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Gender differences in verbal and non-verbal communication in mixed-gender groups

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ABSTRACT

GENDER DIFFERENCES IN VERBAL AND NON-VERBAL COMMUNICATION IN MIXED-GENDER GROUPS

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Gender differences in communication patterns have a long-explored history in social psychology, resulting in evidence for a number of different theories building from research in individual differences in personality, social role, and self-categorization theory, as well as intergroup interactions and group status research. This project integrates the theoretical perspectives and examines the extent to which gender differences in communication behaviors vary by situational factors implied by those theories. The following two-part study relies on observational coding of existing social interaction data and a laboratory experiment to examine whether and how men and women alter their behavioral communication patterns as a function of the gender composition in that context. Study 1 used archival data (video-recorded dyadic interactions) to test for differences in men and women's low-status and high-status behavioral patterns. Results found that there were no effects of participant or partner gender on low status behavior, though there were interesting effects on the gender of surrounding others on high status behaviors. The more women a group contained, the fewer the displays of high status behaviors. When each outcome was analyzed separately, analyses also found that groups with more women generated less forward leaning and more direct body orientation. Also, women

displayed more nodding and less direct eye contact than men. Study 2 utilized video-recordings of participants in a salient group context to test the possible effects of gender composition on high- and low-status communication patterns. Results for Study 2 show that group composition did not have a significant effect on either verbal or non-verbal behaviors.

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GENDER DIFFERENCES IN VERBAL AND NON-VERBAL

COMMUNICATION IN MIXED-GENDER GROUPS

BY

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A THESIS SUBMITTED TO THE GRADUATE SCHOOL
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CHAPTER 1

INTRODUCTION

Past research has found that men and women often differ in both verbal and non-verbal communication patterns (Eagly & Johnson, 1990; Kring & Gordon, 1998). There are a number of theories that aim to explain these differences. Communication patterns are thought to be the result of differences in a variety of factors including personality (Feingold, 1994), socialization experiences (Eagly, 1987), and social group status (Hollingshead, 1996). The following studies will discuss these theories and corresponding empirical support in the literature. Based on the review of the literature, I proposed hypotheses favoring the explanation that communication patterns can be accounted for by social group membership and its associated status in specific group contexts. That is, when individuals interact, they communicate both verbal and non-verbal information that is reflective of the social group and social status of all interaction partners in that situation. For example, a woman may interact differently with male colleagues in a male-dominated team than in a female-dominated team. Her change in communication style may be the result of a change in actual or perceived group status relative to her interaction partner across situations.

To examine effects of partner gender on communication behavior, we must compare the communication patterns of women with other women (presumably equal-status partners) to patterns of women with men (unequal-status partners). Then, I need to test whether that pattern

is influenced by the numerical representation of men and women in a group context, thus changing whether women are in the majority or minority status in the group. The proposed study is two-fold. The first is continuation of a previous data collection in which interactions between same-gender and mixed-gender partners were video recorded. The second is a lab study that brought female participants into a group setting, manipulating the male-to-female ratio in work groups. Together, these studies should bring insight into four basic research questions:

1. Do men and women differ in nonverbal communication patterns?
2. Do men and women change their nonverbal behaviors based on the gender of their interaction partner?
3. If differences exist due to the gender of partners, do men and women adjust their nonverbal behaviors equally? That is, does the change in women's behaviors between male and female partners match the change in men?
4. Do the communication patterns of men and women differ based on the gender composition of the surrounding group members?

Gender Differences in Communication Style

The study of gender differences in social behaviors is not a new topic in psychology. Some of the earlier and more groundbreaking theories can be traced back to Maccoby and Jacklin's *The Psychology of Sex Differences* from 1974. In their observation-based analysis, the authors concluded that there were both social and biological reasons for the personality and behavioral differences they viewed between men and women. Importantly, the authors note that these behavioral differences are greater within groups (among women and among men) than

between gender groups. However, there are enough differences on average across groups for Maccoby and Jacklin to spark research in this area. They were among the first to quantify the belief that men were more dominant and aggressive than women, while women were higher in warmth, acceptance, and anxiousness. A later study by Feingold (1994) confirmed many of these and other findings of previous studies. Through Feingold's use of meta-analysis, he found that in U.S. samples, male participants were on average higher in assertiveness and self-esteem overall compared to women. Women, meanwhile, had higher average levels of extraversion, trust, nurturance, and general anxiety.

Gender differences in social personality traits and behavior have been attributed to a number of causes. For instance, social behavior has shown to be rooted in lasting, inherent, biological sources. Aggression, dominance, and nurturance in particular, have been frequently attributed to evolutionary causes. Evolutionary psychology has long since posited that reproductive fitness encouraged the development of aggression in men and nurturing behaviors in women (Archer, 1996). These highly social personality traits have been theorized to be the result of differential hormone levels of men and women, as well as chromosomal differences in susceptibility to anxiety, depression, and neuroticism (Nolen-Hoeksema, 1987).

A more recent study by Case and Oetama-Paul (2015) also posits a biopsychosocial framework in which social interactions are mediated by men and women's differences in brain structure, function, and chemistry. The authors argue that certain sex-based brain differences are responsible for gendered communication. For example, the ventral frontal cortex—whose size is positively correlated with interpersonal awareness, attribution of intention, and the perception of anger—is proportionally larger in women than in men. Functionally, women's brains devote areas on both left and right hemispheres for verbal abilities, while men use almost

exclusively the left hemisphere for this purpose. Testosterone and oxytocin also increase competitiveness and affiliative behaviors respectively, and are found differentially in men's and women's brains.

Taken together, the evolutionary and biopsychosocial models might suggest stable differences between men and women in social traits and behavior. However, previous studies summarized in meta-analysis have been unable to find gender differences in social behavior that are both stable and invariable across contexts. Eagly and Johnson (1990) for example, found very little difference between men and women in demonstrating interpersonal- versus task-oriented leadership styles, which derive from agentic and communal behavior ($d = 0.03$). In their study of leadership styles, the authors found that research conducted in organizational settings produced fewer gender stereotypic behaviors than did research conducted in laboratory settings. According to their reasoning, organizational roles and settings may by nature constrain the display of gender stereotypic behavior. This calls into question purely biological causation theories, and creates space for more socially-based explanations.

Communication Patterns and Socialization

To address the variability in gender differences, some researchers have instead turned to social explanations for differences in social behavior and personality. Eagly (1987) proposed a social role model that established a theoretical basis for gender differences in social behavior. Eagly's theory states that both men and women are influenced by and behave in ways they have been socialized to believe are appropriate for their gender. In other words, socialization leads to the formation of gender-congruent beliefs. This socialization process occurs at the societal level over millennia and reflects the historical division of labor between men and women. In the

Western world, men are typically socialized to favor traits that would grant them success in work outside the home (such as agency, assertiveness, and independence). Women, on the other hand, are often socialized to display communal traits vital to success within the home (such as friendliness, selflessness, and expressivity; Eagly & Wood, 1991).

Evidence of early socialization can be found in the communication patterns of parents and children. A meta-analysis by Leaper, Anderson, and Sanders (1998) found that mothers spoke more frequently and used more supportive language with their children than did fathers. Regardless of child sex, fathers used more informative and directive language with their children. Mothers' language patterns were further differentiated by the sex of their child. Mothers spoke more often with, and more supportively to, daughters rather than sons. Even at very early ages, we can see that children are socialized into either highly interpersonal roles (daughters) or more independent roles (sons).

The gender-specific socialization process is also maintained as social interaction partners reinforce gender-specific traits and behaviors among adults. Based on earlier evidence by Fiske and Neuberg (1989), individuals tend to interact with partners differently based on partners' social group membership. According to the continuum model of impression formation (Fiske, Lin, & Neuberg, 1999), when we interact with others, we first categorize them based on salient features. Some features take precedence (e.g., gender), are categorized automatically, and take a central role in our interactions. Thus, individuals may reinforce gender-specific behavior during interaction by focusing on the salient gender-specific features of their partners.

Research suggests that gender-specific expectations of social partners might have important impacts on men and women's behaviors in group settings. In a laboratory study, women displayed more interpersonally oriented and democratic leadership styles than did men.

In a later meta-analysis (Eagly & Karau; 1991), they found that, although men and women were both capable of emerging as leaders in experimental group settings, their type of leadership was influenced by the situation from which it arose. In short-term groups requiring little social interaction, men emerged as leaders more often than women. However, women were more likely than men to emerge as leaders when the situation required complex social interaction. Thus, we see that situational context, in addition to gender expectations, might play a deciding role in the social behaviors displayed by men and women.

Recent literature has also explored the descriptive and prescriptive nature of gender stereotypes that might be reinforced particularly in work-related contexts and reinforce stereotype-congruent behavior among men and women. Stereotypes are not only socially constructed labels used to describe men and women, but they also serve as norms that define suitable behavioral patterns for men and women (Rudman & Glick, 2001). Descriptive and prescriptive stereotypes often overlap, making stereotypically feminine or masculine traits a part of the expected and valued behaviors for women and men. Moreover, prescriptive stereotypes also create a set of behaviors that are unexpected and punished. For example, behaviors that are typically attributed to gender are separate and distinct, such that women are disparaged when displaying masculine behaviors.

Heilman, Wallen, Fuchs, and Tamkins (2004) investigated gender-related descriptive and prescriptive stereotypes within the context of job performance. They found that when women were described as being successful in typically masculine-typed domains, they were considered far less likeable than were men. Additionally, successful women were rated as less interpersonally skilled—and uncivil—than when women were not explicitly described as successful in their male-typed field. Related research showed that women in either male-typed

or male-dominated fields such as management (Schein, 1973) often have their work discredited, devalued or find themselves personally derogated due to their perceived lack of fit with the job (Heilman, 2001). These findings suggest that women are penalized when not acting according to the prescriptive gender norm in the workplace. According to Snodgrass (1985), these negative consequences of behaving counter-stereotypically may serve as behavioral motivation for women; when their group membership (female) is made salient, women may behave in ways that are more congruent with their social group stereotypes in order to protect their own interests. These situations effectively socialize women to behavior in stereotype-consistent ways in situations where gender is salient.

