Dasgupta (2007)</td>
<td>implicit</td>
</tr>
<tr>
<td>Onorato &amp; Turner (2004)</td>
<td>implicit</td>
</tr>
<tr>
<td>Rudman &amp; Phelan (2010)</td>
<td>implicit</td>
</tr>
<tr>
<td>Rudman, Greenwald, McGhee (2001)</td>
<td>implicit</td>
</tr>
<tr>
<td>Sakata (1995)</td>
<td>implicit</td>
</tr>
<tr>
<td>Aldag &amp; Brief (1979)</td>
<td>explicit</td>
</tr>
<tr>
<td>Allgood, Lewinsohn, &amp; Hops (1990)</td>
<td>explicit</td>
</tr>
<tr>
<td>Barreto, Ellemers, Piebinga, &amp; Moya (2009)</td>
<td>explicit</td>
</tr>
<tr>
<td>Chiu, Hong, Lam, Fu, Tong, &amp; Lee (1998)</td>
<td>explicit</td>
</tr>
<tr>
<td>Cihangir, Barreto, &amp; Ellemers (2010)</td>
<td>explicit</td>
</tr>
<tr>
<td>Clark (2001)</td>
<td>explicit</td>
</tr>
<tr>
<td>Cohen &amp; Garcia (2005)</td>
<td>explicit</td>
</tr>
<tr>
<td>Coleman &amp; Hong (2008)</td>
<td>explicit</td>
</tr>
<tr>
<td>Coplin &amp; Williams (1978)</td>
<td>explicit</td>
</tr>
<tr>
<td>Cristall &amp; Dean (1976)</td>
<td>explicit</td>
</tr>
<tr>
<td>Davis, Williams, &amp; Best (1982)</td>
<td>explicit</td>
</tr>
<tr>
<td>Deutsch &amp; Gilbert (1978)</td>
<td>explicit</td>
</tr>
<tr>
<td>Donaghue &amp; Fallon (2003)</td>
<td>explicit</td>
</tr>
<tr>
<td>Downs &amp; Abshier (1982)</td>
<td>explicit</td>
</tr>
<tr>
<td>Elman, Press &amp; Rosencrantz (1970)</td>
<td>explicit</td>
</tr>
<tr>
<td>Endo (1984)</td>
<td>explicit</td>
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<tr>
<td>Gilbert, Waldroop, &amp; Deutsch (1981)</td>
<td>explicit</td>
</tr>
<tr>
<td>Guimond et al. (2007)</td>
<td>explicit</td>
</tr>
<tr>
<td>Guimond, Chatard, Martinot, Crisp, &amp; Redersdorff (2006)</td>
<td>explicit</td>
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<tr>
<td>Gupta (1992)</td>
<td>explicit</td>
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<tr>
<td>Hans &amp; Eisenberg (1985)</td>
<td>explicit</td>
</tr>
<tr>
<td>Harris, Perricone, &amp; Smith (1988)</td>
<td>explicit</td>
</tr>
<tr>
<td>Hogg &amp; Turner (1987)</td>
<td>explicit</td>
</tr>
<tr>
<td>James (1993)</td>
<td>explicit</td>
</tr>
<tr>
<td>Johnson &amp; McCoy (2000)</td>
<td>explicit</td>
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<tr>
<td>Kaschak &amp; Sharatt (1988)</td>
<td>explicit</td>
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Landrine, Klonoff, & Brown-Collins (1992)  explicit
Latrofa, Vaes, & Cadinu (2012)  explicit
Latrofa, Vaes, Cadinu, & Carnaghi (2010)  explicit
Latrofa, Vaes, Pastore, & Cadinu (2009)  explicit
Laurin, Kay, & Shepherd (2011)  explicit
Lauriola, Zelli, Calcaterra, Cherubini, & Spinelli (2004)  explicit
Lobel, Gewirtz, Pras, Shoesine-Rokach, & Ginton (1999)  explicit
Mackie (1980)  explicit
Matsui, Ikeda, & Ohnishi (1989)  explicit
McCrea, Wieber, & Myers (2012, Studies 3 & 6)  explicit
McLean & Kalin (1994, Study 2)  explicit
Miller, Lewy, & Peckham (1997)  explicit
Newman (1976)  explicit
Nicotera & Rancer (1994)  explicit
O'Leary & Depner (1975)  explicit
Oswald & Chapleau (2010)  explicit
Oswald & Lindstedt (2006)  explicit
Otten & Epstude (2006)  explicit
Pennell & Ogilvie (1995)  explicit
Ricciardelli, Connors, Willaïms, & Young (2001)  explicit
Ritter (2004)  explicit
Rosenkrantz, Vogel, Bee, Boverman, & Boverman (1968)  explicit
Ross, Anderson, & Wisocki (1982)  explicit
Schmitt & Wirth (2009)  explicit
Schmitt, Branscombe, Silva, Garcia, & Spears (2006, Study 1)  explicit
Sczesny (2003)  explicit
September, McCarrey, Baranowsky, Parent, & Schindler (2001)  explicit
Signorella (1992)  explicit
Silvern & Katz (1986)  explicit
Simmons & Turner (1976)  explicit
Sinclair & Lun (2006)  explicit
Sinclair, Hardin, & Lowery (2006, Study 4)  explicit
Sinclair, Huntsinger, Hardin, Skorinko (2005, Studies 1, 2, & 4)  explicit
Spence & Buckner (2000)  explicit
Spence & Hall (1996)  explicit
Stout, Dasgupta, Hunsinger & McManus (2011)  explicit
Swan & Wyer (1997)  explicit
Williams & Ricciardelli (2003)  explicit
Winter & Udomask (2002)  explicit
Table 2

