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

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

Copyright page:

© 2014

Valerie Leigh Laws

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).

Table of Contents

List of Tables

List of Figures

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 at 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 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.[1] 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 ($M_{experimental\ transformed} = -.15$, $SD_{experimental\ transformed} = .28$; $M_{experimental\ raw} = 228.26$, $SD_{experimental\ raw} = 352.05$) responded faster to characterize negative female stereotypes as "me" than "not me" compared to those in the control condition ($M_{control\ transformed} = .04$, $SD_{control\ transformed} = .15$; $M_{control\ raw} = -80.85$, $SD_{control\ raw} = 563.12$). 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, χ^2s > 15.75, ps

< .001, while poor (83%), dangerous (77%), lower-class (72%), violent (93%), and

mediocre (70%) was relatively associated with men, χ^2s > 11.84, ps < .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 (α = .77).

Results

ANOVAs 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.[3] The main effect for gender was significant, such that women exhibited stronger negative IGSS than men (IAT D_{women} = .36, SD_{women} = .41; IAT D_{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).[4] 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 ($\alpha = .87$).

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 ($\alpha = .86$). 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 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, ($M_{control} = 3.77$, $SD_{control} = .76$ vs $M_{experimental} = 3.68$, $SD_{experimental} = .60$), $t(55) = .45$, $p = .65$. 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.

      The pre-tested 84 occupations were selected from perusing several empirical papers and the United Sates Bureau of Labor Statistics website (Bureau of Labor Statistics, 2013; Glick 1995, Matsui et al 1989, Cejka & Eagly 1999, Rudman & Phelan 2010; see Appendix B for full list of occupational stimuli).

      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; $\alpha = .68$) 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; $\alpha = .61$). 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 ($M_{control} = .73$, $SD_{control} = .36$ vs $M_{experimental}$,

$= .69$, $SD_{experimental} = .44$), $t(52) = .39$, $p = .70$, explicit career attitudes ($M_{control} = 1.08$,

$SD_{control} = .97$ vs $M_{experimental} = .86$, $SD_{experimental} = 1.09$), $t(52) = .77$, $p = .44$, 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 identifcation.[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 (XXXXXXXXX) 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 "XXXXXXXXX" 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 ($M_{self\text{-}stereotyping}$ = .74, $SD_{self\text{-}stereotyping}$ = .22) than women in the combined

stereotype-only and no stereotype control conditions ($M_{no\ stereotype\ control}$ = .47, $SD_{no\ stereotype}$

$_{control}$ = .40; $M_{stereotype\text{-}only}$ = .55, $SD_{stereotype\text{-}only}$ = .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 ($M_{self\text{-}stereotyping}$ = 4.22, $SD_{self\text{-}stereotyping}$ = .65; $M_{no\ stereotype\ control}$ = 4.02, SD_{no}

$_{stereotype\ control}$ = .81; $M_{stereotype\text{-}only}$ = 3.84, $SD_{stereotype\text{-}only}$ = .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 ($M_{self\text{-}}$

$_{stereotyping}$ = .66, $SD_{self\text{-}stereotyping}$ = .29) compared to the combined stereotype-only and no

stereotype control conditions ($M_{stereotype\text{-}only}$ = .43, $SD_{stereotype\text{-}only}$ = .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, $r_{\text{self-stereotyping}} = .18$, $r_{\text{stereotype-only}}$

$= .20$, $r_{\text{no stereotype control}} = .12$, $p\text{s} = ns$. 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, freeloading, 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

Abrams, D. E., & Hogg, M. A. (1990). *Social identity theory: Constructive and critical advances.* Springer-Verlag Publishing.

Abrams, D., & Hogg, M. A. (2010). Social identity and self-categorization. *The SAGE handbook of prejudice, stereotyping and discrimination*, 179-193.

Acker, J. (1990). Hierarchies, jobs, bodies: A theory of gendered organizations. *Gender & Society, 4*(2), 139–158.

Addison, J. T., Ozturk, O.D., & Wang, S. (2014). Job promotion in midcareer: gender, recession, and "crowding". *U.S. Bureau of Labor Statistics, Monthly Labor Review*. Retrieved on March 11, 2014 from http://www.bls.gov/opub/mlr/2014/article/pdf/job-promotion-in-midcareer.pdf.

Ahmed, S. & Rivera, L. M. (2013). Self-stereotyping leads to detrimental food attitudes. Undergraduate honors thesis. Rutgers, the State University of New Jersey, Newark.

Aldag, R., & Brief, A. P. (1979). Some correlates of women's self-image and stereotypes of femininity. *Sex Roles, 5*(3), 319-328.

Allgood-Merten, B., Lewinsohn, P., & Hops, H. (1990). Sex differences and adolescent depression. *Journal of Abnormal Psychology*, *99*(1), 55-63.

Ambady, N., Paik, S. K., Steele, J., Owen-Smith, A., & Mitchell, J. P. (2004). Deflecting negative self-relevant stereotype activation: The effects of individuation. *Journal of Experimental Social Psychology, 40*(3), 401-408.

Asgari, S., Dasgupta, N., Cote, N. G. (2010). When does contact with successful ingroup members change self-stereotypes? A longitudinal study comparing the effect of quantity versus quality of contact with successful individuals. *Social Psychology, 41*(3), 203-211.

Bachman, J. G., & Malley, P. M. O. (1977). Self-Esteem in young men: A longitudinal analysis of the impact of educational and occupational attainment. *Journal of Personality and Social Psychology*, *35*(6), 365-380.

Bargad, A., & Hyde, J. S. (1991). Women's studies: A study of feminist identity development in women. *Psychology of Women Quarterly*, *15*(2), 181-201.

Barreto, M., Ellemers, N., Piebinga, L., & Moya, M. (2010). How nice of us and how dumb of me: The effect of exposure to benevolent sexism on women's task and relational self-descriptions. *Sex Roles, 62*(7-8), 532-544.

Becker, J. C. & Wagner, U. (2009). Doing gender differently-The interplay of strength of gender identification and content of gender identity in predicting women's endorsement of sexist beliefs. *European Journal of Social Psychology, 39*(4), 487-508.

Bem, S. L. (1974). The measurement of psychological androgyny. *Journal of Clinical and Consulting Psychology, 71*, 230-244.

Benokraitis, N. V., & Feagin, J. R. (1995). *Modern Sexism: Blatant, subtle, and covert discrimination.* Englewood-Cliffs, NJ: Prentice-Hall.

Biernat, M., Vescio, T. K., & Green, M. L. (1996). Selective self-stereotyping. *Journal of Personality and Social Psychology*, *71*(6), 1194-209.

Bonett, D. G. (2002). Sample size requirements for testing and estimating coefficient alpha. *Journal of Educational and Behavioral Statistics, 27*(4), 335-340.

Buchmann, M. & Kriesi, I. (2009). Escaping the gender trap: Young women's transition into nontraditional occupations. In Ingrid Schoon and Rainer Silbereisen (Eds.), *Transitions from school to work: Globalization, individualization, and patterns of diversity* (pp. 193-215). New York, NY, US: Cambridge University Press.

Bureau of Labor Statistics. (2013). Retrieved March 1, 2014 from www.bls.gov/cps/cpsaat11.pdf.

Cadinu, M. & Galdi, S. (2012). Gender differences in implicit gender self-categorization lead to stronger gender self-stereotyping by women than by men. European Journal of Social Psychology, 42, 546–551.

Campbell, D. P., & Hansen, J. I. C. (1981). *Manual for the SVIB-SCII: Strong-Campbell interest inventory, form T325 of the Strong vocational interest blank* (Vol. 325). Stanford University Press.

Cash, T. F. & Kilcullen, R. N. (1985). The aye of the beholder: Susceptibility to sexism and beautyism in the evaluation of managerial applicants. *Journal of Applied Social Psychology, 15*(7), 591-605.

Ceci, S. J., Williams, W. M., & Barnett, S. M. (2009). Women's underrepresentation in science: Sociocultural and biological considerations. *Psychological Bulletin, 135*, 218–261.

Cejka, M. & Eagly, A. H. (1999). Gender-stereotypic images of occupations correspond to the sex segregation of employment. *Personality and Social Psychology Bulletin, 25*(4), 413-423.

Chiu, C., Hong, Y., Lam, I. C., Tong, J. Y., & Lee, V. S. (1998). Stereotyping and self-

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

Cihangir, S., Barreto, M., & Ellemers, N. (2010). The dark side of ambiguous discrimination: How state self-esteem moderates emotional and behavioural responses to ambiguous and unambiguous discrimination. *British Journal of Social Psychology, 49*(1), 155-174.

Clark, M. L. (1985). Social stereotypes and self-concept in black and white college students. *The Journal of Social Psychology, 125*(6), 753-760.

Cohen, G. L., & Garcia, J. (2005). 'I am us': Negative stereotypes as collective threats. *Journal of Personality and Social Psychology, 89*(4), 566-582.

Coleman, J., & Hong, Y. (2008). Beyond nature and nurture: The influence of lay gender theories on self-stereotyping. *Self and Identity, 7*(1), 34-53.

Cooley, C.H. (1902). *Human Nature and the Social Order.*

Coplin, J. W., & Williams, J. E. (1978). Women law students' descriptions of self and the ideal lawyer. *Psychology of Women Quarterly, 2*(4), 323-333.

Cristall, L., & Dean, R. S. (1976). Relationship of sex-role stereotypes and self-actualization. *Psychological Reports, 39*(3), 842.

Croizet, C-C., Désert, M., Dutrévis, M., & Leyens, J-P. (2000). Stereotype threat, social class, gender, and academic under-achievement: When our reputation catches up to use and takes over. *Social Psychology of Education: An International Journal, 4*(3-4), 295-310.

Dasgupta, N. (2011). Ingroup experts and peers as social vaccines who inoculate the self-concept: The stereotype inoculation model. *Psychological Inquiry*, *22*(4), 231-246.

Dasgupta, N., & Asgari, S. (2004). Seeing is believing: Exposure to counterstereotypic women leaders and its effect on the malleability of automatic gender stereotyping. *Journal of Experimental Social Psychology*, *40*(5), 642-658.

Davis, S. W., Williams, J. E., & Best, D. L. (1982). Sex-trait stereotypes in the self- and peer descriptions of third grade children. *Sex Roles*, *8*(3), 315-331.