One situational feature that has been shown to vary the perceived salience of group membership is the representation of social groups in a given situation (Randel, 2002; Stryker, 1968). Women might behave in more stereotype-consistent ways when the relative representation of women to men makes gender more salient. The next section will identify research connecting gender representation to gender-specific communication behaviors in group contexts.

Gender Composition as a Situational Factor in Communication

Research points to the gender composition of a situation as a key factor that might vary the degree of gender differences observed in social behavior. Anderson and Blanchard (1982) found that in small, mixed-gender groups, men exhibited higher task-oriented behavior, while women exhibited more socio-emotional behavior. These findings were corroborated in a later study by Wood and Karten (1986). In their study, the authors observed the behaviors of small, mixed-gender groups of four people engaged in a discussion task. They found that men more

often exhibited task-oriented behavior than women, such as providing pertinent information or opinions. Women meanwhile were more often engaged in more pro-social behaviors than men, such as friendly socializing and providing support to the ideas of others.

Importantly, it is vital to establish whether the difference in behaviors we see between men and women are particular to mixed-gender interactions. Classic theories on intergroup relations in social psychology might suggest that communication patterns differ depending on the presence of any type of in-group and out-group members (i.e., gender or other social identities). Self-categorization theory (Turner et al., 1987) states that when social identity is salient (such as in an intergroup interaction), people view themselves as representative of a social group, which in turn drives their behavior and communication pattern. In terms of gender, there is evidence to suggest that both men and women hold similar gender stereotypes and often act according to gender-congruent stereotypes in mixed-gender dyads but not in same-gender dyads (Hollingshead & Fraidin, 2003).

Similarly, numeric fluctuations in gender composition have been linked to gender identity salience in ad hoc groups similar to the groups in the proposed studies. Namely, being a part of the minority gender group increases gender salience (Cota & Dion, 1986). Frey and Tropp (2006) argue that these group context effects are activated when an individual believes they hold minority group status and are being viewed by others through this lens. From this we can infer that women in male-dominated contexts experience heightened gender salience, possibly heightening their awareness of gender-based biased perceptions. Similar to past research in mixed-gender dyads (Hollingshead & Fraidin, 2003), I expect mixed-gender groups with heightened gender salience will lead to behavior that conforms to gender stereotypes. I

expect these effects to be stronger when the group representation puts women in the numerical minority compared to mixed groups in which women are in the majority.

Gender, Communication Patterns, and Status

One aspect of intergroup relations that is often suggested to determine social interactions is the relative status of social identities. Snodgrass (1985) suggested that women not only act according to gender-congruent stereotypes in mixed-gender contexts, but that their gender-congruent stereotypes are linked to—or originate from—the historically low status and power of women. Research by Fiske (1993) and Goodwin, Gubin, Fiske, and Yzerbyt, (2000) showed that when there is a power differential between interacting partners, the lower-status individuals are often the more attentive and empathically accurate partner. Gender differences in the extent to which communicators adjust their behavior in the presence of an out-group might depend on the actual or perceived relative status of group members in that particular situation. Even if gender differences in communication are specific to mixed-gender interactions, the degree of difference might depend on the relative status of the genders during a group interaction. The relative representation of each gender in a given group may serve as a cue for the relative status and power in that interaction such that the numerical minority group experiences lower status in that particular situation.

Some research has demonstrated the impact that situational status can have on gender differences in group communication. Although the Wood and Karten (1986) study found gender differences in communication behavior (described above), they also manipulated a key variable that accounts for an alternate source of gender differences. In some group interactions, Wood and Karten provided false feedback to participants to have them believe that they were

either superior or inferior to the group in intellect or moral aptitude. The manipulation of status relative to interaction partners actually reversed patterns they had previously found.

Participants given high-status feedback actually exhibited more task-oriented behaviors and less social behaviors than did low-status participants. Any previous gender differences in interaction style were no longer present after situational status differences were considered.

This gives way to an alternate explanation for the observed gender differences in social interactions. Rather than the result of biology or socialization alone, social interaction patterns can be predicted by the social status of interaction partners, a feature that can be changed or manipulated in social situations. Therefore, individuals might hold similar gender stereotypes and interact with partners based on those stereotypes—chief among these is gender. However, relative status in a given situation might be the key factor that determines whether an individual uses stereotypes during the interaction. The linchpin in this theory can be found in Snodgrass' (1985) analysis of status and interpersonal sensitivity. In a study of leader/subordinate interactions, Snodgrass found that the subordinate partner in a dyadic interaction exhibited higher interpersonal sensitivity, regardless of the subordinate partner's gender. In a mixed-gender interaction, the female partner might be considered "subordinate" to the male partner unless some manipulation or intervention explicitly changes the status of the female partner. Thus, the situational status may override the general social status of women. This finding was replicated in other research showing powerless members displaying an increased attentiveness to the powerful members of the interaction in mixed-power groups and dyads (Fiske, 1993). This attention gives low-status individuals an advantage in predicting the behaviors of their high-status interaction partners (Goodwin et al. 2000).

If we accept that women have held historically lower social status relative to men in the Western world, the submissive social behaviors often demonstrated by women in mixed-gender contexts could be driven by the status difference. As Snodgrass found in her 1985 study, “when leader/subordinate role was crossed with gender, women showed no advantage over men in sensitivity to others... ‘women’s intuition’ would perhaps be more accurately referred to as ‘subordinate’s intuition.’” (p. 152). A critical empirical question in this study is whether gender composition of a group can determine relative status and potentially dilute the expected gender differences in mixed-gender interactions.

Important to this project, the relative situational status of group members is expected to influence communication behaviors during mixed-sex group situations. A study by Dovidio et al. (1988) observed high status and low status behaviors in mixed-gender dyadic interactions. In their study, high and low status behaviors were quantified as the percentage of time the subject spent looking directly at their partner while speaking and the percentage of time spent looking directly at their partner while listening. Status was manipulated in the form of expertise. Dyads were either instructed to discuss a topic within the male partner’s expertise, within the female’s expertise, or of no one’s expertise. As expected, the non-expert partner spent more time looking at their partner while listening than while speaking. However, they also found that the no expert condition closely resembled the male expert condition. When there was no expert in the discussion topic, women still spent more time looking while listening than while speaking—in percentages similar to the male expert condition. When no situational cues for relative status were present, gender acted as a proxy for status. I expect a similar pattern to emerge in the present study, such that women will function as lower status group

members than men unless a situational cue (high female representation) shifts more status to women in the group.

Hypotheses

Taken together, the summary of the literature on gender differences in social traits and behaviors seems to suggest that the historical differences in social behaviors of men and women are less stable than previously believed. Instead, social interactions depend heavily on the categorization of self, partner, and status. In fact, both men and women might exhibit changes in behavior dependent upon the gender and status of their interaction partner, particularly if relative status is indeed the key ingredient in mixed-gender contexts that yields gender differences in social behavior. However, whether those behavioral changes are equal in magnitude between men and women and across group compositions is an interesting and unexplored question. Given the previous theoretical models and research findings, I tested the following hypotheses in Study 1:

Hypothesis 1: Women will display more low-status communication behaviors than men, across interactions (stable gender differences).

Hypothesis 2: Men and women both will vary in communication behaviors dependent upon the gender of the interaction partner, such that women will display more low-status behaviors around men than around other women (a). Conversely, men will display more high-status behaviors around women than around other men (gender differences specific to mixed-gender situations (b)).

Hypothesis 3: Women's communication behaviors will fluctuate more (than men's), depending on the gender of their interaction partner.

Whereas Study 1 is able to test for the differences in high and low status behaviors of men and women, Study 2 is designed to manipulate group composition and measure the effect of representation as a social status cue on behavioral patterns in women. The representation of men and women in the ostensible work group will be manipulated in a laboratory study. Importantly, the representation of group members will create situations where the participant might experience being in the numerical majority or minority group, e.g., being in a mostly female or mostly male group. This experience is expected to influence perceived relative status (Cota & Dion, 1986). As such, we can predict that the low status of women taken for granted in Study 1 can be either exacerbated or mitigated by group gender composition in the second study. These findings, with the addition of a moderating variable, led to the following additional hypotheses for Study 2:

Hypothesis 4: Women will display fewer high status and more low status behaviors when they are in the minority gender group than in the majority gender group.

Hypothesis 5: Women will display fewer high status and more low status behaviors when they perceive women to be the lower status group relative to men.

Exploratory Research Question

Snodgrass (1985) found that in dyadic interactions, individuals in the subordinate role showed more interpersonal sensitivity than the leader, regardless of sex. This would imply that status and relative power supersede the effects of gender in mixed-gender interactions. However, Pichevin and Hurtig (1996) found that in mixed-gender groups, the group gender composition was more salient to women than to men. This finding questions the relative sensitivity of men versus women to group gender composition. Accordingly, I pose a further

exploratory question that will examine any differential effects of majority or minority group membership on gender in the Study 1 data.

Research Question: Do men adjust their behavior as much as women in response to gender composition of the group?

CHAPTER 2

METHOD

To test these hypotheses, I propose a two-part study. In the first study, archival data (video-recorded dyadic interactions) was used to establish any base rate differences in men and women's low-status and high-status behavioral patterns. Study 1 also tested for any changes in behaviors according to gender of an interaction partner. Although Study 1 recruited participants in groups of four, the interactions occurred in isolated dyads. Study 2 video-recorded participants while under the impression that they are interacting with, and contributing to the performance of a group on a brainstorming task. The gender composition of the ostensible group was manipulated by the researcher. Study 2 shed some light on changes in behavior among women according to group gender composition. This will effectively test for the effect of group status (whether the participant is in the gender majority or minority) as a moderator of gender differences in communication behavior.

Study 1

Participants

A total of 40 participants, ranging in age from 18-22 ($M = 19.1$, $SD = 1.06$) were recruited for this study. Participants arrived to the study room in groups of four. The total sample was evenly divided between male and female participants, and consisted of mostly non-

Hispanic White undergraduate students (75%). Previously recorded dyadic interactions among these participants will be coded for relative frequencies on a number of non-verbal behavioral cues.

Procedure

Participants were recruited through the psychology department participation pool at a large Midwestern university in 2006, and received course credit for their participation. After arriving to the experiment in groups of four and providing informed consent, subjects completed a general self-evaluation measure. Participants remained in one room with all group members present, but were split into dyads for 10-minute long dyadic interactions, such that each participant interacted with every other member of their group (see Table 1 for data structure). Every group of four participants remained in one room with two tables; at each table, two participants sat directly across from one another for their interaction. Participants were asked to get to know each other's personality characteristics without revealing personal identifying information (e.g., name). Participants completed both partner evaluations and meta-evaluations before and after their interaction. Dyadic interactions were coded for relative frequencies on a number of non-verbal behavioral cues.