Means and Standard Deviations for Valence and Gender Evaluation of Stimuli used in the Implicit Gender Self-Stereotyping Manipulation (Studies 1-5) and the Me/Not-Me Task (Study 1b)

<table>
<thead>
<tr>
<th>Stimulus</th>
<th>$M_{valence}$</th>
<th>$SD_{valence}$</th>
<th>$M_{gender}$</th>
<th>$SD_{gender}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative Female Stereotype Relevant</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>moody</td>
<td>2.65**</td>
<td>1.23</td>
<td>5.61**</td>
<td>1.23</td>
</tr>
<tr>
<td>materialistic</td>
<td>2.71**</td>
<td>1.43</td>
<td>5.15**</td>
<td>1.32</td>
</tr>
<tr>
<td>vulnerable</td>
<td>2.59**</td>
<td>1.13</td>
<td>5.00**</td>
<td>1.15</td>
</tr>
<tr>
<td>complaining</td>
<td>2.03**</td>
<td>0.94</td>
<td>5.47**</td>
<td>1.16</td>
</tr>
<tr>
<td>weak</td>
<td>2.15**</td>
<td>1.02</td>
<td>4.85**</td>
<td></td>
</tr>
<tr>
<td>Negative Female Stereotype Irrelevant</td>
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<td></td>
<td></td>
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<tr>
<td>racist</td>
<td>1.26**</td>
<td>0.71</td>
<td>3.85</td>
<td>0.89</td>
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<tr>
<td>gullible</td>
<td>2.85**</td>
<td>1.16</td>
<td>4.50†</td>
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<tr>
<td>worthless</td>
<td>1.21**</td>
<td>0.98</td>
<td>3.85</td>
<td>0.74</td>
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<tr>
<td>Neutral Female Stereotype Irrelevant</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>busy</td>
<td>4.03</td>
<td>0.97</td>
<td>3.91</td>
<td>1.44</td>
</tr>
<tr>
<td>unpredictable</td>
<td>3.94</td>
<td>1.15</td>
<td>3.58</td>
<td>1.61</td>
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<tr>
<td>old-fashioned</td>
<td>4.03</td>
<td>0.79</td>
<td>4.15</td>
<td>1.46</td>
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<tr>
<td>Positive Female Stereotype Irrelevant</td>
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<td></td>
</tr>
<tr>
<td>artistic</td>
<td>5.88**</td>
<td>1.04</td>
<td>4.21</td>
<td>1.29</td>
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<tr>
<td>modern</td>
<td>5.18**</td>
<td>0.99</td>
<td>4.15</td>
<td>1.02</td>
</tr>
<tr>
<td>calm</td>
<td>5.71**</td>
<td>1.03</td>
<td>3.94</td>
<td>1.01</td>
</tr>
</tbody>
</table>