Devine, P. G. (1989). Stereotypes and prejudice : Their automatic and controlled components. *Journal of Personality and Social Psychology*, *56*(1), 5-18.

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

stereotyping to in-group favoritism. *Journal of Social Psychology, 141*(3), 389-400.

Deutsch, C., & Gilbert, L. A. (1976). Sex role stereotypes: Effect on perceptions of self and others and on personal adjustment. *Journal of Counseling Psychology, 23*(4), 373-379.

Deutsch, R. & Strack, F. (2010). Building blocks of social behavior. In B. Gawronski, B. K. Payne (Eds.), *Handbook of implicit social cognition: Measurement, theory, and applications* (pp.62-79). New York: Guilford Press.

Donaghue, N., & Fallon, B. J. (2003). Gender-role self-stereotyping and the relationship between equity and satisfaction in close relationships. *Sex Roles*, *48*(5-6), 217-230.

Downs, A. C., & Abshier, G. R. (1982). Conceptions of physical appearance among young adolescents: The interrelationships among self-judged appearance, attractiveness stereotyping, and sex-typed characteristics. *Journal of Early Adolescence, 2*(3), 255-265.

Duff, K. (2012). *Think! Social Psycholoy*. Boston: Pearson Education. Inc.

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.

Duncan, O. D. (1961). A socioeconomic index for all occupations.

Eagly, A. H. (1997). Sex differences in social behavior: Comparing social role theory and evolutionary psychology. *American Psychologist, 52*(12), 1380-1383.

Eagly, A. H. & Karau, S. J. (2002). Role congruity theory of prejudice toward female leaders. *Psychological Review, 109*(3), 573-598.

Eagly, A. H. & Wood, W. (2012). Social role theory. In P. V. Lange, A. W. Kruglanski, and T. E. Higgins (Eds.), *Handbook of theories of social psychology*, (pp. 458-476). Thousand Oaks, CA: Sage Publications Ltd.

Elman, J., Press, A., & Rosenkrantz, P. (1970). Sex roles and self-concepts: Real and ideal. *Proceedings of the Annual Convention of the American Psychological Association*, *5*(1), 455-456.

Endo, Y. (1984). The effects of self-schemata and sex stereotypes on the perception of others. *Psychologia: An International Journal of Psychology in the Orient, 27*(4), 203-210.

Fazio, R. H., & Towles-Schwen, T. (1999). The MODE model of attitude-behavior processes. In S. Chaiken & Y. Trope (Eds.), *Dual-process theories in social psychology* (pp. 97–116). New York: Guilford Press.

Festinger, L. (1957). *A theory of cognitive dissonance*. Evanston, IL: Row, Peterson, & Co.

Festinger, L. & Carlsmith, J. M. (1959). Cognitive consequences of forced compliance. *Journal of Abnormal and Social Psychology, 58*, 203-210.

Franzoi, S. (1995). The body-as-object versus the body-as-process: Gender differences and gender considerations. *Sex Roles, 33,* 417-437.

Fredrickson, B. L. & Roberts, T. (1997). Objedication theory: Toward understanding women' lived pexeriences and mental health risks. *Psychology of Women Quarterly, 21,* 173-206.

Gadassi, R. & Gati, I. (2009). The effect of gender stereotypes on explicit and implicit career preferences. *The Counseling Psychologist, 37*(6), 902-922.

Galley, J. (2014). Millennials and the pay gap. *U.S. Bureau of Labor Statistics, Monthly Labor Review*. Retrieved on March 11, 2014 from http://www.bls.gov/opub/mlr/2014/beyond-bls/pdf/millennials-and-the-pay-gap.pdf.

Gawronski, B. (2012). Back to the future of dissonance theory: Cognitive consistency as a core motive. *Social Cognition, 30*(6), 652-668.

Gilbert, L. A., Waldroop, J. A., & Deutsch, C. J. (1981). Masculine and feminine stereotypes and adjustment: A reanalysis. *Psychology of Women Quarterly*, *5*(5), 790-794.

Glick, P. & Fiske, S. T. (1996). The ambivalent sexism inventory: Differentiating hostile and benevolent sexism. *Journal of Personality and Social Psychology, 70*(3), 491-512.

Glick, P. & Fiske, S. T. (1997). Hostile and benevolent sexism: Measuring ambivalent sexist attitudes toward women. *Psychology of Women Quarterly, 21*(1), 119-135.

Glick, P. & Fiske, S. T. (2001). An ambivalent alliance: Hostile and benevolent sexism as complementary justifications for gender inequality. *American Psychologist, 56*(2), 109-118.

Glick, P. & Fiske, S. T. (2011). Ambivalent sexism revisited. *Psychology of Women Quarterly, 35*(3), 530-535.

Greenwald, A. G., & Banaji, M. R. (1995). Implicit social cognition: attitudes, self-esteem, and stereotypes. *Psychological Review*, *102*(1), 4-27.

Greenwald, A. G., Banaji, M. R., Rudman, L. A., Farnham, S. D., Nosek, B. A., & Mellott, D. S. (2002). A unified theory of implicit attitudes, stereotypes, self-esteem, and self-concept. *Psychological Review, 109*(1), 3-25.

Greenwald, A. G. & Farnham, S. D. (2000). Using the implicit association test to measure self-esteem and self-concept. *Journal of Personality and Social Psychology, 79*(6), 1022-1038.

Greenwald, A. G., McGhee, D. E., & Schwartz, J. K. L. (1998). Measuring individual differences in implicit cognition: the implicit association test. *Journal of Personality and Social Psychology, 74*, 1464-1480.

Greenwald, A. G. Nosek, B. A. & Banaji, M. R. (2003). Understanding and using the Implicit Association Test: An improved scoring algorithm. *Journal of Personality and Social Psychology, 85,* 197-216.

Greenwald, A. G., Poehlman, T. A., Uhlmann, E. L., & Banaji, M. R. (2009). Understanding and using the Implicit Association Test: III. Meta-analysis of predictive validity. *Journal of Personality and Social Psychology, 97*(1), 17-41.

Guimond, S., Chatard, A., Martinot, D., Crisp, R., Redersdorff, S. (2006). Social comparison, self-stereotyping, and gender differences in self-construals. *Journal of Personality and Social Psychology, 90*(2), 221-242.

Guimond, S., Branscombe, N. R., Brunot, S., Buunk, A. P., Chatard, A., Desert, M., Garcia, D. M., Haque, S., Martinot, D., & Yzerbyt, V.(2007). Culture, gender, and the self: Variations and impact of social comparison processes. *Journal of Personality and Social Psychology, 92*(6), 1118-1134.

Gupta, A. (1991). Gender stereotypes and self-concepts in college students. *Psychological Studies*, *36*(3), 180-186.

Gustafsson, U., & Bjorklund, F. (2008). Women self-stereotype with feminine stereotypical traits under stereotype threat. *Current Research in Social Psychology*, *13*(18), 219-231.

Haller, J. & Rivera, L. M. (2008). The harm in being a man: Gender self-stereotyping moderates the relation between the motivation to achieve and performance. Master's thesis. California State University, San Bernardino.

Hans, V. P., & Eisenberg, N. (1985). The effects of sex-role attitudes and group composition on men and women in groups. *Sex Roles*, *12*(5-6), 477-490.

Harris, C. T., Perricone, P. J., & Smith, M. S. (1968). The artist and androgyny: A study of gender identity in visual arts. *Empirical Studies of the Arts, 6*(1), 67-78.

Hirschy, A., & Morris, J. (2002). Individual differences in attributional style: The relational influence of self-efficacy, self-esteem, and sex role identity. *Personality and Individual Differences, 32*, 183–196.

Hodge, R. M., Siegel, P. M., & Rossi, P. H. (1964). Occupational prestige in the United States, 1925-63. *American Journal of Sociology, 70*(3) 286-302.

Hogg, M. A. & Turner, J. C. (1987). Intergroup behaviour, self-stereotyping and the salience of social categories. *British Journal of Social Psychology, 26*(4), 325-340.

Inter-Parliamentary Union (2012). Women in National Parliaments. Retrieved August 9, 2012, from http://www.ipu.org/wmn-e/classif.htm.

James, K. (1993). Conceptualizing self with in-group stereotypes: Context and esteem precursors. *Personality and Social Psychology Bulletin, 19*(1), 117-121.

Johnson, W., & McCoy, N. (2000). Self-confidence, self-esteem and assumption of sex role in young men and women. *Perceptual and Motor Skills*, *90*(3), 751-756.

Jost, J. T., & Banaji, M. R. (1994). The role of stereotyping in system justification and the production of false-consciousness. *British Journal of Social Psychology, 33*, 1–27.

Kammeyer-Mueller, J. D. & Judge, T. A. (2008). A quantitative review of mentoring research: Test of a model. *Journal of Vocational Behavior, 72*(3), 269-283.

Kaschak, E., & Sharatt, S. (1988). Gender roles in Costa Rica: The effect of the presence of males or females. *Revista Interamericana de Psicologia*, *22*(1-2), 67-74.

Killeen, L. A., López-Zafra, E., & Eagly, A. H. (2006). Envisioning oneself as a leader: Comparisons of women and men in Spain and the United States. *Psychology of Women Quarterly, 30,* 312–322.

Landrine, H., Klonoff, E. A., & Brown-Collins, A. (1992). Cultural diversity and methodology in feminist psychology: Critique, proposal, empirical example. *Psychology of Women Quarterly*, *16*(2), 145-163.

Latrofa, M., Vaes, J., & Cadinu, M. (2012). Self-stereotyping: The central role of an ingroup threatening identity. *The Journal of Social Psychology, 152*(1), 92-111.

Latrofa, M., Vaes, J., Cadinu, M., & Carnaghi, A. (2010). The cognitive representation of self-stereotyping. *Personality and Social Psychology Bulletin, 36*(7), 911-922.

Latrofa, M., Vaes, J., Pastore, M., & Cadinu, M. (2009). "United we stand, divided we fall'! The protective function of self-stereotyping for stigmatised members' psychological well-being. *Applied Psychology: An International Review, 58*(1), 84-104.

Laurin, K., Kay, A. C., & Shepard, S. (2011). Self-stereotyping as a route to system justification. *Social Cognition*, *29*(2), 360-375.