Measures

All participant interactions were coded for nonverbal and non-content behavioral cues. Due to the limited interaction time (10 minutes), the amount of behaviors to be coded may be limited. However, previous research has found that group gender composition and gender identity are salient even in temporary ad hoc groups of university students. It is reasonable then

to expect that gendered non-verbal communication styles can be detected in the current groups (Cota & Dion, 1986).

Table 1

Summary of Intercorrelations, Means, and Standard Deviations for Low Status, High Status, and Anxiety Behaviors

Measure	M	SD	1	2	3
1. Low status behaviors	3.12	0.51	0.34	0.31**	-0.34**
2. High status behaviors	3.13	0.48	0.31**	0.29	-0.45**
3. Anxiety behaviors	3.98	0.54	-0.34**	-0.45**	0.71

Note. ** $p < .01$.

Data Coding

Due to the behavioral nature of these studies, two raters viewed and coded all interactions. For each coded outcome, raters were asked how frequently they observed the participant exhibiting the behavior, on a scale from 1 *almost never* to 5 *almost always*. Accordingly, preliminary analyses were aimed at establishing inter-rater reliability. Intraclass correlation analyses were conducted to establish consistency scores between raters. The goal of the coding is to establish relative frequency and not absolute frequency of behaviors, so a reliability analysis is needed that will measure the correlation—and not strict agreement—between raters' scores.

Speech Fillers

Speech fillers refer to audible utterances meant to fill pauses during speech e.g., *um*, *er*, *uh*. These fillers are typically linked to anxiety (Rochester, 1973), but have been more specifically linked to self-conscious anxiety (Christenfeld & Creager, 1996). That is, anxiety alone is not predicted to increase the frequency of filler use. Rather, self-consciousness that would cause one to be more vigilant over their speech would produce more frequent speech fillers. In line with power dynamics research (Fragale, 2006), speech fillers serve as indicators of powerless speech, which I predict would be most frequent in the speech of lower-status interaction partners, when there is a mixed-gender pairing.

Nonverbal Vocalizations

Much like speech fillers, nonverbal vocalizations have been found to indicate anxiety and hesitation, especially in decision-making contexts (Schachter, Christenfeld, Ravina, & Bilous, 1991). That is, nonverbal vocalizations such as throat-clearing or sighing before speaking are a sign of prolonged deliberation. Blascovich, Wyer, Swart, and Kibler (1997) found that subjects more often displayed nonverbal vocalizations when delaying a response due to uncertainty. I predict that individuals unsure of their standing in the dyadic relationship (i.e., lower-status individuals) will exhibit more nonverbal vocalizations than their higher-status counterparts.

Verbal Feedback

Verbal feedback, or backchanneling, consists of phrases or simple statements used by the non-speaking partner to signal agreement or understanding with the content of their partner's speech e.g., *right*, *mhmm*, *uh-huh*. Previous research has yielded inconclusive gender differences in the use of verbal feedback. Initial studies found that women use backchanneling more often than men across situations (Roger & Nesshoever, 1987). However, more recent studies have found that status is a more accurate predictor of backchanneling and verbal support (Johnson, 1994; Dixon & Foster, 1998; Helwig-Larsen, Cunningham, Carrico, & Pergram, 2004). In keeping with these more recent findings, I predict that the lower-status interaction partner (women) will more frequently use backchanneling in conversation than will men.

Interruptions

Unlike the previous three behaviors, interruptions are used during discussion to exert control over the interaction (Ruscher, 2001). Interruptions successfully establish or maintain higher status through the implication that the interrupter has a more pressing contribution than the interrupted. Given previous research showing that men are more likely to interrupt than women (McMillan, Clifton, McGrath, & Gale, 1977), and women are more frequently interrupted by both genders than are men (Werner-Wilson, Price, Zimmerman, & Murphy, 1997),

Physical Immediacy Behaviors

Immediacy behaviors are physical cues that signal a person's self-perceived dominance in social interactions (Morand, 2000). Unlike the previous behaviors, immediacy behaviors (i.g., decreased interpersonal distance, forward-leaning, smiling, nodding, and body orientation) could indicate both liking and status (Ruscher, 2001). Based on previous research on in-group bias and intergroup interactions (Brewer, 2007; Word, Zanna, & Cooper, 1974), it is reasonable to predict that same-gender, high-status interactions will produce more immediacy behaviors than mixed-gender or low-status interactions.

Anxiety-Related Behaviors

To control for the influence of social unease, raters will also code for anxiety-related behaviors taken from a measure by Budnick, Kowal, and Santuzzi (2014). Each rater will judge on a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*) the extent to which each participant exhibited the following behaviors: fidgeting avoiding eye-contact, appearing to conceal their true opinions, smile a lot, talk a lot, and had an easy time contributing to the conversation (pp. 5). Smiling a lot, talking a lot, and appearing at ease in the conversation are reverse coded for anxiety.

Data Analysis

Male and female participants' behaviors were analyzed for mean differences across gender of partners. Because the dyadic interactions are nested within groups, I utilized Kenny and Garcia's (2012) Group Actor-Partner Interdependence Model (GAPIM). This model

accounts for the effects of nesting of dyads in groups as well as surrounding group composition effects (although the group size for the current data set will not allow for full tests of the latter). For the dyad-level outcomes I am interested in, the GAPIM model will estimate the participant's gender, the partner's gender, and the participant's similarity to the partner as predictors of communication behavior.

Preliminary Analyses

A total of 44 undergraduate students (11 groups, 120 dyadic interactions) were included in analyses. These participants were nearly evenly divided by gender (male, 52.5%; female 47.5%), ranged in age from 18-22 ($M=19.1$, $SD=1.06$), and consisted of mostly non-Hispanic White students (75%). Subjects arrived and participated in the study in groups of four, with a group gender composition breakdown as follows: one group was mostly male, two groups had equal gender distribution, four groups were mostly female, and three groups were entirely female. No groups were entirely male. Though subject gender was nearly even, the gender compositions were not balanced across groups. This, plus a modest group size, leaves the study vulnerable to being underpowered for group level effects. Women's responses in male-dominated contexts were the least represented among conditions. There were two groups with women in male-majority contexts. Furthermore, three subject outcomes were coded by human raters. These outcomes have generally high reliability across raters, but rather low psychometric reliability as a single scale (Table 1). For each coded outcome, human judges rated how frequently they observed the participant exhibiting the behavior, on a scale from 1 *almost never* to 5 *almost always*.

Intraclass correlation analyses were conducted on SPSS, using the Two-Way Random model, testing for consistency. This model was chosen because it accounts for rater variance across raters, and assumes that the two raters are chosen as a sample of all possible raters. Additionally, due to the nature of the data (ratings, not counts), consistency across raters was prioritized above agreement between raters. Analyses revealed very good inter-rater reliability for low status behaviors (ICC(2,0.85)), and high status behaviors (ICC(2,0.84)), and adequate consistency for anxiety behaviors (ICC(2,0.62)), according to guidelines set by Cicchetti (1994). The goal of the coding is to establish relative frequency and not absolute frequency of behaviors, so a reliability analysis is needed that will measure the correlation—and not strict agreement—between raters' scores.

The anxiety behaviors measure performed well for both rater consistency and internal scale consistency (Table 1). However, both low status and high status behaviors displayed low internal consistency ($\alpha=0.34$ and $\alpha=0.29$, respectively) despite their high rater consistency. A principal components factor analysis with Varimax rotation and constrained to two extraction factors revealed modest factorability (KMO=0.50; Bartlett's test of sphericity ($\chi^2(28)=82.57, p < .01$)). The two-factor solution accounted for 39.08% of the variance in the data. The first factor had an eigenvalue of 1.80 and accounted for 22.54% of the total variance. A second factor had an eigenvalue of 1.32 and accounted for 16.54% of the total variance. The rotated component matrix revealed that two of the three low status behaviors (speech fillers and nonverbal cues) loaded on a single factor (F1), and four of the five high status behaviors (laughing, nodding, forward leaning, direct body orientation) loaded onto a single factor (F2). This left a single low status behavior (verbal feedback) and a single high status behavior (interrupting) loading on factor opposite what was predicted.

Closer examination of each scale variable revealed a high level of skew for four variables: verbal feedback (-1.22), nonverbal behaviors (1.48), interruptions (1.71), and direct body orientation (-1.98; SE = .23). These four variables were transformed according to their skew type, and new aggregate outcomes were computed. Due to their lack of fit within their predicted factors, outcomes will be presented both individually and within their predicted scale (i.e., high status or low status behavior). It is important to interpret these scales and the behaviors contained therein as summative in nature. That is, each high status or low status signifying behavior is not conceptually a proxy for any other behavior in that scale. Rather, a high score or low score on each scale simply means that the subject displayed more kinds of high status or low status behaviors.

Results

In line with previous research on gender differences in communication patterns, it was predicted that there will be a main effect of gender such that men will display more high-status and fewer low-status behaviors than women (H₁). Additionally, I predicted a significant main effect of situation, such that same-gender interactions will produce different communication behaviors than will mixed-gender interactions. Furthermore, I expected an interaction between gender and situation, such that women will display more low-status behaviors in a mixed-gender interaction than in a same-gender interaction (H₂). There are no predictions for the change in men's behaviors from same-gender to mixed-gender interactions. Lastly, I predicted that women's behaviors will change more than men's behaviors depending upon the composition of the group (H₃) Although there is no clear prediction for how men respond to

gender composition, I tested whether participant gender moderates the effect of numerical representation (RQ).

Due to the dyadic partners nested within groups, Kenny and Garcia's (2012) Group Actor-Partner Interdependence Model (GAPIM) was used to determine numerous effects of the group gender composition on participant status behaviors. This model accounts for the effects of nesting of dyads in groups as well as surrounding group composition effects (although the group size in the current data set will not allow for reliable tests of the latter). For the dyad-level outcomes I am interested in, the GAPIM (complete model) will estimate the effects of the participant's gender (actor effect), the partner's gender (partner effect), and the participant's similarity to the partner (actor x partner interaction) to stated hypotheses. To explore the Research Question, the effect of the group composition (others effect) and the similarity of the participant to others in the group (actor x others effect) were added as predictors of communication behavior. This mixed-model was run in SAS 9.3, with aid of publicly available syntax (Garcia, Meagher, & Kenny, 2015).