*Note:* **p < .01, †p = .06.
Table 3

Means and Standard Deviations for Valence and Gender Evaluations of Negative Male Stereotypes Only used in the Manipulation Check of Negative IGSS (Study 2)

<table>
<thead>
<tr>
<th>Stimulus</th>
<th>$M_{\text{valence}}$</th>
<th>$SD_{\text{valence}}$</th>
<th>$M_{\text{gender}}$</th>
<th>$SD_{\text{gender}}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>mediocre</td>
<td>2.79**</td>
<td>1.04</td>
<td>3.62**</td>
<td>0.60</td>
</tr>
<tr>
<td>lower-class</td>
<td>2.62**</td>
<td>1.37</td>
<td>3.68*</td>
<td>0.59</td>
</tr>
<tr>
<td>violent</td>
<td>1.62**</td>
<td>0.89</td>
<td>2.26**</td>
<td>0.90</td>
</tr>
<tr>
<td>poor</td>
<td>2.15**</td>
<td>1.13</td>
<td>3.68*</td>
<td>0.77</td>
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<tr>
<td>dangerous</td>
<td>2.00**</td>
<td>1.18</td>
<td>2.59**</td>
<td>1.23</td>
</tr>
</tbody>
</table>

Note: **p < .01, *p < .05.
Table 4

*Means and Standard Deviations for Gender, Status, and Valence Evaluations of Stimuli used in Implicit Career Identification and Career Attitude Measures (Study 4b)*

<table>
<thead>
<tr>
<th>Stimulus</th>
<th>$M_{gender}$</th>
<th>$SD_{gender}$</th>
<th>$M_{status}$</th>
<th>$SD_{status}$</th>
<th>$M_{valence}$</th>
<th>$SD_{valence}$</th>
</tr>
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<tbody>
<tr>
<td><strong>Masculine Occupations</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>pilot</td>
<td>2.00**</td>
<td>1.29</td>
<td>4.54**</td>
<td>1.48</td>
<td>2.11**</td>
<td>1.13</td>
</tr>
<tr>
<td>surgeon</td>
<td>3.35†</td>
<td>1.26</td>
<td>5.85**</td>
<td>0.36</td>
<td>2.33**</td>
<td>1.53</td>
</tr>
<tr>
<td>police officer</td>
<td>2.96**</td>
<td>1.08</td>
<td>4.14**</td>
<td>1.08</td>
<td>1.89**</td>
<td>1.68</td>
</tr>
<tr>
<td>ship captain</td>
<td>1.88**</td>
<td>1.21</td>
<td>3.70**</td>
<td>1.54</td>
<td>.89*</td>
<td>1.78</td>
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<tr>
<td>masculine occupation composite</td>
<td>2.55**</td>
<td>0.87</td>
<td>4.55**</td>
<td>0.71</td>
<td>1.81**</td>
<td>1.30</td>
</tr>
<tr>
<td><strong>Feminine Occupations</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>elementary teacher</td>
<td>5.27**</td>
<td>1.28</td>
<td>3.64**</td>
<td>0.87</td>
<td>1.94**</td>
<td>1.47</td>
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<td>nurse</td>
<td>5.44**</td>
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<td>4.79**</td>
<td>0.83</td>
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<td>5.19**</td>
<td>1.30</td>
<td>3.68**</td>
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<td>1.83**</td>
<td>1.50</td>
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<td>speech therapist</td>
<td>5.27**</td>
<td>1.04</td>
<td>4.32**</td>
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<td>1.78**</td>
<td>1.78</td>
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<td>5.29**</td>
<td>0.81</td>
<td>4.11**</td>
<td>0.55</td>
<td>1.81**</td>
<td>1.17</td>
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</tbody>
</table>

