

Proposal for the Student Research Committee
Fall 2012

1. Title of project and contact information, including phone number, current campus mailing address and email address.

Project Title: Are Men from Mars and Women from Venus? Differences in Sex, Gender, and Perceptions of Academic Performance

2. Letter of support from faculty member supervising research (One electronic copy emailed directly from your faculty mentor).

Please see attached.

3. Completed Institutional Review Board or Animal Rights and Welfare forms, where appropriate.

Please see attached.

4. Student authored proposal including:

a. Explanation of the context of research (e.g., research related to senior thesis or other substantial independent research project). Please list the department and course number where applicable.

This research will be completed as part of a psychology departmental honors project and is affiliated with PSY-471 (Fall, 2012).

b. Concise statement of project's major thesis, question, or problem.

It has been said that men are from Mars and women are from Venus. Regardless of the validity of such a phrase, the message is clear: men and women are different. These differences stem from both sex and gender. Although they are related, these terms derive from rather different concepts. Previous research examining the relationship between sex and academic performance has produced consistent results (eg., Chee, Pino, & Smith, 2005; Conger & Long, 2010), whereas similar research relating gender and academic performance has produced rather inconsistent results (eg., Shin, Yang, & Edwards, 2010; Olds & Shaver, 1980). Such findings are even less clear when sex and gender have been examined in light of perceptions of academic ability, rather than basic performance (eg., Grabill, Lasane, Povitsky, & Saxe, 2005; Lasane, Sweigard, Czopp, Howard, & Burns, 1999). Much of this research confounds the definitions of sex and gender and fails to analyze any overlap between the two. The current study, therefore, aims to uncover what relationships, if any, exist between both sex and gender with regard to academic performance as well as perceptions of academic ability.

c. Concise statement of significance of project, that is, how the project contributes to the literature on the subject under investigation.

An examination of various textbooks in psychology illustrates the common use of the term “sex” to refer to one’s genetic makeup, physical anatomy, and reproductive functions (Crooks & Baur, 2011; Etaugh & Bridges, 2006; Matlin, 2012). This is most commonly understood in terms of identifying oneself or others as “male” or “female.” For instance, sex is frequently used when filling out medical forms, applications, and surveys. In each of these situations, an individual is often asked to check a box next to the category of “male” or “female.” Although these two options are the most common, a person’s sex may indeed fall into a third category that is undefined. These individuals may have genetic variations, such as Turner’s Syndrome, Triple X Syndrome, or Klinefelter’s Syndrome, or ambiguous genitalia that results in an inability for the basic categorization as male or female to be made. According to the Intersex Society of North America, one out of every 1500 to 2000 births results in a child whose ambiguous genitalia requires the attention of a sex specialist (2008). Given that this third sex category encompasses less than approximately .05% of the population and the fact that most people primarily identify themselves and others as either males or females, future discussions in the current study will focus exclusively on sex as a concept with only two categories: male and female.

In contrast to the physiological categories of sex, gender, defined as the psychological characteristics and social constructs created by culture, stems from sex yet is not the same (see Crooks & Baur, 2011; Etaugh & Bridges, 2006; Matlin, 2012). Gender exists on a spectrum without categorical components yet is modeled on the categories of male and female. This use of sex as a categorical concept is important when it comes to individuals’ perceptions of self and others. Many qualities, attitudes, and opinions, most of which create a basis for gender, are assumed based on the perception of sex. Expectations of an assumed male are far different from those of an assumed female. People also tend to act, think, and react in ways that are associated with their own sex. At the same time, many behaviors that are not in accordance with one’s sex may be considered abnormal. In this manner, sex differences allow for the creation of labels and future expectations.