Results find that there are no significant main effects or interactions between predictors on participants' low status behaviors (Table 2). Thus, Hypotheses 1, 2, and 3 are unsupported.

Exploratory Analyses

Turning to exploratory analyses, there was a main effect of Others on the composite high status behaviors scale ($b = -0.41$, $t(116) = -3.04$, $p = 0.004$), such that the effect of Others was negatively related to high status behaviors. In other words, as the proportion of women in the surrounding group increased, participant displays of high status behaviors decreased. Though interesting, this result was not hypothesized. Lastly, there was a significant main effect

Table 2

Results of Mixed-Model GAPIM-I Analyses on Individual and Aggregate Outcomes

	Main effects				Interaction effects		
	Intercept	Actor	Partner	Others	A*P	A*O	P*O
Anxiety behaviors	2.57**	0.49*	0.15	0.78	-0.07	-0.41	0.22
Low status	1.06**	0.08	0.06	0.04	-0.04	-0.17	-0.14
Speech fillers	2.95**	0.20	0.12	0.01	-0.12	-0.56	-0.37
Verbal feedback	0.97	0.05	0.11	0.13	-0.01	-0.02	-0.14
Nonverbals	0.20*	0.01	-0.01	0.02	<0.01	0.02	0.03
High status	1.81**	-0.08	-0.04	-0.41*	-0.01	-0.12	-0.03
Laughing	3.51**	0.01	0.07	-1.00	-0.03	-0.53	-0.56
Nodding	4.14**	-0.60*	-0.37	-0.47	<-0.01	0.52	0.53
Interruptions	0.09	0.02	-0.03	<0.01	-0.01	-0.05	0.04
Forward lean	2.96**	-0.02	0.10	-1.27*	<0.01	-0.45	-0.29
Orientation	<-0.01	0.02	-0.03	0.26*	-0.02	-0.09	0.11
Eye contact	0.22**	0.09*	-0.02	0.01	<0.01	-0.07	0.09

Note: Women were coded as -1, men were coded as 1.

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

of subject gender on anxiety behaviors ($b = 0.49$, $t(116) = 2.53$, $p = 0.01$), such that men were more likely to display anxiety behaviors. Additionally, there was no evidence to suggest that participant gender moderated the effect of the group gender distribution (Table 2).

Additional exploratory analyses examined the hypotheses and research questions for individual behaviors, rather than sets of high status and low status patterns. Individually, there were significant main effects for a few high status behaviors. There was a main effect of Actor (participant gender) on both nodding ($b = -0.60$, $t(116) = -2.45$, $p = 0.02$) and eye contact ($b = 0.09$, $t(116) = 2.28$, $p = 0.03$). This would mean that women (coded -1) displayed more nodding and less direct eye contact than men. This is somewhat in accordance with what was hypothesized. As a high status behavior, women were predicted to display less direct eye contact than men overall. However, nodding was also considered a high status behavior and

women were hypothesized to display this behavior less than men. This outcome could be explained by research in physical immediacy behaviors suggesting that nodding is both a high status signifier and an indicator of interpersonal liking (Ruscher, 2001). Women, therefore, may be more prone to displaying interpersonal liking behavior due to the expectation to be the more social and supportive gender (Eagly, 1987; Eagly & Wood, 1991).

There were also main effects of Others on forward leaning ($b = -1.27$, $t(116) = -2.12$, $p = 0.05$) and orientation ($b = 0.26$, $t(116) = 2.85$, $p = 0.01$). These results would suggest that, as the proportion of women in a group grew, the displays of forward leaning decreased, while direct body orientation increased. This finding was not hypothesized, though is somewhat related to Hypothesis 3, that gendered communication patterns would be greater in mixed-gender groups. Though some behaviors did depend on group composition, this did not interact with participant gender. This would mean that two high status behaviors (leaning and orientation) depended not on actor or partner gender, but instead on the composition of the group. Taken together, there was no direct evidence for any of the three stated hypotheses for Study 1. However, exploratory findings may inform future investigations.

Discussion

Study 1 explored the differences in nonverbal communication patterns among men and women in same-gender and mixed-gender dyadic interactions. To this end, the data do not support the general hypotheses that partner gender interacted with subject or partner gender to influence high status or low status behaviors. There were some interesting main effects of gender on specific behaviors that were both hypothesized (eye contact), and counter to

hypotheses (nodding). These findings, to some extent, are explained by past research in interpersonal liking which might lead future research to reconsider what behaviors function as high or low status in various situations.

Also, the significant effect of Others (proportion of women in each group) is interesting and merits further investigation at a group level. High status and low status behaviors were significantly predicted by group composition but not by the interaction between group and individual, or group and partner. It may be possible then, that gendered communication patterns would could be brought about by a simultaneous group interaction rather than one-on-one interactions. Past research has found success with both dyadic and group-level interactions (Wood & Karten, 1986; Eagly & Karau, 1991; Randel, 2002), however, the nature of the dyadic interactions in the current study (ambiguous, open-ended interactions) may not have been a powerful enough situation to stimulate gendered communication patterns. Study 2 is designed to tackle this issue by measuring the predicted experiences from Study 1 in an anticipated simultaneous group setting that varies by gender composition. With the introduction of more (hypothetical) interaction partners, we can test some of the key hypotheses in Study 1, as well as examine effects of group gender composition (and by proxy, group status) on nonverbal behaviors among women.

Study 2

Participants

One hundred nineteen female undergraduate students from the psychology department participation pool were recruited for Study 2 and granted course credit for their participation.

Using Eagly and Karau's (1991) meta-analysis findings on the emergence of male and female leaders (as a proxy for agentic and communal behavioral displays) in groups, G*Power software was used to calculate a proper sample size for the second study. With a $d = 0.32$ effect size, using 80% desired power and .05 alpha, Study 2 required a minimum of 112 participants.

Procedure

Study 2 was conducted in a lab setting. Upon arriving to the experiment, participants were guided into a room and instructed to join a virtual group on a lab computer. After providing informed consent, participants completed the preliminary measures, followed by a filler task to distract them from the content of those measures. The filler task consisted of a brainstorming "practice" task. This task was unrelated to either the preliminary measures or the main study task. An example filler problem can be found in Appendix A.

Next, participants engaged in a computer-based task on Qualtrics survey software. The survey program presented to participants their "group," which included the names and written contributions of three other fake members (see Appendix B). The contributions are the group members' supposed individual responses to a prompt used for a previous study, and will be experimenter-generated:

"The University is looking for new ways to advertise to prospective students. To do this, groups of current students are being formed to design some new marketing strategies for the university. Your brainstorming question is: What are some key characteristics of NIU that should be advertised to prospective students?"

The contributions generated for this study were pretested to ensure that every group member's response is equal in quality and free of any gendered communication. Participants were

randomly assigned to one of four conditions, according to group gender composition: all female, two females and one male, one female and two males, or all males. Gender of their group members was indicated by first names only, and taken from a previous study. These names were pretested as gender-specific and racially neutral by a sample of 28 undergraduate students (Appendix B). Male group members were named Anthony, Michael, and David; female group members will be called Jessica, Angela, and Samantha.

Participants were guided through each group member's recorded contribution on a brainstorming prompt. The content of the contributions was first pre-tested: five possible group contributions were generated for pre-testing. These were presented in survey form and administered to a sample of 50 students from the general student population through the SONA system. Subjects were asked to read each speech and rate them on a number of subjective scales, including: the perceived quality of the contribution, politeness, indirect speech, confidence, and direct speech. Of the five pretest items, three were chosen that are most equal in ratings. The five contributions can be found in Appendix B.

Then, participants were instructed to record their own contribution for the group. Visual recordings of each participant were collected. Participants were instructed to turn toward the camera and voice their contributions loudly and clearly, so that their responses can be transcribed and delivered to the other group members. These videos were later coded for low status and high status behaviors (see below). The verbal content of their responses were also coded for gendered verbal communication patterns. Finally, participants responded to a three item self-report scale of gender identity salience (described below).

Self-Reported Covariates

Preliminary Measures

Self-report measures were included in Study 2 to control for possible covariates.

Individual differences in self-monitoring and personality have the potential to moderate the relationship between social status and the outcomes of interest. These measures were included and completed by participants before the filler task.

Self-monitoring. Self-monitoring, as outlined by Snyder (1974), is the deliberate observation and control of one's self-presentation. Self-monitoring is a social construct, in that it emerges during interactions with others, and presents a potential covariate to this study. Following Briggs, Cheek, and Buss' (1980) revised three-factor model of self-monitoring, participants provided their self-ratings on extraversion, acting, and other-directedness in a 20-item true/false scale.

Personality. Two International Personality Item Pool (IPIP) subscales were collected to explain other variance not related to our predictor. In particular, extraversion and agreeableness were included and treated as covariates, as they are the most likely of the Big Five personality factors to affect our outcome measures. Many facets of extraversion, such as friendliness and assertiveness, are socially driven, and thus have an effect on interpersonal interactions. Further, a study by Santuzzi (2015) found that agreeableness was significantly and positively related to accurate meta-perceptions; thus we will control for the influence of personality on interaction behaviors. The extraversion ($\alpha = .87$) and agreeableness subscales ($\alpha = .82$) each comprise 10 items with response scales ranging from 1=*Very Inaccurate* to 5=*Very Accurate*.

Post-Manipulation Measures

Due to the fact that this study does not involve a dynamic social interaction with group members, self-reported psychological experiences of high status and low status experiences were collected in addition to collecting the behavioral data.

Self-perceptions of performance. A measure of self-reported performance was also used to gauge participants' self-perceptions of their contributions and status within the group. Participants responded to a three-factor measure of competence, dominance, and friendliness, adapted from Rind and Kipnis (1999). The measure comprises seven 7-point bipolar scales anchored by: *intelligent—not intelligent*, *competent—not competent*, *thoughtful—not thoughtful*, *follower—leader*, *dominant—submissive*, *unfriendly—friendly*, and *pleasant—unpleasant*. The first factor, cognitive competence, is assessed by combining participant ratings of their own intelligence, competence, and thoughtfulness ($\alpha=.77$). The dominance factor is created by combining participants' reactions to how dominant and how much of a leader they were ($\alpha=.67$). The friendliness factor is measured by the combination of friendliness and pleasantness scores ($\alpha=.86$).