*Note: **p < .001, *p < .05. $N_{gender evaluations} = 26$, $N_{status evaluations} = 18$, $N_{valence evaluations} = 28.$*
Table 5

Correlations between Implicit and Explicit Career Identification and Career Attitudes as a Function of Gender (Study 4b)

<table>
<thead>
<tr>
<th>Measure</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<tbody>
<tr>
<td>1. Implicit Career Identification</td>
<td>.71**</td>
<td>0.16</td>
<td>-0.19</td>
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</tr>
<tr>
<td>2. Implicit Career Attitudes</td>
<td>0.37</td>
<td>0</td>
<td>-0.33</td>
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</tr>
<tr>
<td>3. Explicit Career Identification</td>
<td>0.15</td>
<td>0.11</td>
<td>.42*</td>
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<tr>
<td>4. Explicit Career Attitudes</td>
<td>.55**</td>
<td>0.36</td>
<td>0.09</td>
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</tbody>
</table>

*Note: Correlations for women are presented above the diagonal while correlations for men are presented below the diagonal. *p < .05, **p < .01.*
### Appendix A

<table>
<thead>
<tr>
<th>Positive Relevant</th>
<th>Negative Relevant</th>
<th>Positive Irrelevant</th>
<th>Negative Irrelevant</th>
<th>Neutral Irrelevant</th>
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<tbody>
<tr>
<td>affectionate</td>
<td>shy</td>
<td>religious</td>
<td>gullible</td>
<td>normal</td>
</tr>
<tr>
<td>cheerful</td>
<td>passive</td>
<td>athletic</td>
<td>poor</td>
<td>neutral</td>
</tr>
<tr>
<td>compassionate</td>
<td>submissive</td>
<td>tradition-loving</td>
<td>lower-class</td>
<td>ordinary</td>
</tr>
<tr>
<td>feminine</td>
<td>*complaining</td>
<td>rhetorical</td>
<td>violent</td>
<td>civilian</td>
</tr>
<tr>
<td>gentle</td>
<td>dependent</td>
<td>successful</td>
<td>criminal</td>
<td>formal</td>
</tr>
<tr>
<td>sensitive</td>
<td>*moody</td>
<td>rich</td>
<td>stupid</td>
<td>tall</td>
</tr>
<tr>
<td>sympathetic</td>
<td>*weak</td>
<td>wealthy</td>
<td>dangerous</td>
<td>quick</td>
</tr>
<tr>
<td>tender</td>
<td>feeble</td>
<td>educated</td>
<td>loud</td>
<td>approachable</td>
</tr>
<tr>
<td>understanding</td>
<td>frail</td>
<td>preppy</td>
<td>uneducated</td>
<td>alright</td>
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<tr>
<td>warm</td>
<td>delicate</td>
<td>funny</td>
<td>racist</td>
<td>calm</td>
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<tr>
<td>caring</td>
<td>*vulnerable</td>
<td>strong</td>
<td>horrible</td>
<td>reliable</td>
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<tr>
<td>nurturing</td>
<td>*materialistic</td>
<td>theatrical</td>
<td>repulsive</td>
<td>sincere</td>
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<td>petite</td>
<td>weakness</td>
<td>magnificent</td>
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<td>timid</td>
<td>amazing</td>
<td>disgusting</td>
<td>tactful</td>
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<td>manipulative</td>
<td>fabulous</td>
<td>sickening</td>
<td>truthful</td>
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<td>enjoyable</td>
<td>worthless</td>
<td>unpredictable</td>
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<td>frail</td>
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<td>awful</td>
<td>unsystematic</td>
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<td>durable</td>
<td>dreadful</td>
<td>iron</td>
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<td>distinct</td>
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<td></td>
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<tr>
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<td>adaptable</td>
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<td></td>
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<td>conventional</td>
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# Appendix B