With the above said, one’s sex does not always match those specific gender traits. The gendered terms of “masculinity” and “femininity” do not need to fit their originating sex molds. A female can be masculine just as a male can be feminine. Thus, although the traits of gender are rooted in sex, for any one individual there may or may not be any overlap. Furthermore, a person may also be considered androgynous, that is, he/she can demonstrate a balance between both masculine and feminine characteristics (Crooks & Baur, 2011). Much like sex, one’s gender can be assumed based on looks, behaviors, and/or actions. Typically, people assume the gender of others based on physical appearances (e.g., hair style, wardrobe, make-up), activities (e.g., jobs, sports, clubs), and expressions (e.g., facial expression, tone of voice, gestures). In this sense, gender also can be used as a tool to make an assumption regarding an individual’s sex.

Like sex, gender can be perceived in others as well as expressed in the self. Individuals may feel pressured to adhere to gender traits that correlate with his/her own sex. Others, however, may find comfort in androgynous gender traits or even those that do not match their specific sex type. The combination of gender traits in each person is unique and complex. Such variation can be found in all areas of life, including that of academic performance. For instance, one’s sex and/or gender may impact his/her academic performance in a variety of ways, ranging from directly impacting a performance in certain academic areas (Barrow, Reilly, & Woodfield, 2009; Chee, Pino, & Smith, 2005; Conger & Long, 2010; Khwaileh & Zaza, 2011; Lippa, 1998;

Olds & Shaver, 1980; Sheard, 2009; Shin, Yang, & Edwards, 2010) to how expectations of others enhance or detract from that performance (Tomasetto, Alparone, & Cadinu, 2011). Furthermore, the perception of other people's sex and gender may also be connected to perceptions of academic ability in a similar fashion (Czopp, Lasane, Sweigard, Bradshaw, & Hammer, 1998; Grabill, Lasane, Povitsky, & Saxe, 2005; Herbert & Stipek, 2005; Lasane, Sweigard, Czopp, Howard, & Burns, 1999). Although sex and gender are separate elements, they both contribute to academic performance and the perception of others' academic ability.

Sex, Gender, and Academic Performance

Previous research has exposed differences between the sexes when it comes to academic performances of college students. Multiple studies, for instance, provide evidence of females earning higher GPAs than males in the college setting (Chee et al., 2005; Conger & Long, 2010; Khwaileh & Zaza, 2011; Sheard, 2009). Furthermore, females have been shown to outperform males in other academic areas such as academic ethic, commitment (involvement), general grades, and degree performance (Barrow et al., 2009; Chee et al., 2005; Sheard, 2009).

Although each study listed above obtained similar findings, their individual methodologies varied. Chee et al. (2005), for instance, distributed a survey to 675 students at Georgia Southern University. The questions compared male and female responses in regard to college experience. Results indicated that female undergraduate students tended to have higher GPAs and were more likely to have an academic ethic. Factors that served as significant predictors for GPA included active participation in clubs, skipping class less often, partying less, etc. Furthermore, when solely GPA was examined, females in the study scored higher on average than males.

In a comparison of academic performance between males and females across the transition from high school to college, Conger and Long (2010) also found that females have the achievement advantage over males. An analysis of enrollment and academic information from multiple schools show that colligate males earn lower GPAs than females, accumulate fewer credits, and, in some cases, are less likely to graduate. The authors offer many reasons for this evident gap between sexes. Mainly, they suggest that males leave high school and enter college with lower grades than females. Therefore, as the college years progress, males remain academically inferior and gradually sink lower as females achieve success.

Sex differences in academic performance are not limited to the United States. Further research shows the continuation of sex differences across country lines. Although some foreign measurements of academic achievement may vary from U.S. standards, females continue to outperform males on an international level. A closer look at college grades between males and females led Kwaileh and Zaza (2011) to examine the records of students from Jordan University. Of the 26,122 undergraduate student records analyzed, female students produced significantly higher GPAs than male students. The data represented six years of student information at the University and further supports the notion that females outperform males academically in the college environment.