Lauriola, M., Zelli, A., Calcaterra, C., Cherubini, D., & Spinelli, D. (2004). Sport gender stereotypes in Italy. *International Journal of Sport Psychology*, *35*(3), 189-206.

Laws, V. L. & Rivera, L. M. (2012). The role of self-image concerns in discrepancies between implicit and explicit self-esteem. *Personality and Social Psychology Bulletin, 38*(11), 1453-1466*.

Lee, T. L., Fiske, S. T. & Glick, P. (2010). Next gen ambivalent sexism: Converging correlates, causality in context, and converse causality, an introduction to the special issue. *Sex Roles, 62*(7-8), 395-404.

Levy, B. (1996). Improving memory in old age through implicit self-stereotyping. *Journal of Personality and Social Psychology, 71*(6), 1092-1107.

Lips, H.M. (2000). College students' visions of power and possibility as moderated by gender. *Psychology of Women Quarterly, 24,* 39–43.

Lobel, T. E., Gewirtz, J., Pras, R., Shoeshine-Rokach, M., & Ginton, R., (1999). Preadolescents' social judgments: The relationships between self-endorsement of traits and gender-related judgments of female peers. *Sex Roles, 40*(5-6), 483-498.

Lockwood, P. (2006). Someone like me can be successful: Do college students need same-gender role models? *Psychology of Women Quarterly, 30*, 36–46.

Lorenzi-Cioldi, F. (1991). Self-stereotyping and self-enhancement in gender groups. *European Journal of Social Psychology, 21*(5), 403-417.

Lun, J., Sinclair, S., & Cogburn, C. (2009). Cultural stereotypes and the self: A closer examination of implicit self-stereotyping. *Basic and Applied Social Psychology*, *31*(2), 117-127.

MacDonald, A. P. (1976). Identification and measurement of multidimensional attitudes toward equality between the sexes. *Journal of Homosexuality*, *1*(2), 165-182.

Mackie, M. (1980). The impact of sex stereotypes upon adult self imagery. *Social Psychology Quarterly*, *43*(1), 121-125.

Major, B., Barr, L., Zubek, J., & Babey, S. (1999). Gender and self-esteem: A meta-analysis. In W. Swann, J. Langlois, & L. Gilbert (Eds.), *Sexism and stereotypes in modern society: The gender science of Janet Taylor Spence* (pp. 223–253). Washington DC: American Psychological Association.

Markus, H. (1977). Self-schemata and processing information about the self. *Journal of Personality and Social Psychology*, *35*(2), 63-78.

Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist, 41*, 954–969.

Matsui, T., Ikeda, H., Ohnishi, R. (1989). Relations of sex-type socializations to career self-efficacy expectations of college students. *Journal of Vocational Behavior, 35,* 1-16.

McCall, C., & Dasgupta, N. (2007). The malleability of men's gender self-concept. *Self and Identity*, *6*(2-3), 173-188.

McCrea, S., Wieber, F., & Myers, A. (2012). Construal level mind-sets moderate self- and social stereotyping. *Journal of Personality and Social Psychology, 102*(1), 51-68.

McLean, H. M., & Kalest, R. (1994). Congruence between self-image and occupational stereotypes in students entering gender-dominated occupations. *Canadian Journal of Behavioral Science*, *26*(1), 142-162.

Mead, G.H. (1934). *Mind, self, and society from the standpoint of a social behaviorist.* University of Chicago Press: Chicago.

Miller, J. B., Lewy, J., & Peckham, E. (1997). Context effects on self-perceptions of feminine and masculine qualities. *Sex Roles*, *37*(9-10), 723-751.

Moss-Racusin, C. A., Dovidio, J. F., Brescoll, V. L., Graham, M. J., & Handelsman, J. (2012). Science faculty's subtle gender biases factor male students. *Proceeding of National Academy of Sciences*, 1-6.

Newman, R. C. (1976). Development and standardization of measures of stereotypic sex-role concepts and of sex-role adoption in adults. *Psychological Reports*, *39*(2), 623-630.

Nicotera, A. M. & Rancer, A. S. (1994). The influence of sex on self-perceptions and social stereotyping of aggressive communication predispositions. *Western Journal of Communication, 58*(4), 283-307.

Nosek,B. Banaji, M. R., & Greenwald, A. G. (2002). Math = male, me = female, therefore math ≠ me. *Journal of Personality & Social Psychology, 83*(1), 44-59.

Nosek, B. A., Greenwald, A. G., & Banaji, M. R. (2007). The implicit association test at age 7: A methodological and conceptual review. In J. Bargh (Ed.), *Social psychology and the unconscious: The automaticity of higher mental processes* (pp. 265-292). New York, NY: Psychology Press.

O'Leary, V. E., & Depner, C. E. (1975). College males' ideal female: Changes in sex-role stereotypes. *The Journal of Social Psychology*, *95*(1), 139-140.

Onorato, R. S., & Turner, J. C. (2004). Fluidity in the self-concept: The shift from personal to social identity. *European Journal of Social Psychology, 34*(3), 257-278.

Orne, M. T. (1962). On the social psychology of the psychological experiment: With particular reference to demand characteristics and their implications. *American Psychologist, 17*(11), 776.

Oswald, D., & Chapleau, K. (2010). Selective self-stereotyping and women's self-esteem maintenance. *Personality and Individual Differences, 49*(8), 918-922.

Oswald, D. L. & Lindstedt, K. (2006). The content and function of gender self-stereotypes: an exploratory investigation. *Sex Roles, 54*(7-8), 447-458.

Otten, S., & Epstude, K. (2006). Overlapping mental representations of self, ingroup, and outgroup: unraveling self-stereotyping and self-anchoring. *Personality & social psychology bulletin*, *32*(7), 957-69.

Pennell, G. E., & Ogilvie, D. M. (1995). You and me as she and he: The meaning of gender-related concepts in other- and self-perception. *Sex Roles, 33*(1-2), 29-57.

Perugini, M. (2005). Predictive models of implicit and explicit attitudes. *British Journal of Social Psychology, 44*, 29-45.

Perugini, M., Richetin, J., & Zogmaister, C. (2010). Prediction of behavior. In B. Gawronski, B. K. Payne (Eds.), *Handbook of implicit social cognition: Measurement, theory, and applications* (pp. 255-277). New York: Guilford Press.

Petty, R. E. & Briñol, P. (2009). Implicit ambivalence: A meta-cognitive approach. In R. E. Petty, R. H. Fazio, & P. Brinol (Eds.), *Attitudes: Insights from the new implicit measures*. (pp. 119-161). New York, NY, US: Psychology Press.

Petty, R. E., Briñol, P., & DeMarree, K. G. (2007). The Meta-Cognitive Model (MCM) of attitudes: Implications for attitudes measurement, change, and strength. *Social Cognition, 25*(5), 657-686.

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.

Quek, B-K. & Ortony, A. (2012). Assessing implicit attitudes: What can be learned from simulations? *Social Cognition, 30*(5), 610-630.

Rajacich, D., Kane, D., Williston, C., & Cameron, S. (2013). If they do call you a nurse, it is always a "male nurse": Experiences of men in the nursing profession. *Nursing Forum, 48*(1), 71-80.

Ricciardelli, L. A., Connor, J. P., Williams, R. J., & Young, R. M. (2001). Gender stereotypes and drinking cognitions as indicators of moderate and high risk drinking among young women and men. *Drug and Alcohol Dependence*, *61*(2), 129-136.

Ritsher, J. B., Otilingam, P. G., & Grajales, M. (2003). Internalized stigma of mental illness: Psychometric properties of a new measure. *Psychiatry Research*, *121*(1), 31-49.

Ritter, D. (2004). Gender role orientation and performance on stereotypically feminine and masculine cognitive tasks. *Sex Roles*, *50*(7-8), 583-591.

Rivera, L. M. & Paredez, S. M. (2013). Stereotypes can "get under the skin": Testing a self-stereotyping and psychological resource model of overweight and obesity. *Journal of Social Issues*, *70*(2).

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.

Rosenkrantz, P., Vogel, S., Bee, H., Broverman, I., & Broverman, D. M. (1968). Sex-role stereotypes and self-concepts in college students. *Journal of Consulting and Clinical Psychology*, *32*(3), 287-295.

Ross, L., Anderson, D. R., & Wisocki, P. A. (1982). Television viewing and adult sex-role attitudes. *Sex Roles*, *8*(6), 589-592.

Ross, L., Lepper, M. R., & Hubbard, M. (1979). Perseverance in self-perception and social perception. Biased attributional processes in the debriefing paradigm. *Journal of Personality and Social Psychology, 32,* 880-892.

Rudman, L. A., Greenwald, A. G., & McGhee, D. E. (2001). Implicit self-concept and evaluative implicit gender stereotypes: self and ingroup share desirable traits. *Personality and Social Psychology Bulletin*, *27*(9), 1164-1178.

Rudman, L. A. & Phelan, J. E. (2010). The effect of priming gender roles on women's implicit gender beliefs and career aspirations. *Social Psychology, 41*(3), 192-202.

Sakata, K. (1995). The effects of social category salience and self-construals upon self-stereotyping strategies. *Japanese Journal of Experimental Social Psychology, 34*(3), 245-256.

Sandberg. S. (2013). *Lean In.* New York: New York. Aldred A. Knopf.

Schmader, T. (2002). Gender identification moderates stereotype threat effects on women's math performance. *Journal of Experimental Social Psychology, 38*(2), 194-201.

Schmitt, M. T., Branscombe, N. R., Kobrynowicz, D., & Owen, S. (2002). Perceiving discrimination against one's own gender group has different implications for well-being in women and men. *Personality and Social Psychology Bulletin, 28*(2), 197-210.

Schmitt, M. T., Branscombe, N. R., & Silvia, P. J. (2006). Categorizing at the group-level in response to intragroup social comparisons: A self-categorization theory integration of self-evaluation and social identity motives. *European Journal of Social Psychology, 36*(3), 297-314.

Schmitt, M., & Wirth, J. (2009). Evidence that gender differences in social dominance orientation result from gendered self-stereotyping and group-interested responses to patriarchy. *Psychology of Women Quarterly, 33*(4), 429-436.

Sczesny, S. (2003). A closer look beneath the surface: Various facets of the think-manager-think-male stereotype. *Sex Roles*, *49*(7/8), 353-363.