**Occupation Stimuli Pre-tested in Study 4a**

<table>
<thead>
<tr>
<th>Occupation</th>
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<th>Occupation</th>
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<tbody>
<tr>
<td>Housekeeper</td>
<td>Real Estate Agent</td>
<td>Chemical Technician</td>
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<tr>
<td>Day Care Worker</td>
<td>Dental Hygienist</td>
<td>Architect</td>
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<tr>
<td>Preschool Teacher</td>
<td>Therapist</td>
<td>Forester</td>
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<tr>
<td>Seamstress</td>
<td>Retail Buyer</td>
<td>Street Vendor</td>
</tr>
<tr>
<td>Flight Attendant</td>
<td>Editor</td>
<td>Engineer</td>
</tr>
<tr>
<td>Receptionist</td>
<td>News Reporter</td>
<td>Air Traffic Controller</td>
</tr>
<tr>
<td>Librarian</td>
<td>Toll Operator</td>
<td>Farmer</td>
</tr>
<tr>
<td>Secretary</td>
<td>Dry Cleaner</td>
<td>Machine Operator</td>
</tr>
<tr>
<td>Hotel Housekeeper</td>
<td>Hotel Clerk</td>
<td>Security Guard</td>
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<tr>
<td>Hairstylist</td>
<td>Product Promoter</td>
<td>Car Salesperson</td>
</tr>
<tr>
<td>Nurse</td>
<td>Pharmacist</td>
<td>Stone Mason</td>
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<tr>
<td>Elementary Teacher</td>
<td>Orderly</td>
<td>Butcher</td>
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<tr>
<td>Speech Therapist</td>
<td>Lawyer</td>
<td>Pilot</td>
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<tr>
<td>Fashion Designer</td>
<td>Professor</td>
<td>Electrician</td>
</tr>
<tr>
<td>Social Worker</td>
<td>Doctor</td>
<td>Pest Control Worker</td>
</tr>
<tr>
<td>Apparel Salesperson</td>
<td>Athlete</td>
<td>Maintenance Worker</td>
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<tr>
<td>Massage Therapist</td>
<td>Dish Washer</td>
<td>Carpenter</td>
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<tr>
<td>Human Resources Manager</td>
<td>Research Scientist</td>
<td>Roofer</td>
</tr>
<tr>
<td></td>
<td>Information Security</td>
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</tr>
<tr>
<td>Veterinary Assistant</td>
<td>Analyst</td>
<td>Ship Captain</td>
</tr>
<tr>
<td>Dietician</td>
<td>Dentist</td>
<td>Landscaper</td>
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<tr>
<td>Sales Manager</td>
<td>Radio Broadcaster</td>
<td>Taxi Driver</td>
</tr>
<tr>
<td>Translator</td>
<td>Bus Driver</td>
<td>Sailor</td>
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<tr>
<td>Novelist</td>
<td>Accountant</td>
<td>Fire Fighter</td>
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<tr>
<td>Court Reporter</td>
<td>Surgeon</td>
<td>Mover</td>
</tr>
<tr>
<td>Dental Technician</td>
<td>Cost Estimator</td>
<td>Mechanic</td>
</tr>
<tr>
<td>Bank Clerk</td>
<td>Physicist</td>
<td>Plumber</td>
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<tr>
<td>Psychologist</td>
<td>Police Officer</td>
<td>Construction Worker</td>
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<tr>
<td>Computer Programmer</td>
<td>Economist</td>
<td>Garbage Collector</td>
</tr>
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### EDUCATION