State anxiety. Participant anxiety was measured as a covariate in both observational (as described above) and self-report form. The self-report measure is a short form measure of state anxiety adapted by Marteau and Bekker (1992) from the original Spielberger State-Trait Anxiety Inventory (STAI). The Marteau and Bekker adaptation ($\alpha=.82$) asks subjects to rate their agreement with six anxiety-related statements on a scale from 1 *not at all* to 4 *very much*.

Gender identity salience. Participants may be more or less sensitive to the gender distribution of their group. Gender identity salience was therefore included and analyzed as a

possible moderator. Participants responded to a three-item self-report scale (Randel, 2002) designed to measure cognitive salience ($\alpha=.74$). Subjects responded using a 1 (strongly disagree) to 5 (strongly agree) Likert scale to the questions, ‘When people ask me about who is in a group, I initially think of describing group members in terms of gender composition (e.g., two women and three men),’ ‘It is not intentional, but when I think of my fellow group members, what comes to mind initially is the names of the women and the names of the men,’ and ‘Even though I don’t mean to, I think of gender as the most prominent characteristic of my fellow group members.’

Self-Reported Predictor

Self-reported status. A validity check was included to test whether group gender composition does indeed manipulate participants’ perceptions of status. These items also serve as a psychological proxy variable for behaviors coded in Study 1. Subjects responded to two sets of two questions created specifically for this study. They were asked, “Rate [your gender group’s] status relative to [the other group],” and “Rate [your gender group’s] power relative to [the other group].” These items will use a 5-point rating scale anchored at *none, less than, equal to, more than, all or absolute*. The second two items asked participants to respond on a 5-point Likert scale from *strongly disagree* to *strongly agree* on the following questions: “I felt I had high status in the group,” and “I felt like I had power in the group.”

Data Coding

The coding schemes for status and anxiety-related behaviors from Study 1 were used to code the video-recorded contributions from participants. However, because there is no direct

interaction between participants and group members, some of the previously coded behaviors had low frequencies Study 2. To circumvent this issue, two additional measures were added to bolster dependent observations. Speech patterns were observed and coded on the same rating scale as non-verbal behaviors--for each outcome, raters were asked the extent to which they observed the participant exhibiting the behavior, on a scale from 1 *almost never* to 5 *almost always*. These were coded from the verbal content of participants' contributions:

Affiliative Speech

Affiliative speech is relational in nature, with a focus on empathy and rapport building. These speech indicators are most often used by women and are associated with democratic, person-oriented leadership styles (Case & Oetama-Paul, 2015; Holmes & Marra, 2004). To this end, each participant's speech was coded for frequency of the following qualities: politeness, support of others' contributions, indirect speech, and the extent to which they build upon the ideas of other group members.

Assertive Speech

Assertive speech patterns are more task- than people-oriented, with a focus on competitiveness and status. This speech style is often exhibited by men and is associated with controlling or commanding leadership styles (Case & Oetama-Paul, 2015; Ladegaard, 2011). Coders rated each participant's speech frequency on the following assertive speech indicators: confidence, direct speech, critique of others' contributions, and appearing as though they are trying to "one-up" the other participants.

Analyses

The appropriate number of coding raters was established using a Generalizability Theory approach based on inter-rater reliability estimates computed in Study 1. Unlike the previous study, Study 2 relies on a four-level gender composition predictor: all female, mostly female, mostly male, and all male. This takes the results of Study 1 a step further, by establishing group status rather than taking for granted that women are cognizant of their gender's societal status. A One-way ANOVA was conducted to test for the effects of group gender composition on women's high and low status behaviors and associated psychological outcomes (H₄). A regression analysis will test for the effects of relative status (H₅) on women's high and low status behaviors across conditions for the same outcomes.

Data Screening

Electronic groups were randomly assigned and kept relatively even across conditions: all women, 26.1%; mostly women, 23.5%; mostly men, 25.2%; all men, 25.2%. A manipulation check, which asked participants to report the number of men and number of women in their group showed a high failure rate when comparing subject responses to exact group breakdown (>50%). Upon further investigation, the researcher believes that this may be due to lack of clarity in the question: participants were asked to respond with a numbered dropdown box for both men and women—this may have led some participants to report the presence of an extra member, even in the all-male and all-female conditions. Another analysis instead grouped participants' responses and actual group into gender distribution categories:

mostly women, equal distribution, or mostly men. When comparing these responses, 89 subjects (74.8%) were able to correctly identify the gender breakdown of their group.

As with Study 1, human judges rated how frequently they observed the participant exhibiting each behavior (high status, low status, anxiety), on a scale from 1 *almost never* to 5 *almost always*. Intraclass correlation analyses were conducted on SPSS, using the Two-Way Random model, testing for consistency, due to the nature of the data (ratings, not counts). Analyses revealed good inter-rater reliability for low status behaviors (ICC(2,0.74)), and high status behaviors (ICC(2,0.72)), and adequate consistency for anxiety behaviors (ICC(2,0.68)). Due to the high, significant correlation between coded anxiety behaviors and high ($r = -0.80$), and a moderate correlation with low status ($r = 0.24$) outcomes, anxiety behaviors were treated as an additional and separate dependent variable instead of a covariate.

Two raters also rated the extent to which participants exhibited either affiliative speech or assertive speech. Again, an intraclass correlation analyses was conducted using the Two-Way Random model. This revealed good inter-rater reliability for affiliative speech (ICC(2,0.68)), and assertive speech (ICC(2,0.70)).

Results

Preliminary Analyses

Possible covariates were first examined in a correlation table with each outcome. Self-reported state anxiety was kept in analyses as a covariate due to its significant correlation with coded anxiety behaviors ($r = 0.26$). Self-perceptions of performance also remained due to its significant correlation with high status behaviors ($r = 0.22$) and anxiety behaviors ($r = -0.24$).

Remaining variables extraversion, agreeableness, self-monitoring, and gender identification did not significantly correlate with any outcome and were thus excluded from analyses.

Hypothesis Tests

I predicted that participants would display fewer high status, and more low status behaviors when they are in the group minority than in the group majority (H_4). Women were also expected to display fewer high status and more low status behaviors when they perceive their group status to be low relative to men (H_5).

To test Hypothesis 4, a one-way ANOVA was run to determine the differences in women's high status and low status behaviors, depending on the group to which they were randomly assigned. To this end, the four-category variable "group" was dichotomized into mostly or all women (majority group), mostly or all men (minority group). Dichotomization also mimics the way participants responded to the manipulation check—most were able to identify the correct proportion of women to men in their group, but few were able to provide an exact number of each group.

Women in the majority group did not display significantly different low status behaviors than did women in the minority group, $F(1,113) = 0.02, p = 0.88$. Likewise, women in the majority group did not display significantly different high status behaviors than did women in the minority group, $F(1,113) = 0.03, p = 0.96$. Additionally, women in majority group did not exhibit significantly different levels of affiliative speech ($F(1,112) = 0.06, p = 0.81$) or assertive speech ($F(1,113) = 0.03, p = 0.87$) than women in the minority. Therefore, there was no support for Hypothesis 4; women did not display different levels of high or low status behaviors according to their group gender composition.

There may be some explanation for this null result in the analysis of status. Whereas Study 1 relied on group composition to infer status, Study 2 included two self-reported measures for a more direct assessment. To see if group composition did indeed affect perceived status, a follow up one-way ANOVA was conducted to explore any differences in status between female-majority and male-majority groups. This analysis found that there were actually no significant differences between groups in perceived self status $F(1,116) = 0.01, p = 0.99$. However, participants did report different gender group status, depending on their group composition $F(1,116) = 18.67, p < 0.01$. Group means revealed that women in the male-majority groups perceived their gender to hold significantly lower status ($M = 2.74$) than did women in the female-majority groups ($M = 3.28$). This is a reassuring validity check. Participants were indeed influenced and aware of the gender disparity in their work groups. This lends some credibility to the use of group gender composition as a proxy for self-reported status.

A multiple linear regression was conducted to test Hypothesis 5, that women's high and low status behaviors were dependent upon perceived status relative to men. For this analysis, the aggregate outcome of perceived status was separated into perceived self-status and perceived gender status as two independent variables. Women's high status behaviors were not predicted by either self-status ($\beta = -0.16, p = 0.20$) or gender status ($\beta = -0.04, p = 0.69; R^2 = 0.02, F(2,113) = 1.03, p = 0.06, \eta = 0.02$). Similar analysis of low status behaviors found that perceived gender status was not a significant predictor, ($\beta = -0.07, p = 0.29; R^2 = 0.05, F(2,113) = 2.92, p = 0.06, \eta = 0.02$).

However, there was an interesting relationship between perceived self-status and low status behaviors, ($\beta = 0.19, p = 0.02$). To further examine this effect, a single linear regression

was conducted regressing low status behaviors only on self-status ($R^2 = 0.04$, $\beta = 0.17$, $F(1,114) = 4.71$, $p = .03$). Results showed that women with higher perceived status also exhibited more low status behaviors, which is unexpected. Therefore, Hypothesis 5 was also unsupported. Women did not vary in high status behaviors according to their perceived status in the group or their perceived status of women relative to men. Women did however vary in low status behaviors according to their perceived status, but in the opposite direction of what was hypothesized.

Similar multiple linear regressions were conducted to test the effect of perceived self-status and perceived gender status on affiliative speech and assertive speech. Women's affiliative speech patterns were not related to either self-status ($\beta = -0.07$, $p = 0.29$) or gender status ($\beta = 0.01$, $p = 0.81$; $R^2 = -0.01$, $F(2,111) = 1.03$, $p = 0.56$, $\eta = 0.02$). Similar analysis of assertive speech patterns found that neither perceived self-status ($\beta = -0.10$, $p = 0.27$) nor perceived gender status ($\beta = 0.01$, $p = 0.99$) were significant predictors ($R^2 = 0.01$, $F(2,111) = 0.64$, $p = 0.52$, $\eta = 0.02$). Again, Hypothesis 5 was unsupported in that women in the majority gender group did not differ from women in the minority group in either affiliative or assertive speech patterns.