September, A. N., McCarrey, M., Baranowsky, A., Parent, C., & Schindler, D. (2001). The relation between well-being, imposter feelings, and gender role orientation among Canadian university students. *The Journal of Social Psychology*, *141*(2), 218-232.

Sherman, D. K. & Cohen, G. L. (2002). Accepting threatening information: Self-affirmation and the reduction of defensive biases. *Current Directions in Psychological Science, 11*(4), 119-123.

Sherman, D. K. & Hartson, K. A. (2011). Reconciling self-protection with self-improvement: Self-affirmation theory. In M. Alicke & C. Sedikides (Eds.), *Handbook of Self-Enhancement and Self-Protection* (pp. 128-151).

Signorella, M. L. (1992). Remembering gender-related information. *Sex Roles*, *27*(3-4), 143-156.

Silvern, L. E., & Katz, P. A. (1986). Gender roles and adjustment in elementary-school children: A multidimensional approach. *Sex Roles*, *14*(3-4), 181-202.

Simmons, A. B., & Turner, J. E. (1976). The socialization of sex-roles and fertility ideals: A study of two generations in Toronto. *Journal of Comparative Family Studies*, *7*(2), 255-271.

Simpson, R. (2005). Men in non-traditional occupations: Career entry, career orientation and experience of role strain. *Gender, Work and Organization, 12*(4), 363-380.

Sinclair, S., Hardin, C. D., & Lowery, B. S. (2006). Self-stereotyping in the context of multiple social identities. *Journal of Personality and Social Psychology*, *90*(4), 529-42.

Sinclair, S., Huntsinger, J., Skorinko, J., & Hardin, C. (2005). Social tuning of the self: Consequences for the self-evaluations of stereotype targets. *Journal of Personality and Social Psychology, 89(2), 160-175.*

Sinclair, S., & Lun, J. (2006). Significant other representations activate stereotypic self-views among women. *Self and Identity*, *5*(2), 196-207.

Siy, J. O., & Cheryan, S. (2012). When compliments fail to flatter: American individualism and responses to positive stereotypes. *Journal of Personality and Social Psychology, 104*(1), 87-102.

Smith, E. R. & Henry, S. (1996). An in-group becomes part of the self: Response time evidence. *Personality and Social Psychology Bulletin, 22*(6), 635-642.

Spence, J. T., & Buckner, C. E. (2000). Instrumental and expressive traits, trait stereotypes, and sexist attitudes. *Psychology of Women Quarterly*, *24*(1), 44-62.

Spence, J. T. & Hall, S. K. (1996). Children's gender-related self-perceptions, activity preferences, and occupational stereotypes: A test of three models of gender constructs. *Sex Roles, 35*(11-12), 659-692.

Helmreich, R. L., Spence, J. T., & Holahan, C. K. (1979). Psychological androgyny and sex role flexibility: A test of two hypotheses. *Journal of Personality and Social Psychology, 37*(10), 1631.

Spence, J. J., Helmreich, R. L., & Stapp, J. (1974). The Personal Attributes Questionnaire: A measure of sex-role stereotypes and masculinity and femininity. *JSAS: Catalog of Selected Documents in Psychology, 4*, 43-44.

Steele, M. C. & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African Americans. *Journal of Personality and Social Psychology*, *69*(5), 797-811.

Stout, J., Dasgupta, N., Hunsinger, M., & McManus, M. (2011). STEMing the tide: Using ingroup experts to inoculate women's self-concept in science, technology, engineering, and mathematics (STEM). *Journal of Personality and Social Psychology, 100*(2), 255-270.

Swan, S., & Wyer, R. S. (1997). Gender stereotypes and social identity: How being in the minority affects judgment of self and others. *Personality and Social Psychology Bulletin,23*(12), 1265-1276.

Swim, J. K & Hyers, L. L. (2009). Sexism. In T. D. Nelson (Ed.), *Handbook of prejudice, stereotyping, and discrimination.* (pp. 407-430). New York, NY, US: Psychology Press; US.

Tajfel, H. (1981). Social stereotypes and social groups. In J. C. Turner, & H. Giles (Eds), *Intergroup behaviour* (pp. 144–167). Oxford: Blackwell.

Tajfel, H., & Turner, J.C. (1986). The social identity theory of intergroup behavior. In S. Worchel & W. Austin (Eds.), *Psychology of intergroup relations* (2nd ed., pp. 7-24). Chicago: Nelson-Ha.

Treiman, D. J; Terrell, K. (1975). Sex and the process of status attainment: A comparison of working women and men. *American Sociological Review, 40*(2), 174-200.

Twenge, J. M., & Campbell, W. K. (2002). Self-esteem and socioeconomic status: A meta-analytic review. *Personality and Social Psychology Review, 6*(1), 59-71.

Wentura, D. & Degner, J. (2010). A practical guide to sequential priming and related tasks. In B. Gawronski, B. K. Payne (Eds.), *Handbook of implicit social cognition: Measurement, theory, and applications* (pp.95-116). New York: Guilford Press.

Wheeler, S. C., & Petty, R. E. (2001). The effects of stereotype activation on behavior: A review of possible mechanisms. *Psychological Bulletin, 127*(6), 797.

Whitley, B. E. (1983). Sex role orientation and self-esteem: a critical meta-analytic review. *Journal of Personality and Social Psychology*, *44*(4), 765-78.

Williams, R. J., & Ricciardelli, L. A. (2003). Negative perceptions about self-control and identification with gender-role stereotypes related to binge eating, problem drinking, and to comorbidity among adolescents. *Journal of Adolescent Health*, *32*(1), 66-72.

Wilson, T. D., Lindsey, S., & Schooler, T. Y. (2000). A model of dual attitudes. *Psychological Review, 107*(1), 101.

Winter, S., & Udomsak, N. (2002). Male, female and transgender: Stereotypes and self in

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

Wittenbrink, B., Judd, C. M., & Park, B. (1997). Evidence for racial prejudice at the implicit level and its relationship with questionnaire measures. *Journal of Personality and Social Psychology*, *72*(2), 262-74.

Zuckerman, D. M. (1980). Self-esteem, personal traits, and college women's life goals. *Journal of Vocational Behavior*, *17*(3), 310-319.

Footnotes

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

[2]For 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.

[3]Separate Cronbach's reliabilities were run for the masculine and feminine gender stereotype word ratings to examine if these trait ratings correlate among each other (α range = .2-.5). However, because the sub-sample who completed this pre-test survey was relatively small, these alphas cannot be accurately interpreted (Bonett, 2002).

[4]Gender 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.

[5]For 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, $r_{men}(19) = .02$, $p = .95$, $r_{women}(22) = .02$, $p = .95$.

[6]Note 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 demontrated 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.
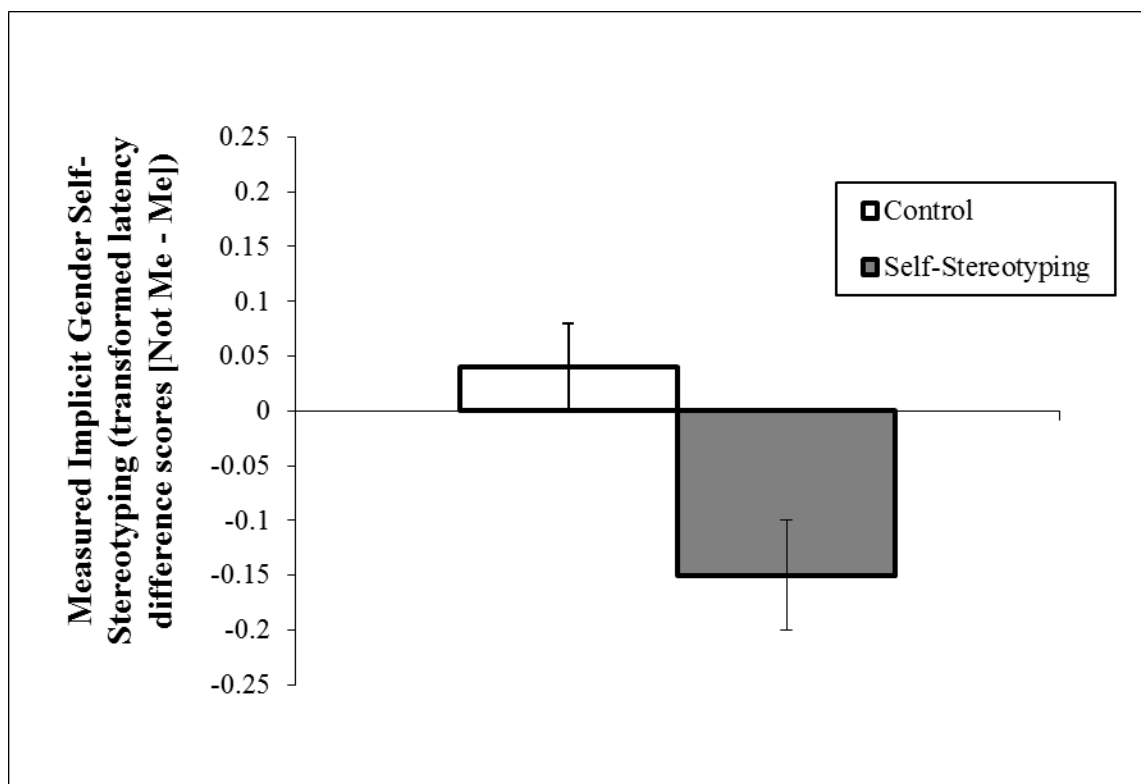
Figure 1. Effect of negative IGSS on Me/Not Me task (Study 1b). Higher numbers on the