**Ph.D.**  **Rutgers, The State University of New Jersey, Newark, May 2014**  
Area: Social Psychology  
Dissertation: *The effect of experimentally manipulated implicit negative gender self-stereotyping on women’s implicit self-esteem and implicit career identification and attitudes*  
Committee: Luis M. Rivera (advisor), Elizabeth Tricomi, Bonita M. Veysey, and Kent Harber  

**Summer Institute for Social Psychology and Personality (SISPP), July 2013**  
Location: University of California, Davis  
Area: Automaticity and Control  

**M.A.**  **Rutgers, The State University of New Jersey, Newark, January 2013**  
Area: Social Psychology  
Advisor: Luis M. Rivera  

**M.A.**  **California State University, San Bernardino, June 2009**  
Area: General Experimental Psychology  
Thesis: *The motivation to resolve discrepancies between implicit and explicit self esteem*  
Committee: Luis M. Rivera (chair), Kristy Dean, and Janet Kottke  

**B.A.**  **University of California, Riverside, March, 2007**  
Area: Psychology  
Research Assistant: Dr. Veronica Benet-Martinez’ Biculturalism Laboratory, 2006-2007  
Research Assistant: Dr. Lawrence Rosenblum’s Audio Perception Laboratory, 2005-2006
SUMMARY OF INTERESTS

<table>
<thead>
<tr>
<th>Research Specializations</th>
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<tr>
<td>Implicit Social Cognition</td>
<td>Statistics</td>
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<td>Self-Esteem</td>
<td>Intergroup Relations</td>
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<td>Gender Issues</td>
<td>Psychology of Women</td>
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<td>Stereotypes &amp; Prejudice</td>
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<td>Self and Identity</td>
<td>Human Sexual Behavior</td>
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<td>Mental and Physical Health</td>
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</table>

GRANTS, AWARDS, AND HONORS

2013  Dissertation Fellowship, Graduate School, Rutgers University ($22,980).
2013  Publishing Collaboration Award, Graduate School, Rutgers University. Status: Funded ($500).
2013  Dissertation Research Funding Award, Department of Psychology, Rutgers University. Status: Funded ($1,000).
2013  Rutgers Graduate Student Government Association (GSGA) Student Travel Award. Status: Funded ($300).
2012  Lehrman Fellowship, Department of Psychology, Rutgers University ($43,600).
2012  Rutgers Graduate Student Government Association (GSGA) Student Travel Award. Status: Funded ($150).
2011  Graduate Student Teaching Assistantship, Department of Psychology, Rutgers University ($45,600).
2010  Lehrman Fellowship, Department of Psychology, Rutgers University ($39,600).
2009  CSU, San Bernardino, College of Social and Behavioral Sciences Outstanding Graduate Student Award.
2008  CSU, San Bernardino, Associated Students Incorporated Student Research Award. Status: Funded ($1,000).
2008  CSU, San Bernardino, Associated Students Incorporated Student Travel Award. Status: Funded ($700).
**PUBLICATIONS & MANUSCRIPTS IN PREPARATION**


**RESEARCH IN PROGRESS**


**Laws, V. L. & Rivera, L. M.** Gender, status, and valence evaluations of multiple contemporary occupations.


CONFERENCES PRESENTATIONS & POSTERS


*served as a co-mentor

TEACHING EXPERIENCE

Courses Taught at Rutgers University
PSYC 301 Statistics for the Cognitive and Behavioral Sciences, Summer 2011/2012/2013
PSYC 335 Social Psychology, Fall 2011 (co-instructor with Dr. Jamie Gorman)

Teaching Assistant at Rutgers University
PSYC 301 Statistics for the Cognitive and Behavioral Sciences, Fall 2011 & Spring 2012, Dr. Ellen Halpern

Teaching Assistant at California State University, San Bernardino
PSYC 301 Parenting and Family Relations, Fall 2008, Spring 2009, Dr. Kelly Campbell
SSCI 316 Race and Racism, Fall 2008 & Winter 2009, Dr. Kelly Campbell
PSYC 385 Personality Psychology, Winter 2009, Dr. Kelly Campbell
PSYC 382 Social Psychology, Fall 2007 & Spring 2008, Dr. Luis M. Rivera
Invited Lectures


Laws, V. L. (2013, September). What are the social categorization processes underlying stereotyping, prejudice, & discrimination? Invited presentation to PSYC 409, Special Problems in Psychology: Stereotyping, Prejudice, & Discrimination, Dr. Luis M. Rivera, Rutgers University, Newark.