Exploratory Analyses

Exploratory multiple regression analyses were run to examine the effects of covariates and predictor interactions on each behavioral outcome. For these analyses, group composition, each covariate (i.e., self-reported anxiety, performance, self-perceived status, personality, self-monitoring), and their interactions were regressed on each outcome variable.

High status and low status behaviors. Analyses with high status behaviors and anxiety behaviors yielded no significant predictors or interactions. However, there was a significant interaction effect between agreeableness and group composition on low status behaviors ($\beta = -0.52, p = 0.01$). To further examine this effect, an analysis of covariance (ANCOVA) was conducted removing all other covariates from analyses; only group composition, agreeableness, and their interaction remained ($F(3,115) = 1.95, p = 0.13, \eta = 0.05$). In these results, group composition and agreeableness remained non-significant, while their interaction term retained significance ($F(1,115) = 5.82, p = 0.02$). Graphing the predicted values for low status behaviors revealed the following pattern: for women in the male-majority groups, low status behaviors increased as agreeableness increased. For women in the female-majority group, low status behaviors decreased as agreeableness increased (*see Figure 1 in Appendix C*).

Affiliative speech. There was a marginally significant effect of group composition on affiliative speech, suggesting that participants displayed more affiliative speech in the female-majority group ($\beta = -1.70, p = 0.50$). There was also a significant interaction between group composition and self-perceived status ($\beta = 0.35, p = 0.01$). Again, further examining this effect, an analysis of covariance (ANCOVA) was conducted removing all other covariates from analyses; only group composition, status, and their interaction remained ($F(3,112) = 1.64, p = 0.18, \eta = 0.04$). In this analysis, both group composition and their interaction fell from significance. This time, only self-perceived status remained a significant predictor of affiliative speech ($F(1,112), p = 0.04$). A linear graph of the means revealed that as self-perceived status increased, affiliative speech decreased.

Assertive speech. For assertive speech patterns, there was also a significant interaction between group composition and self-perceived performance ($\beta = -0.34, p = 0.01$). Again a

follow up ANCOVA was conducted, including only group composition, performance, and their interaction ($F(3,113) = 2.18, p = 0.95, \eta = 0.06$). Again, the interaction between group composition and self-perceived performance was significant ($F(1,113) = 5.96, p = 0.02$). Graphing the predicted values for assertive speech revealed the following pattern: for women in the male-majority groups, assertive speech increased as self-perceptions of performance increased. For women in the female-majority group, assertive speech decreased as self-perceptions of performance increased.

Discussion

Study 2 was designed to investigate the possible effects of gender representation at the group level on the communication behaviors and status-related experiences of women. In contrast to Study 1, this second study experimentally varied groups by gender composition. With this approach, we were able to test the effect of group gender composition (and group status) on nonverbal behaviors. In that respect, the current results did confirm what the previous study found: that there are no significant effects of the group on the display of women's high status and low status behaviors. This was also true of women's speech patterns. Additionally, regression analyses conclude that women's high status behavioral displays were not predicted by their perceived individual status, or their perception of women's status within the group. Indeed, perceptions of women's status within the group also did not significantly predict women's displays of low status behaviors. There was however an effect of perceived individual status on low status behaviors, but in a direction counter to what the author predicted. Women with high perceived individual status actually exhibited more low status behaviors, regardless of group gender composition. This is an interesting finding, and could perhaps be explained by

women's tendency toward social cohesion (Wood and Karten, 1986). Perhaps women who felt they had status within the group felt secure to extend warm, pro-social behaviors (i.e., low status behaviors). Women also were not found to differ in affiliative or assertive speech patterns due to group gender composition or perceived self- or gender-status.

In the exploratory analyses there were interesting, if contradictory, results. An ANCOVA found that in female-majority groups, women were less likely to use affiliative speech patterns. This is somewhat in opposition to the finding that women were more likely to use low status behaviors when they felt they had higher status in their group. However, it may be that affiliative speech and low status behaviors are not as alike as previously thought. This is further supported by the negative (if non-significant) correlation between low status behaviors and affiliative speech ($r = -0.51$).

Perhaps status signifiers and speech behaviors are influenced by both group composition and personality. An ANCOVA found that agreeableness and group composition had a significant interaction effect on low status behaviors. Women in male-majority groups were more likely to display low status behaviors if they were agreeable, compared to less agreeable women. Women in female-majority groups on the other hand, were less likely to display low status behaviors as agreeableness increased. Here we see that personality and context interact to create unique responses to differential gender composition. It is possible that highly-agreeable women may feel an acute need to be pro-social (i.e., display low status) in the presence of men, but not in the presence of equal status persons (women).

There was also an interesting interaction between group composition and self-perceived performance on assertive speech patterns. Women in female-majority groups use less assertive speech when they had higher levels of self-reported performance. Women in the male-majority

groups exhibited more assertive speech as their self-reported performance increased. This pattern may reflect a differential need to women to assert power dependent upon context. When there are mostly women around, there may be lessened need to assert oneself if one is confident (high self-perceived performance). When there are mostly men around, women may feel more inclined to use assertive speech only when they feel secure in their performance. The reasons for this finding may be found in research in organizations with skewed gender demographics. For example, Ely (1994) found that in male-dominated organizations, women were prone to competitiveness (compared to women in female-dominated workplaces). In light of this, a male-dominated context could heighten feelings of competitiveness when participants felt competent, while participants in female-dominated contexts felt no such pressure.

CHAPTER 3

GENERAL DISCUSSION

Taken together, the results of Studies 1 and Study 2 can shed some light on the impact of mixed-gender interactions in real-world situations. We know from previous research that men and women often exhibit different patterns of behaviors (Feingold, 1994). However, the question remains as to why and in which contexts these differential behavioral patterns emerge. These studies endeavor to investigate this question with specific implications for mixed-gender interactions in the workplace and other group-oriented contexts. Unfortunately, few of the above findings were supportive of the author's hypotheses. Indeed, the results herein pose perhaps more questions than they do answers. In either study, participant gender and group gender distribution were not significantly related to either low status or high status behavioral displays, or affiliative and assertive speech patterns.

Contributions to Theory

These findings pose some interesting questions to the social theory in mixed- and same-gender interactions. According to Fiske and Neuberg (1989), individuals often interact with others differently across partners—the reasons for which are theorized to lie in the nature of how interaction partners are categorized by the actor. The continuum model of impression formation would suggest that others are first categorized by features that are most salient to the

actor, chief among these being gender (Fiske, Lin, & Neuberg, 1999). Indeed, Snodgrass (1985) found that when gender is made salient, individuals tend to behave in ways that are stereotypic to their gender. These stereotypic behaviors are thought to derive from prescriptive and descriptive beliefs about different social groups (Rudman & Glick, 2001). In terms of gender, Social Role Theory would suggest that men's and women's stereotypes are based in the way they are socialized—that is, historically, women are socialized to be socially adept while men are socialized to be assertive and assertive agents (Eagly, 1987; Eagly & Johnson, 1990). In either Study 1 or Study 2, the goal of mixed group interactions was to make salient the gender of the actor's interaction partner(s). This was hypothesized to lead to differential behavior between men and women (in Study 1) and differential behavior within women across group composition (Study 2). As discussed in the results, this was not the case for either study.

The failure of the current studies then, may be in their misalignment with existing theory. In Study 1, participants were assigned to mixed-gender groups that were presumably salient to each participant. However, there was no direct measure of gender salience or group composition salience for participants. Without a direct measure of salience, it is possible that subjects did not behave with awareness to their group gender composition. With this in mind, there is a possible explanation for the lack of significant differences between what were presumably pliant outcomes. There is also an issue with group distribution in Study 1, such that mostly male groups or equal distribution groups were infrequent, thus creating a restricted range on predictors relying on the group composition (surrounding others). In Study 2, each type of group was evenly distributed as they were experimentally manipulated. However, Study 2 also suffered from lack of situational gender salience. Though most participants (74%) were able to correctly recall the male-to-female ratio of their group, few participants were able to

correctly identify the correct number of men and women in their group. This could be a sign of a weak experimental manipulation. The underlying theory behind this study relies on gender salience to influence participant behaviors. Without this, women are not provoked to behave in ways that are either stereotypical to their gender (low status behaviors) or not stereotypical (high status behaviors).

Assuming a weak manipulation, the results of Study 2 are actually in line with previous literature in mixed-gender group interactions. In studies that have found differences in male and female behavior in interactive settings, there is often an additional component that triggers gender salience (Anderson & Blanchard, 1982; Hollingshead & Fraudin, 2003; Eagly & Johnson, 1990). Often it is the interpersonal task that influences behavioral outcomes in a gender-stereotypic way. In laboratory settings, behavioral differences between men and women tend to be minimal (Cota & Dion, 1986) unless there is a gender-cuing task at hand. For example, Eagly and Karau (1991) found that men were more likely to emerge as group leaders if the task at hand was short-term or required little complex social interaction. In contrast, women emerged more often as social leaders when complex interaction was needed for the group task. In the present studies, participants responded to general prompts that were not gender-cueing. Participants were also in a laboratory setting, further limiting the gender-stereotypic cues that would be found in real-world organizational settings (Schein, 1973).

In a similar vein, it may be important to explore the motivations that underpin any gender differences in behavior, across situation. For example, in Eagly and Karau's (1991) study, men and women may have emerged as leaders in situations in which they felt the most confident—a situation which would not exist in the current studies—or when they felt social pressure to perform according to their gender stereotypes. Changing behavioral motivations

across different group contexts could generate differential low status and high status behavior patterns between men and women. In other words, in the low-pressure general task of Study 1, participants could have acted according to college-specific, mixed-gender confounds, such as student seniority, attractiveness, etc. This would be in contrast to Study 2, in which participants may have been motivated by other reasons, such as fear of evaluation due to the task at hand. In either study, behavioral motivations might, at best, only loosely match those that would be found in a real-world organization. Therefore, the motivations that would bring about either low-status or high-status behaviors may depend on factors beyond group gender composition (e.g., workplace norms, work field, relationship with interaction partners, etc.). Though these studies were designed with spontaneous, stranger groups in mind, this is a poor simulation for a real organization, in which gendered communication can be either dampened or exacerbated by repeated interactions over time. Eagly's (1987) social role model accounts for gendered communication (as a result of lifelong socialization); however, whether individuals interact according to society-wide norms throughout the life of a relationship with a single partner remains to be known. Initial interactions with an individual may be based on the social group to which they are perceived to belong, but perhaps repeated exposure to an individual brings about a different foundation for interactions.