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.
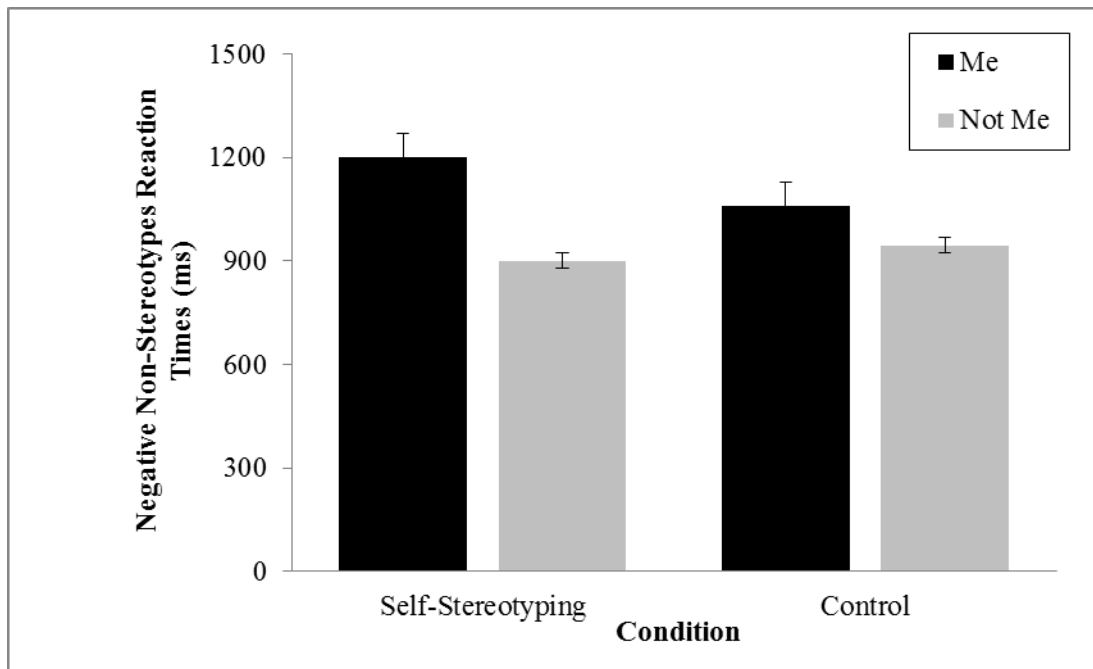
Figure 3. Effect of negative IGSS on classifying negative non-stereotypes as *me* versus

not me (Study 1b). Higher numbers on the y-axis mean slower time in response.
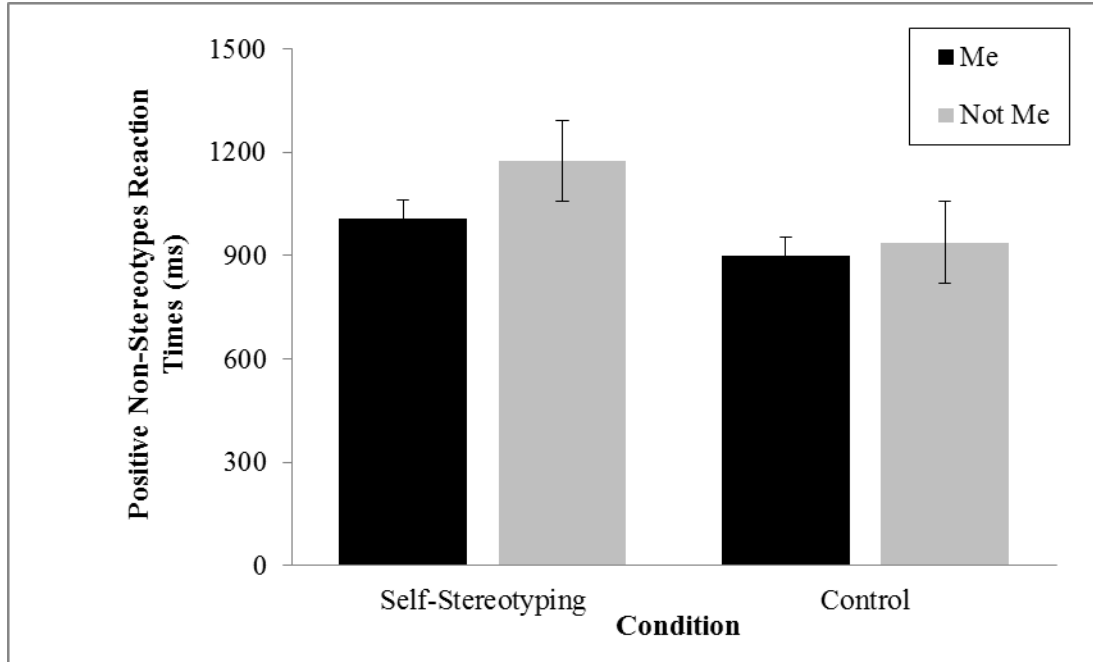
Figure 4. Effect of negative IGSS on classifying positive non-stereotypes as *me* versus

not me (Study 1b). Higher numbers on the y-axis mean slower time in response.
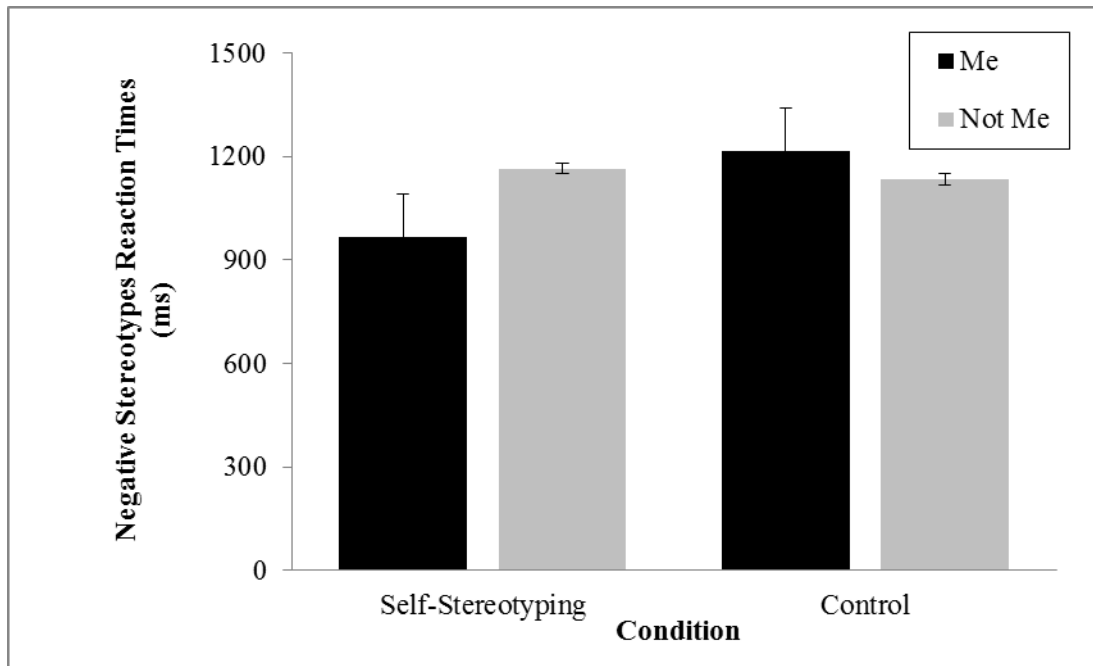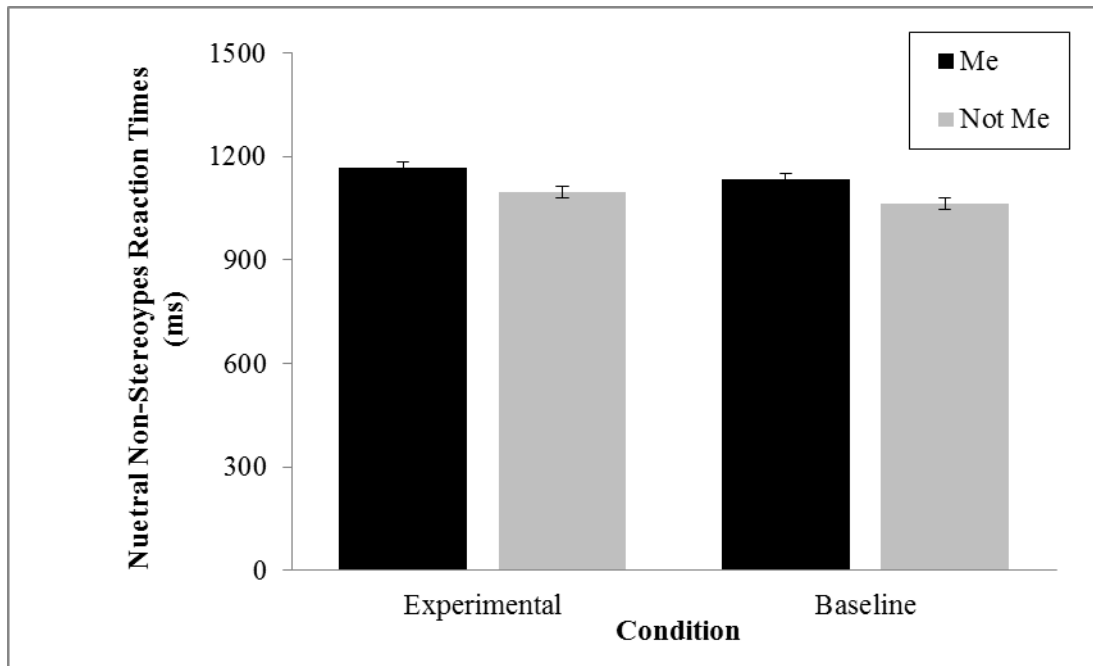
Figure 5. Effect of negative IGSS on classifying neutral non-stereotypes as *me* versus *not*