Teaching Training

PSYC 630, Teaching of Psychology, CSU San Bernardino

This course provided prospective instructors with knowledge of teaching approaches and support systems available at the university. Topics covered included: syllabus design, teaching and learning styles, test construction, ethics and values in teaching, dispute resolution, and mentoring students.

Substitute Teaching, Grades K-12, 10/2009-6/2010

Riverside Unified School District, Corona Unified School District, Jurupa Unified School District
PROFESSIONAL SERVICE

Departmental Committees
April 2013-present  Graduate Student Representative, Department of Psychology & Graduate Student Government Association (GSGA), Rutgers University
Fall 2011  Graduate Student Representative, Core Course Curriculum Assessment Sub-Committee, Department of Psychology, Rutgers University
2008-2009  Western Psychological Association (WPA) Graduate Student Representative, Department of Psychology, California State University, San Bernardino

Professional and Community Activities
3/2013-present  Campus Adviser, Office of Student Conduct, Rutgers University
12/2012  Peer Reviewer, Society for Personality and Social Psychology (SPSP) Graduate Student Council, Student Poster Award
12/2011  Peer Reviewer, Society for Personality and Social Psychology (SPSP) Graduate Student Council, Student Poster Award
2008-2009  Member & President, General Experimental Psychology Club, California State University, San Bernardino
12/2008  Peer Reviewer, Society for Personality and Social Psychology (SPSP) Graduate Student Council, Outstanding Research Award
2006-2007  Treasurer, Psi Chi, National Honor Society, UC Riverside
2005-2006  Historian, Alpha Lambda Delta National Honor Society, UC Riverside
Spring 2006  Student Mentor, UCR Internship, North High School Wellness Center, Riverside, CA
2004-2005  Certified Rape Crisis Hotline Counselor, Riverside, CA

EDITORIAL EXPERIENCE

Ad-Hoc Reviewer for Professional Journals
  Journal of Social Issues

PROFESSIONAL AFFILIATIONS

Society for Personality and Social Psychology
Society for the Psychological Study of Social Issues
American Society of Criminology
American Psychological Association
Psychology of Women APA Division
Association for Psychological Science
Eastern Psychological Association
New England Psychological Association
Western Psychological Association (2007-2009)

TECHNICAL SKILLS

Research design and analysis: Inquisit, MediaLab, DirectRT, SPSS, SONA Systems

LIST OF REFEREES

Luis M. Rivera, Ph.D.
Assistant Professor
Department of Psychology
Rutgers, the State University of New Jersey
101 Warren Street
Smith Hall Room 327
Newark, New Jersey 07102
(973) 353-5995
luis@psychology.rutgers.edu

Kent D. Harber, Ph.D.
Associate Professor
Department of Psychology
Rutgers University at Newark
101 Warren Street, Smith Hall
Newark, NJ 07102
(973) 353-3955
kharber@psychology.rutgers.edu

Elizabeth Tricomi, Ph.D.
Assistant Professor
Department of Psychology
Rutgers University, Newark
353 Smith Hall, 101 Warren Street
Newark, NJ 07102
(973) 353-5440 x3956
etricomi@psychology.rutgers.edu

Bonita M. Veysey, Ph.D.
Professor
School of Criminal Justice
Rutgers, The State University of New Jersey
123 Washington Street
Newark, New Jersey 07102
(973) 353-1929
veysey@andromeda.rutgers.edu