Contributions to Practice

Although it is likely that weak experimental manipulation was behind the current results, it is also possible that the outcomes coded and collected in the current study were not appropriate or weak for the experiment design. In the first study, behaviors that have been previously found to indicate uncertainty, self-consciousness (e.g., speech fillers), or

confidence and leadership (e.g., interruptions) were coded based on the logic that speech style is representative of perceived power and status (Fragale, 2006). However, in Fragale (2006), speech patterns served as a proxy for status when individuals were given either a group-dependent or group-independent task. That is, the task as hand influenced the extent to which a speaker was assumed to have power and status. The design of Study 1 did not assign either a group-dependent or group-independent task to participants. Without such a manipulation, it is possible that participants' behavior did not depend on status, but rather on another social factor (e.g., partner attractiveness, sociability, etc.). Outcomes that were thought to result from perceived status could have been instead influenced by more individual- and partner-level factors than gender. For example, physical immediacy behaviors that have been found to indicate liking and comfort were hypothesized to be more prevalent in same-gender interactions due to in-group bias theory. Study 1 found that groups with more women displayed less forward leaning but more direct body orientation. Perhaps then, these behaviors do not hold the same meaning across contexts. In a casual social interaction as in this study, forward leaning may not be a social norm whereas direct body orientation is. In a different context—such as the workplace—forward leaning and direct body orientation may hold different implications and purposes, such as interest or attention.

In addition to nonverbal behaviors, Study 2 used participant speech patterns as a proxy for powerful or powerless status (Fragale, 2006). As discussed previously, Study 2 suffered from a weak manipulation and participants' speech may not have been influenced by their group gender composition. Additionally, previous studies on speech patterns (Holmes & Marra, 2004; Ladegaard, 2011) analyzed data from workplace, task-oriented settings. Holmes and Marra (2004) note that speech patterns that are stereotypically feminine in nature are often

relational, supportive, and center on team building. In the current study, female participants responded to a prompt without their group present. This may have led to a constrained frequency of gender-stereotypic speech patterns, since those stereotypes for women are relational in nature. It is possible that the presence of an interaction partner is the cue necessary for gendered speech patterns. Taking out the social interaction is therefore detrimental in observing the full scope of women's speech patterns.

Limitations

As noted earlier, there were a number of limitations to either study. In Study 1, analyses were constrained by a small sample size, leaving results underpowered. This is especially true of analyses relying on group gender distribution, as a predictor of behavior, as these groups were not evenly broken down across distribution types. In other words, seven total groups were comprised of mostly women or entirely of women, which accounted for more than half of the subject sample (28). The remaining groups were mostly equal in gender distribution, and accounted for eight participants. The last group, which would serve as the mostly-male counterpart and comparison group, was terribly underpowered, with just 4 participants. This is likely to leave us with an inaccurate or at least incomplete picture of the effects of gender context on participant behavior.

Though Study 2 aimed to remedy this issue with experimentally controlled group distribution, it suffered from what is possibly weak manipulation strength. Where Study 1 succeeded in posing a realistic social scenario to participants, the second study relied on a computerized social situation. It may be that gender distribution was either not salient or unimportant to participants in such a low stakes situation. Evidence for this doubt can also be

found in poor success rates in the manipulation check. Though subjects were able to correctly identify the gender breakdown of their group over 70% of the time, a direct matchup of participant responses to actual group distribution would lead one to conclude that perceived gender breakdown was not as solidified as would be ideal. Since gender distribution served as a proxy for individual and gender status, this study may not have accurately measured the effects of group context on individual behavior.

CHAPTER 4

FUTURE RESEARCH

Due to many of the mixed or contradictory results from Studies 1 and 2, it is becoming increasingly clear that a replication of these studies is necessary to form confident conclusions about men and women's communication patterns in mixed-gender contexts. In doing so, I would employ more consistent and effective group manipulations. From the results in Study 1, we might conclude that the low-stakes nature of partner interactions may not have been a strong enough manipulation to make both gender and group gender composition salient. In a replication of Study 1, I would have participants engage in a more realistic or high-stakes task. Eagly & Karau (1991) found that men and women emerged as group leaders depending upon the task at hand. In the same fashion, Study 1 suffered from a task that would bring about gendered communication that is more realistically prevalent in a workplace context. A group or partner task that involves the threat of a later evaluation would suit a Study 1 replication.

Conversely, Study 2 may have suffered from a lack of group composition salience. Though there was a task involved (a marketing brainstorming task with the threat of evaluation), the lack of a physical group may have failed to bring about the group gender composition effects seen in previous research (Hollingshead & Fraidin, 2003). That is, a virtual group did not serve as an effective simulation of a mixed-gender interaction. Although the group member names were pre-tested for both ethnic and gender assumptions, an additional

gender marker, such as the member's face) would have served to more effectively stimulate group composition identification. Similarly, it is possible that some gendered communication patterns would not be generated without an active partner or group. For example, low status behavior and affiliative speech are thought to be more stereotypic of women than of men, because they facilitate social closeness. These behaviors are communal in nature and would suit the role for which women have presumably been socialized (Eagly, 1987; Snodgrass, 1985). However, there is little need to exhibit communal or pro-social behaviors without a partner interacting in real time. For this reason, I would replicate Study 2 with a more salient group composition. Specifically, I would combine the group interaction of Study 1 with the task and evaluation threat of Study 2. Short of a real, workplace observational study, these would be ideal conditions to view organic gendered communication.

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APPENDICES

APPENDIX A

BRAINSTORMING FILLER TASK

Instructions: In this study, you will be presented with, and asked to brainstorm, ideas for a work group.

To practice idea generating and brainstorming, please take the next five minutes on the following task.

Try to think of as many uses as you can for the following objects, and type them into the corresponding boxes. Remember, this is a practice brainstorming session.

A Spoon	
A Chair	
A Blanket	
A Toothbrush	
A Water Bottle	

APPENDIX B
PRETEST ITEMS

Instructions: Please rate the extent to which you agree with the following statements concerning the speech you just read.

Please rate each item on the following scale:

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

1. The ideas presented were valuable.
2. This speech was delivered in a manner that was polite.
3. The ideas were presented confidently.
4. This speech was probably given by a man.
5. This speech was probably given by a woman.

Table B1

Summary of Means, Standard Deviations for Scenario Pretesting ($N = 47$)

Scenario	Valuable	Polite	Confident	Masculine	Feminine
1. Relationships with faculty	3.96 (0.66)	4.17 (0.48)	4.06 (0.60)	3.15 (0.63)	3.13 (0.77)
2. NIU safety	4.15 (0.72)	4.00 (0.75)	4.17 (0.56)	3.00 (0.83)	3.28 (0.74)
3. Majors and programs of study	4.15 (0.69)	4.02 (0.61)	4.17 (0.70)	3.00 (0.72)	3.13 (0.68)
4. Life in Dekalb	3.87 (0.92)	3.94 (0.73)	3.70 (0.93)	3.04 (0.72)	3.17 (0.76)
5. Eco-friendliness and health	3.72 (1.10)	3.94 (0.60)	3.79 (0.69)	2.68 (0.78)	3.45 (0.75)

Contribution 1

Relationships with faculty and staff

A major factor that should be advertised to students is the communication and relationships you gain when meeting the NIU faculty. When coming to a big school, many people feel that they are perceived as a number instead of a person with a name. The relationships you make with the people who teach you throughout your college experience is huge. NIU professors are always welcoming to any questions you might have in order to help guide you in the right direction. Professors also are helpful by giving students extra help during their office hours in order to help students succeed in their classes. These relationships you make at NIU are big for the success you can have after you graduate and start working in your field. NIU could advertise this by adding live chats to their websites to give prospective students an opportunity to experience what communicating with the faculty at NIU is like. By giving prospective students this opportunity, it gives the prospective student a possible positive experience with a staff member, which could sway their decision into why they should choose NIU over another school.

Word count: 186

Contribution 2

NIU safety

A factor that NIU should advertise for prospective students is the safety precautions NIU takes in order to protect their students. NIU has campus security constantly patrolling to make sure the campus is as safe as it can be. If any dangerous situations happen on or off campus happens, students are able to sign up for emergency emails and text messages. This gives the students the privilege to feel safe and secure while being at NIU. These also give the prospective students' parents a feeling of security in knowing that the campus takes measures in order to protect their child while they are attending NIU. NIU can advertise this by having big information about the precautions they take on their website, in packets they send to prospective students and parents, and even during open houses they could introduce the head of campus safety so they can explain why safety is important to them and what their team does to protect the students.

Word count: 161

Contribution 3

Opportunity and guidance in majors available at NIU

I think that it's important that NIU advertises all majors that they have to offer on a bigger scale. They should advertise the subfields of each major in order for prospective students to get a look into what they can do with the degrees of specific majors. They should also advertise ways you can become involved and gain exposure to working the field they might major in. They could put this on the major's specific webpages with bigger descriptions to give students understanding of the field. NIU could also advertise this by creating a program that allows students to come live in the dorms, have a mock schedule, and allow them to sit in on classes to see what certain majors can offer them. By doing this program it could give the prospective students a view of what they would have to do in the fields that they are interested in studying. NIU could advertise this by sending out invitations to prospective students that have showed interest in NIU or even allow high schools to offer their students the opportunity to sign up.

Word count: 183

Contribution 4

Life in DeKalb

I think it is important for NIU to advertise the city life of DeKalb. I think that knowing the things that the town has to offer play a role in what college you choose to attend. Because if you are a broadcasting major, you may not want to attend a university that is in a small town with very few opportunities to gain experience. I think it's important for schools to have activities because it is a way to engage students. But really, even if the town didn't offer many events, NIU should still highlight the things that make the town unique, like Corn Fest. NIU can advertise Corn Fest and other events on their website under a tab that might read "Annual DeKalb Events." That way, students that enjoy attending carnivals and similar events would be encouraged to attend! Another way for them to advertise their unique characteristics could be by creating a newsletter that includes seasonal events that occur in DeKalb as well as other things that may attract students.