me (Study 1b). Higher numbers on the y-axis mean slower time in response.
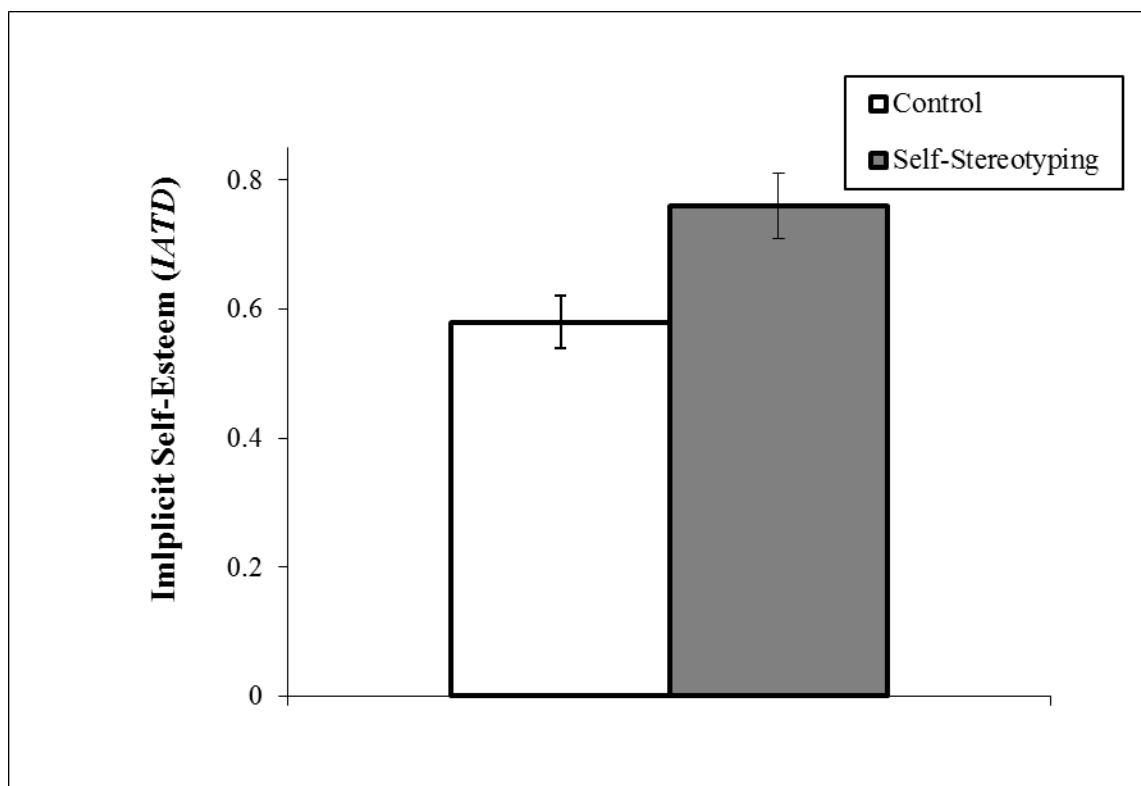
Figure 6. Effect of negative IGSS on implicit self-esteem (Study 3). Higher SE-IAT *D*

numbers indicate higher implicit self-esteem on the IAT.
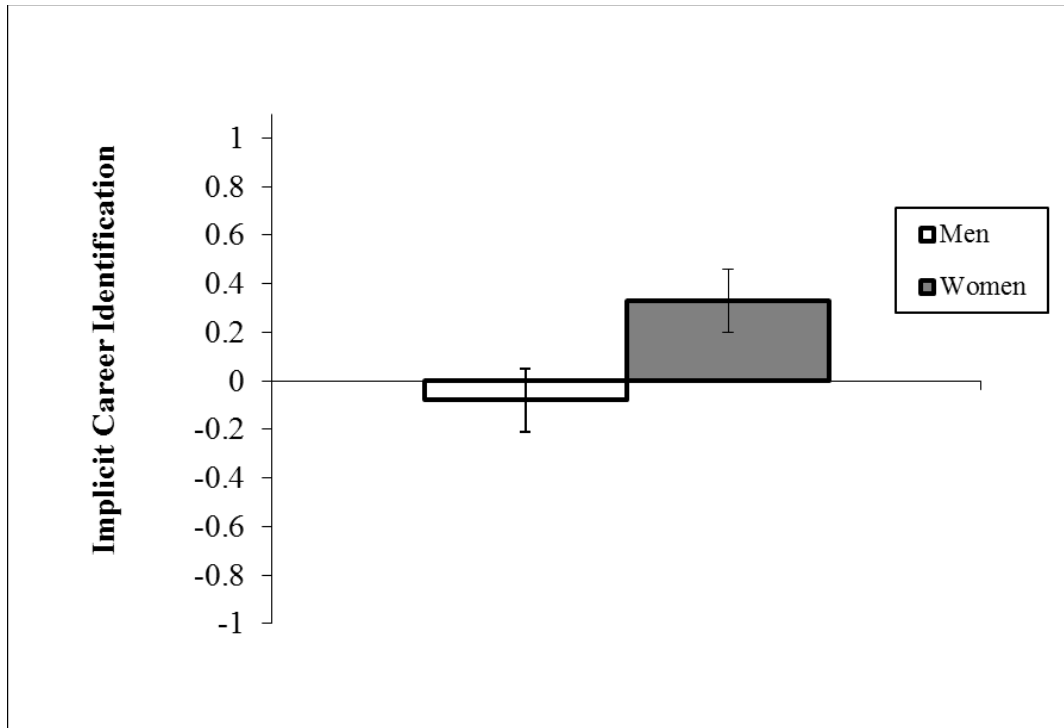
Figure 7. Gender differences in implicit career identification (Study 4b). Higher Career

Identification IAT *D* numbers indicate strong implicit identification with feminine careers
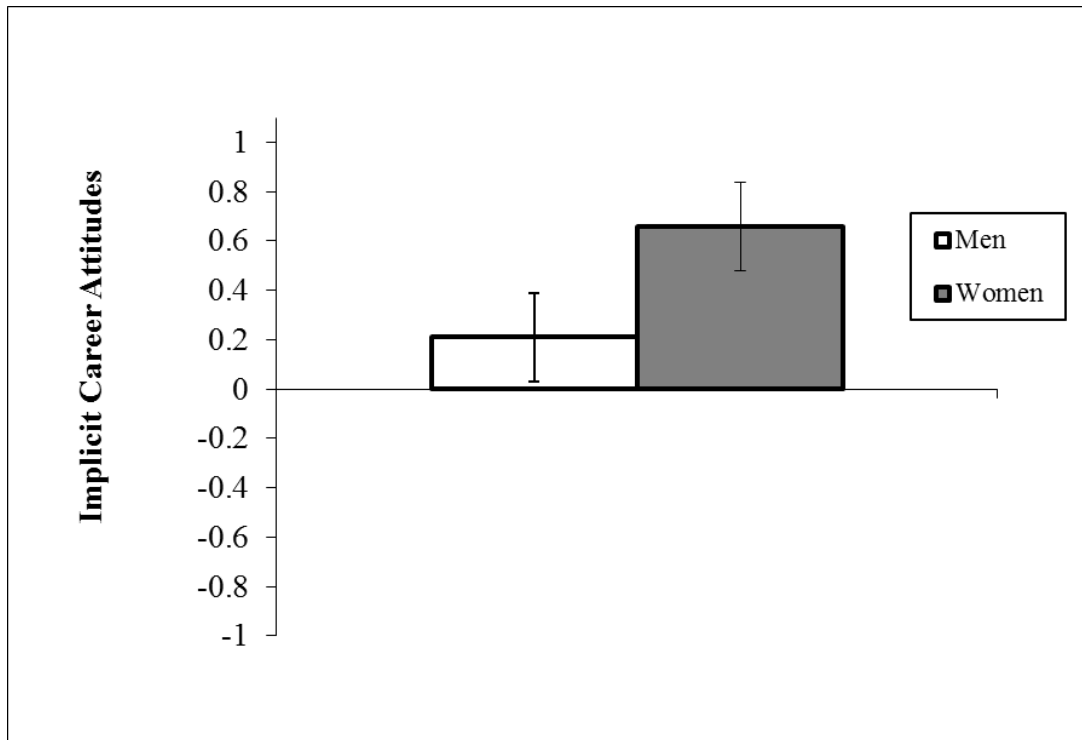
on the IAT.

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.
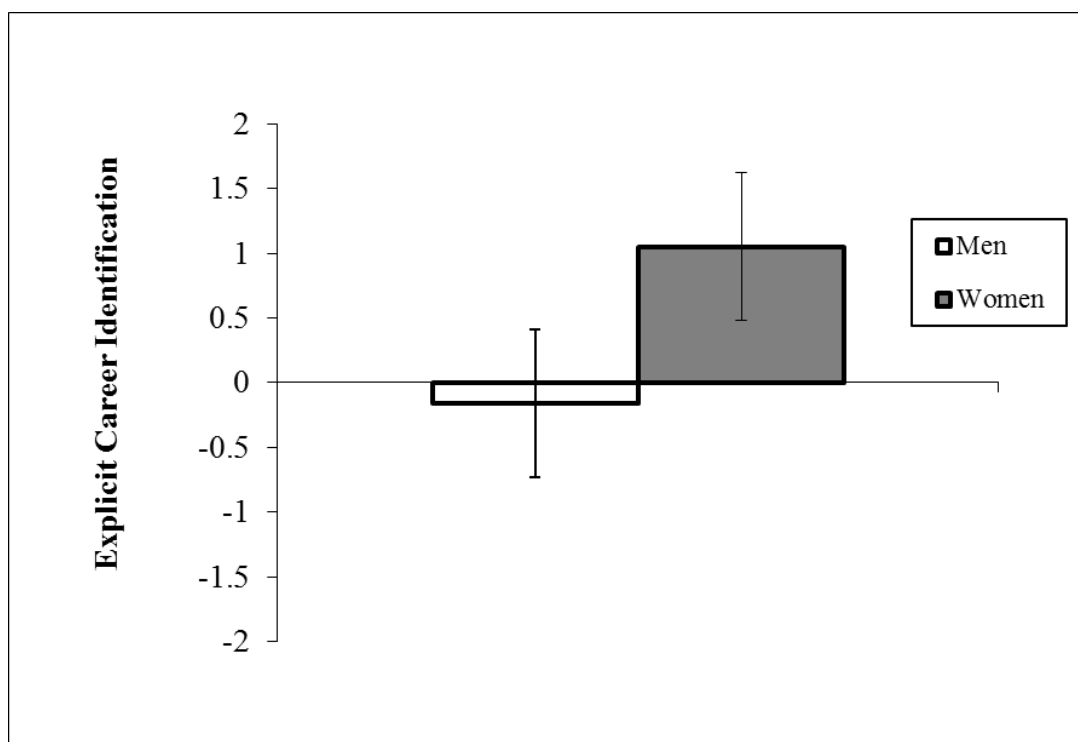
Figure 9. Gender differences in explicit career identification (Study 4b). Higher numbers

indicate strong explicit identification with feminine careers.
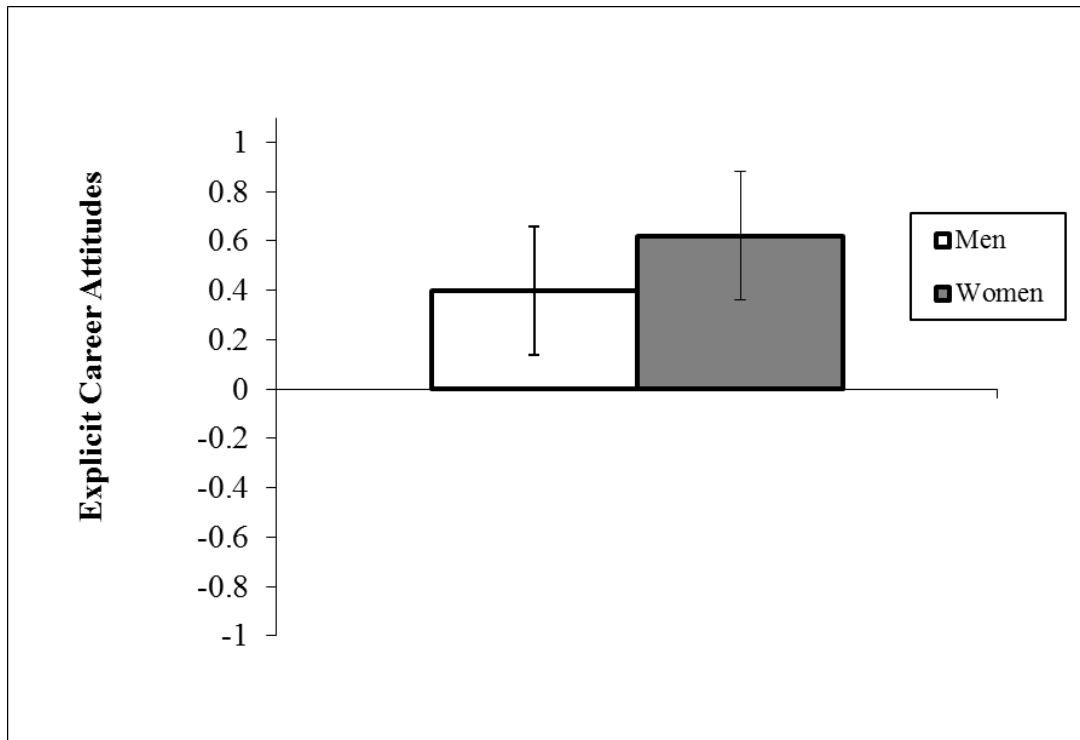
Figure 10. Gender differences in explicit career attitudes (Study 4b). Higher numbers indicate more positive attitudes toward feminine careers.
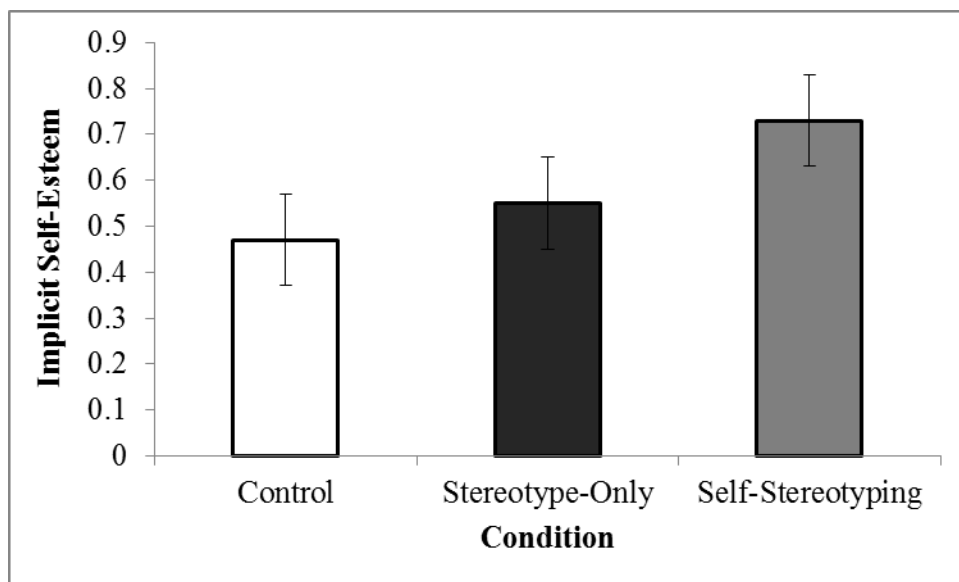
Figure 11. Effect of negative IGSS on implicit self-esteem (Study 5). Higher SE-IAT *D*

numbers indicate higher implicit self-esteem on the IAT.
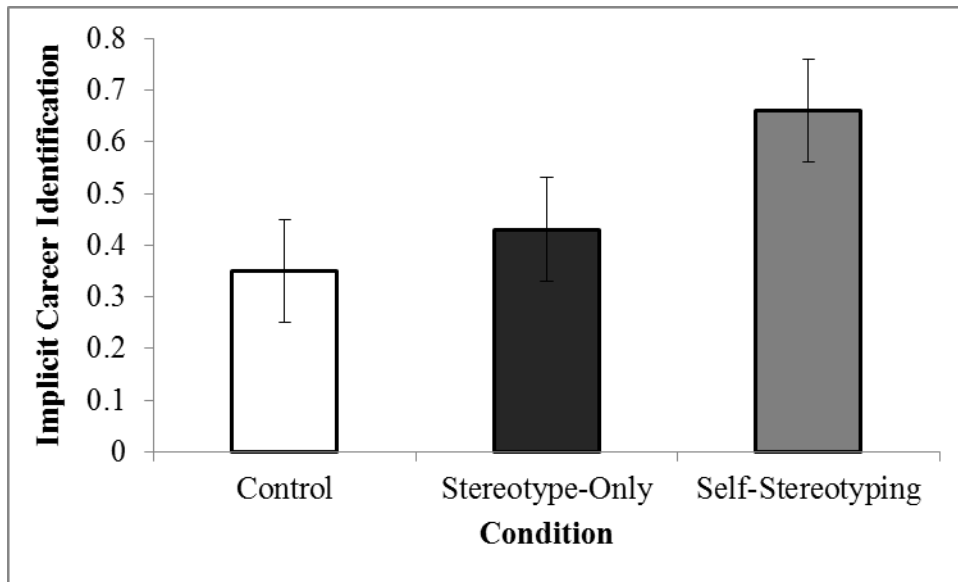
Figure 12. Effect of negative IGSS on implicit career identification (Study 5). Higher

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)

| Citation	Type of (GSS)
Asgari, Dasgupta, Cote (2010)	implicit
Cadinu & Galdi (2012)	implicit
Gustafsson & Bjorklund (2008)	implicit
Lorenzi-Cioldi (1991)	implicit
Lun, Sinclair, & Cogburn (2009, Study 1)	implicit
McCall & Dasgupta (2007)	implicit
Onorato & Turner (2004)	implicit
Rudman & Phelan (2010)	implicit
Rudman, Greenwald, McGhee (2001)	implicit
Sakata (1995)	implicit
Aldag & Brief (1979)	explicit
Allgood, Lewinsohn, & Hops (1990)	explicit
Barreto, Ellemers, Piebinga, & Moya (2009)	explicit
Chiu, Hong, Lam, Fu, Tong, & Lee (1998)	explicit
Cihangir, Barreto, & Ellemers (2010)	explicit
Clark (2001)	explicit
Cohen & Garcia (2005)	explicit
Coleman & Hong (2008)	explicit
Coplin & Williams (1978)	explicit
Cristall & Dean (1976)	explicit
Davis, Williams, & Best (1982)	explicit
Deutsch & Gilbert (1978)	explicit
Donaghue & Fallon (2003)	explicit
Downs & Abshier (1982)	explicit
Elman, Press & Rosencrantz (1970)	explicit
Endo (1984)	explicit
Gilbert, Waldroop, & Deutsch (1981)	explicit
Guimond et al. (2007)	explicit
Guimond, Chatard, Martinot, Crisp, & Redersdorff (2006)	explicit
Gupta (1992)	explicit
Hans & Eisenberg (1985)	explicit
Harris, Perricone, & Smith (1988)	explicit
Hogg & Turner (1987)	explicit
James (1993)	explicit
Johnson & McCoy (2000)	explicit
Kaschak & Sharatt (1988)	explicit

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, Willaims, & 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)

Stimulus	$M_{valence}$	$SD_{valence}$	M_{gender}	SD_{gender}
Negative Female Stereotype Relevant				
moody	2.65**	1.23	5.61**	1.23
materialistic	2.71**	1.43	5.15**	1.32
vulnerable	2.59**	1.13	5.00**	1.15
complaining	2.03**	0.94	5.47**	1.16
weak	2.15**	1.02	4.85**	
Negative Female Stereotype Irrelevant				
racist	1.26**	0.71	3.85	0.89
gullible	2.85**	1.16	4.50†	1.50
worthless	1.21**	0.98	3.85	0.74
Neutral Female Stereotype Irrelevant				
busy	4.03	0.97	3.91	1.44
unpredictable	3.94	1.15	3.58	1.61
old-fashioned	4.03	0.79	4.15	1.46
Positive Female Stereotype Irrelevant				
artistic	5.88**	1.04	4.21	1.29
modern	5.18**	0.99	4.15	1.02
calm	5.71**	1.03	3.94	1.01

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)*

Stimulus	$M_{valence}$	$SD_{valence}$	M_{gender}	SD_{gender}
mediocre	2.79[**]	1.04	3.62[**]	0.60
lower-class	2.62[**]	1.37	3.68[*]	0.59
violent	1.62[**]	0.89	2.26[**]	0.90
poor	2.15[**]	1.13	3.68[*]	0.77
dangerous	2.00[**]	1.18	2.59[**]	1.23

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)

Stimulus	M_{gender}	SD_{gender}	M_{status}	SD_{status}	$M_{valence}$	$SD_{valence}$
Masculine Occupations						
pilot	2.00[**]	1.29	4.54[**]	1.48	2.11[**]	1.13
surgeon	3.35[*]	1.26	5.85[**]	0.36	2.33[**]	1.53
police officer	2.96[**]	1.08	4.14[**]	1.08	1.89[**]	1.68
ship captain	1.88[**]	1.21	3.70[**]	1.54	.89[*]	1.78
masculine occupation composite	2.55[**]	0.87	4.55[**]	0.71	1.81[**]	1.30
Feminine Occupations						
elementary teacher	5.27[**]	1.28	3.64[**]	0.87	1.94[**]	1.47
nurse	5.44[**]	1.26	4.79[**]	0.83	2.11[**]	1.53
social worker	5.19[**]	1.30	3.68[**]	0.82	1.83[**]	1.50
speech therapist	5.27[**]	1.04	4.32[**]	0.77	1.78[**]	1.78
feminine occupation composite	5.29[**]	0.81	4.11[**]	0.55	1.81[**]	1.17