Word count: 172

Contribution 5
Eco-Friendliness and Health

I think NIU should advertise the ways they are eco-friendly. Nowadays everyone is becoming more conscious of their health and the way they treat the environment. If NIU advertised the things they did to contribute to the conserving the earth they may attract those prospective students that are health conscious. For example, for the students that are vegan or choose to be gluten free, it would be helpful to know what options they have if they are going to be staying in the dorms. NIU can advertise this by including the healthy options on the Housing and Dining websites under a tab that may read “Health Friendly Options.” This will allow those students to see that they will have a variety of food options. Another way NIU could advertise themselves as eco-friendly is by making prospective students aware of the ways they are working to conserve the earth. Maybe by creating a newsletter that goes out to students when they begin the application process or when students request to receive more information on the school. In the newspaper they can include the Green Energy Summer Camp they offer to middle schools students to teach them about ways to conserve energy.

WC:200

Table B2

Data Structure of Dyadic Interactions in Study 1

		Target			
		A	B	C	D
Perceiver	A		X	X	X
	B	X		X	X
	C	X	X		X
	D	X	X	X	

Table B3

Percent of Respondents Identifying Each Name as Either Belonging to a Specific Race, or a Number of Races (N = 28)

Names	Specified race	Any race	Reported confidence
Men's Names			
Brian	89.3	10.7	82.1
James	85.7	14.3	85.7
Robert	71.4	28.6	75.0
Michael*	50.0	53.6	78.6
William	85.7	14.3	85.7
Joshua	75.0	25.0	75.0
Anthony*	64.3	35.7	75.0
Samuel	78.6	10.3	78.6
David*	60.7	39.3	78.6
Daniel	67.9	32.1	67.9
Women's Names			
Sarah	71.4	28.6	92.9
Mary	85.7	14.3	89.3
Samantha	75.0	25.0	89.3
Gabrielle	89.3	10.7	78.6
Ruth	85.7	14.3	82.1
Margaret	96.4	3.6	82.1
Brianna	75.0	25.0	75.0
Ashley*	60.7	39.3	67.9
Jessica*	64.3	35.7	78.6
Angela*	64.3	35.7	67.9

Note. *Chosen for highest percentage of respondents identifying name as “belonging to an individual from any race.”

APPENDIX C
ANALYSIS FIGURES

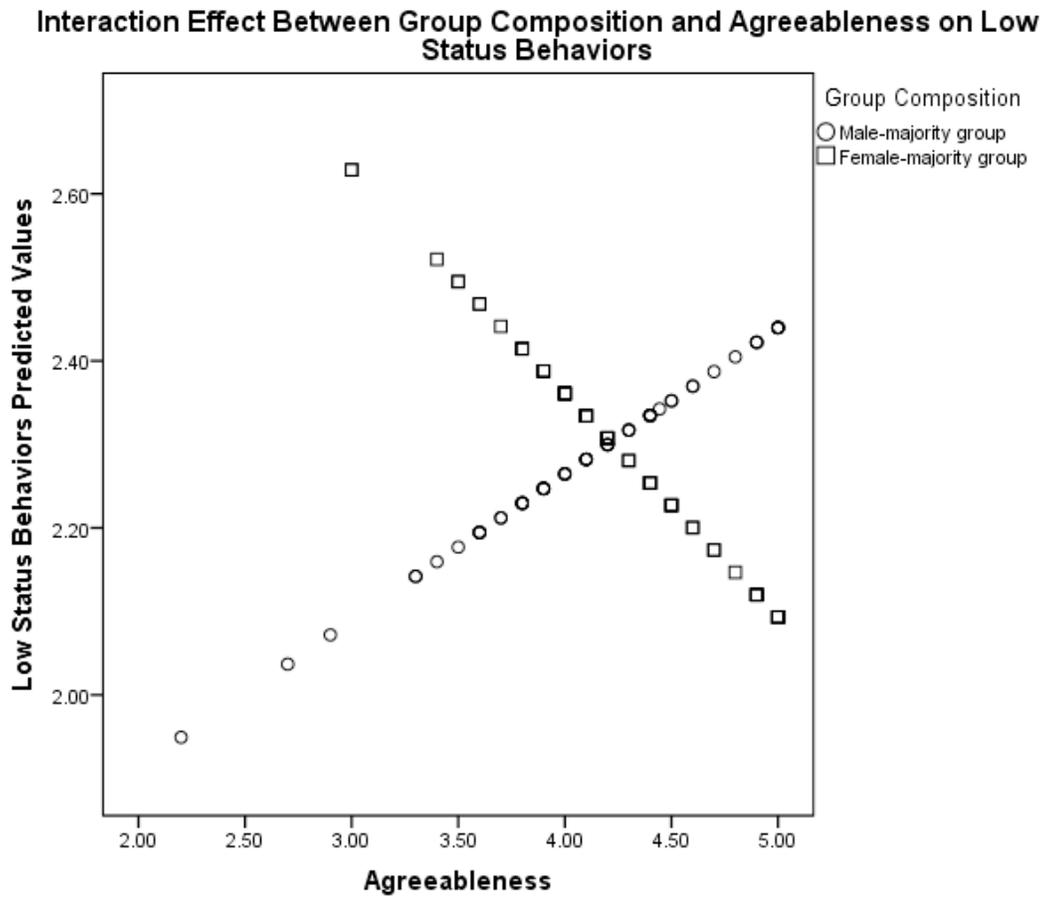


Figure C1. Interaction Effect Between Group Composition and Agreeableness on Low Status Behaviors

APPENDIX D
STUDY 2 MATERIALS

Self-Monitoring Scale (Briggs, Cheek, & Buss, 1980)

Instructions: The following statements concern your personal reactions to a number of different situations. Please consider each statement carefully. If a statement is TRUE or MOSTLY TRUE of you, mark the item as “True.” If the statement is FALSE or NOT USUALLY TRUE of you, mark the item as “False.”

Response options: TRUE or FALSE

Items:

1. I feel a bit awkward in company and do not show up quite as well as I should.*
2. At a party I let others keep the jokes and stories going.*
3. In a group of people I am rarely the center of attention.*
4. I am not particularly good at making other people like me.*
5. I have never been good at games like charades or improvisational acting.*
6. I have trouble changing my behavior to suit different people and different situations.*
7. In different situations with different people, I often act like very different persons.
8. In order to get along and be liked, I tend to be what people expect me to be rather than anything else.
9. I'm not always the person I appear to be.
10. I guess I put on a show to impress or entertain people.
11. Even if I am not enjoying myself, I often pretend to be having a good time.
12. I may deceive people by being friendly when I really dislike them.
13. I would not change my opinions (or the way I do things) in order to please someone else or win their favor.*
14. When I am uncertain how to act in social situations, I look to the behavior of others for cues.

15. My behavior is usually an expression of my true inner feelings, attitudes, and beliefs.*
16. At parties and social gatherings, I do not attempt to do or say things that other like.*
17. I would probably make a good actor.
18. I have considered being an entertainer.
19. I can make impromptu speeches on topics about which I have almost no information.
20. I can look anyone in the eye and tell a lie with a straight face (if for a right end).

*Indicates reverse coded items.

IPIP Extraversion Subscale

Instructions: Please read the following items and rate how well each of the statements describe you, on a scale from 1 *Very Inaccurate* to 5 *Very Accurate*.

Response Options:

- (1) Very inaccurate
- (2) Moderately inaccurate
- (3) Neither accurate nor inaccurate
- (4) Moderately accurate
- (5) Very accurate

Items:

- 1. I am the life of the party.
- 2. I feel comfortable around people.
- 3. I start conversations.
- 4. I talk to a lot of different people at parties.
- 5. I don't mind being the center of attention.
- 6. I don't talk a lot.*
- 7. I keep in the background.*
- 8. I have little to say.*
- 9. I don't like to draw attention to myself.*
- 10. I am quiet around others.*

*Indicates reverse scored items.

IPIP (Big 5 Domain) Agreeableness Subscale

Instructions: Please read the following items and rate how well each of the statements describe you, on a scale from 1 *Very Inaccurate* to 5 *Very Accurate*.

Response Options:

- (1) Very inaccurate
- (2) Moderately inaccurate
- (3) Neither accurate nor inaccurate
- (4) Moderately accurate
- (5) Very accurate

Items:

- 1. I am interested in people.
- 2. I sympathize with others' feelings.
- 3. I have a soft heart.
- 4. I take time out for others.
- 5. I feel others' emotions.
- 6. I make people feel at ease.
- 7. I am not really interested in others.*
- 8. I insult people.*
- 9. I am not interested in other people's problems.*
- 10. I feel little concern for others.*

*Indicates reverse scored items.

6-item short-form State Scale of the Spielberger State-Trait Anxiety Inventory (STAI)
(Marteau & Bekker, 1992)

Instructions: A number of statements which people have used to describe themselves are given below. Read each statement and choose most appropriate number to indicate how you feel right now, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

	Not at all	Somewhat	Moderately	Very Much
1. I feel calm.	1	2	3	4
2. I am tense.	1	2	3	4
3. I feel upset.	1	2	3	4
4. I am relaxed.	1	2	3	4
5. I feel content.	1	2	3	4
6. I am worried.	1	2	3	4

Self-Perceived Status

Instructions: Please respond to the following questions about your group experience on a scale from 1 *none* to 5 *all* or *absolute*.

1	2	3	4	5
None	Less than	Equal to	More than	All, or Absolute

[For female participants:]

1. Rate women's status relative to men.
2. Rate women's power relative to men.

Instructions: Please answer the following questions about your group experience on a scale from *strongly disagree* to *strongly agree*.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

1. I felt that I held high status in the group.
2. I felt like I had power in the group.

Instructions: Please indicate the gender distribution of your group.

1. How many male participants were in your group?
2. How many female participants were in your group?

Gender Identity Salience (Randel, 2002)

Instructions: Please answer the following questions regarding your general experiences when working in groups.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

1. When people ask me about who is in a group, I initially think of describing group members in terms of gender composition (e.g., two women and three men).
2. It is not intentional, but when I think of my fellow group members, what comes to mind initially is the names of the women and the names of the men.
3. Even though I don't mean to, I think of gender as the most prominent characteristic of my fellow group members.