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)

Measure	1	2	3	4
1. Implicit Career Identification		.71**	0.16	-0.19
2. Implicit Career Attitudes	0.37		0	-0.33
3. Explicit Career Identification	0.15	0.11		.42*
4. Explicit Career Attitudes	.55**	0.36	0.09	

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

Appendix A

Positive Relevant	Negative Relevant	Positive Irrelevant	Negative Irrelevant	Neutral Irrelevant
affectionate	shy	religious	gullible	normal
cheerful	passive	athletic	poor	neutral
compassionate	submissive	tradition-loving	lower-class	ordinary
feminine	*complaining	rhythmical	violent	civilian
gentle	dependent	successful	criminal	formal
sensitive	*moody	rich	stupid	tall
sympathetic	*weak	wealthy	dangerous	quick
tender	feeble	educated	loud	approachable
understanding	frail	preppy	uneducated	alright
warm	delicate	funny	racist	calm
caring	*vulnerable	strong	horrible	reliable
nurturing	*materialistic	theatrical	repulsive	sincere
petite	weakness	magnificent	appalling	solemn
nice	timid	amazing	disgusting	tactful
sexy	manipulative	fabulous	sickening	truthful
feeble		enjoyable	worthless	unpredictable
frail		wonderful	awful	unsystematic
delicate		durable	dreadful	iron
fine		conscientious	terrible	quaint
			saddening	fair
			upsetting	ok
			different	puzzled
			mediocre	forward
				inquisitive
				modern
				open
				old-fashioned
				sane
				tame
				sleepy
				cautious
				busy
				alive
				distinct
				artistic
				adaptable
				conventional

Appendix B

Occupation Stimuli Pre-tested in Study 4a

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

<div align="center">

VALERIE L. LAWS
CURRICULUM VITAE

</div>

Professional
Department of Psychology
Rutgers, The State University of New Jersey
101 Warren Street
Newark, New Jersey 07102
Email: vlaws@psychology.rutgers.edu
Lab: (973) 353-3929

Personal
198 Baldwin Street, 2nd Floor
Bloomfield, NJ 07003
Cell: (951) 764-5266

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

Research Specializations
Implicit Social Cognition
Self-Stereotyping
Self-Esteem
Gender Issues
Stereotypes & Prejudice
Self and Identity
Mental and Physical Health

Teaching Specializations
Statistics
Social Psychology
Intergroup Relations
Psychology of Women
Stereotypes & Prejudice
Human Sexual Behavior

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	Geis Memorial Award for Feminist Dissertation Research, Honorable Mention. Title: *The experimental manipulation of negative gender self-stereotyping in women's self-image and career attitudes.* Status: Not Funded ($15,000).
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).
2011	Society of Personality and Social Psychology (SPSP) Student Travel Award. Status: Funded ($500).
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).
2007	CSU, San Bernardino, Associated Students Incorporated Student Travel Award. Status: Funded ($135).

PUBLICATIONS & MANUSCRIPTS IN PREPARATION

Laws, **V. L.** & Rivera, L. M. (2012). The role of self-image concerns in discrepancies between implicit and explicit self-esteem. *Personality and Social Psychology Bulletin, 38*(11), 1453-1466.

Laws, V. L. & Rivera, L. M (2014). The implicit social cognition of attitudes toward contraceptives and implications for sexual behavior. In L. Bourgois & S. Cauchois (Eds.), *Contraceptives: predictors of use, role of cultural attitudes, practices and levels of effectiveness* (pp. 105-130). New York: Nova Science Publishers. (Invited).

Laws, V. L. & Rivera, L. M. (2014). Gender differences in implicit and explicit negative versus positive self-stereotyping: Implications for gender status. Manuscript in preparation.

Rivera, L. M. & **Laws**, **V. L**. (2014). Does stereotyping, prejudice, and discrimination function to meet self-esteem needs? A meta-analysis of the relation between self-esteem and outgroup bias. Manuscript in preparation.

Rivera, L. M., **Laws, V. L**., & Margevich, A. Self-stereotyping structure and process model. Manuscript in preparation.

Rivera, L. M., Veysey, B. M., **Laws, V. L.** & Henein, M. The impact of gender and implicit criminal identity on mental health. Manuscript in preparation.

Rivera, L. M., **Laws, V. L.,** & Stebbings, C. The impact of affirming gender identity on implicit motivations to procreate. Manuscript in preparation.

RESEARCH IN PROGRESS

Laws, V. L. & Rivera, L. M. The experimental manipulation of implicit gender self-stereotyping and its effects on women's implicit self-esteem and implicit career identification.

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

Rivera, L. M. **Laws, V. L.** & Dasgupta, N. The effect of a prototypicality affirmation on implicit and explicit self-esteem and prejudice.

Rivera, L. M., Haller, J., & **Laws, V. L.** When "being a man" is harmful: Gender self-stereotyping moderates achievement motivation and performance behavior.

CONFERENCE PRESENTATIONS & POSTERS

Laws, V. L., Rivera, L. M., & Stebbings, C. (2014, March). *Affirming gender identity and implicit attitudes toward contraceptives.* Poster presented at the Eastern Psychological Association Conference, Boston, MA.

Laws. V. L. & Rivera, L. M. (2014, February). *The role of gender status in implicit and explicit negative self-stereotyping.* Poster presented at the Society for Personality and Social Psychology Conference. Austin, TX.

Rivera, L. M., Veysey, B. M., & **Laws, V. L**. (2013, November). *Exploring the link between criminal and Black identities.* Talk presented at the American Society of Criminology Conference, Atlanta, GA.

*Henein, M., Veysey, B. M., Rivera, L. M., & **Laws, V. L**. (2013, November). *Is she bad or sad?*
Gender self-stereotyping, criminal identity, and mental health. Talk presented at the American Society of Criminology Conference, Atlanta, GA.

Laws. V. L. & Rivera, L. M. (2013, October). *The role of gender status in implicit and explicit negative self-stereotyping.* Talk presented at the New England Psychological Association Conference, Bridgeport, CT.

Laws, V. L., Rivera, L. M, & *Panila, L. (2013, October). *Gender, status, and valence evaluations of multiple contemporary occupations.* Poster presented at the New England Psychological Association Conference, Bridgeport, CT.
.
*Henein, M., Veysey, B. M., Rivera, L. M., & **Laws, V. L**. (2013, April). *Is she bad or sad? A study of gender and criminal identity*. Poster presented at Undergraduate Research Day at Rutgers, the State University of New Jersey. Newark, NJ.

Laws, V. L. & Rivera, L. M. (2013, March). *The effect of prototypicality affirmation on implicit and explicit self-esteem and prejudice*. Poster presented at the Eastern Psychological Association Conference. Manhattan, NY.

Laws, V. L. & Rivera, L. M. (2013, January). *Do outgroup biases function to meet self-esteem needs: A meta-analysis.* Poster presented at the Society for Personality and Social Psychology Conference. New Orleans, LA.

Laws, V. L. & Rivera, L. M. (2012, October). *Do outgroup biases function to meet self-esteem needs: A meta-analysis.* Talk presented at the New England Psychological Association Conference, Worcester, MA.

Laws, V. L. & Rivera, L. M. (2012, January). *The role of self-image concerns in attitudes toward condoms among individuals with discrepancy between implicit*

and explicit self-esteem. Poster presented at the Society for Personality and Social Psychology Conference. San Diego, CA.

*Kapadia, A., **Laws, V. L**., & Rivera, L. M. (2011, April). *Gender differences in academic behaviors and performance.* Poster presented at Rutgers University, Undergraduate Student Research Day. Newark, NJ.

Laws, V. L. & Rivera, L. M. (2010, January). *The motivation to resolve implicit-explicit self-esteem discrepancies and its relation to sexual behavior.* Poster presented at the Society for Personality and Social Psychology Conference. Las Vegas, NV.

Laws, V. L. & Rivera, L. M. (2009, February). *Self-esteem discrepancy as a determinant of attitudes toward condoms.* Poster presented at the Society for Personality and Social Psychology Conference. Tampa, FL.

Laws, V. L. & Rivera, L. M. (2008, June). *Self-esteem discrepancies and attitudes toward condoms*. Talk presented at the 18th Annual Student Research Conference, San Bernardino, CA.

Laws, V. L. & Rivera, L. M. (2008, May). *Self-esteem discrepancies and attitudes toward condoms*. Talk presented at the 32nd Annual SSRIC Student Research Conference, Long Beach, CA.

Laws, V. L. & Brogan, H. (2004, April). *The effect of conscientiousness and openness to experience on self-efficacy.* Poster presented at the Psychology Undergraduate Research Conference. Los Angeles, CA.

*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

SSCI   316   Race and Racism, Fall 2007 & Winter 2008, Dr. Luis M. Rivera

Invited Lectures
Laws, V. L. (2014, February). *The ups and downs of grad school: Research on gender self-stereotyping.* Invited presentation to PSYC 318, Senior Research Seminar, Dr. Eleni Frangos, New Jersey City University.

Laws, V. L. (2013, November). *Ameliorating stereotypes, prejudice, and discrimination.* Invited presentation to PSYC 409, Special Problems in Psychology: Stereotyping, Prejudice, & Discrimination, Dr. Luis M. Rivera, Rutgers University, Newark.

Laws, V. L. (2013, October). *Developmental roots of stereotypes, prejudice, & discrimination.* Invited presentation to PSYC 409, Special Problems in Psychology: Stereotyping, Prejudice, & Discrimination, Dr. Luis M. Rivera, Rutgers University, Newark.

Laws, V. L. (2013, October). *Individual differences in the expression of stereotypes, prejudice, & discrimination.* Invited presentation to PSYC 409, Special Problems in Psychology: Stereotyping, Prejudice, & Discrimination, Dr. Luis M. Rivera, Rutgers University, Newark.

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.

Laws, V. L. (2009, May). *Person perception and attitudes*. Invited presentation to PSYC 382, Social Psychology, Dr. Robert Cupp, California State University, San Bernardino.

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