Sheard (2009), a cross-cultural study from the United Kingdom, tracked the academic progress of 78 male and 56 female undergraduate sport and exercise students for 2 full years. Students took part in a questionnaire within the first week of the marking period. Academic achievement was measured by final degree GPA as well as final dissertation marks. The authors concluded that female students significantly outperformed male students in both areas of academic assessment. When including the data from the questionnaire, females demonstrated a significantly higher mean score on hardiness "commitment" (defined as involvement, eagerness and devotion to work) over males.

In regard to additional areas of academic success, Barrow et al. (2009) compiled data from students at the University of Sussex to assess degree performance. Although this measurement is not an exact GPA or grade, the system used to address these degrees is comparable to the American hierarchy of letter grades. It was found that female students had, on average, a superior rate of 'good' degree marks over males. Given their results, the authors concluded that females performed considerably better than males.

Based on the above findings, it appears as though females have a better academic performance in college over males, particularly with regard to GPA, but also in the areas of academic ethic, commitment, general grades, and degree performance. Females may have the upper hand in college level academic performance, but what about those students who identify themselves as feminine? As stated earlier, it is important to keep in mind that when examining any issue in the context of sex versus gender, a female is not necessarily feminine, nor is a male necessarily masculine. Females may be performing better academically, but feminine students may be performing differently. Where does gender fit in with relation to sex and academic performance?

Looking at gender and academic performance, much less research has been done in this area, and the results have drawn conflicting conclusions. Some research has found masculinity to be the desired guide to academic success. Shin et al. (2010), for instance, conducted a cross-cultural study using both Korean and American students. Researchers compiled test scores, ACT results for the American students and *Soo Neung* scores for the Korean students, as well as the results from the Bem Sex Role Inventory (American) and the Korean Sex Role Inventory (Korean). In a comparison of ACT scores between the 173 American students, it was found that those students who rated themselves to be more feminine, regardless of sex, earned higher test scores than those who rated themselves as androgynous (having traits of both genders), undifferentiated (having no significant traits in either gender), or masculine.

In finding oppositional results, Olds and Shaver (1980) focused on masculinity and femininity as they relate to academic performance and health. Participants included 185 students from New York University. Students completed surveys that included Spence and Helmreich's Work and Family Orientation Questionnaire (measurement of achievement motivation) and Personal Attributes Questionnaire (measurement of masculinity/femininity), along with a symptom checklist and measure of fear of success. Students' ratings of masculinity, for both males and females, correlated positively with mastery (attempting challenging tasks) and work (satisfaction in working as well as possible), and negatively with achievement conflicts. Masculine females earned significantly higher GPAs yet demonstrated less competitiveness than masculine males. The authors therefore concluded that masculinity proves beneficial for both sexes, while femininity appears to be detrimental in regard to academic performance.

To add further variation to the results examining gender and performance, Lippa (1998) analyzed a collection of data from a previously conducted twin study. Part of this information included self-report scales and inventories, and each subject's results from the National Merit Qualifying Test and the California Psychological Inventory (CPI). Responses from the self-report measures and the CPI were used to calculate gender diagnosticity ("male-like" or "female-like"). Masculine instrumentality and feminine expressiveness were determined based on responses to the Adjective Check List. Analyses indicated that males who rated themselves as more "male-like" in occupational preferences, everyday activities, and CPI personality responses tended to score lower on the National Merit Qualifying Test. Females, however, who reported more "male-like" measures and fewer feminine measures tended to perform better on the National Merit Qualifying Test. Thus, Lippa suggests a cross-sex-typing phenomenon: males

who express more “female-like” qualities and females who express more “male-like” qualities will tend to have a better test performance.

The relationship between sex and academic performance has rather clear conclusions; females tend to do better than males in a college setting, especially when measured via GPA. The addition of the concepts of “masculinity” and “femininity,” however, complicates this view of performance. While some research suggests that the traits associated with masculinity (regardless of sex) are associated with stronger academic performance, others seem to suggest the opposite. Moreover, few examine the overlap between both sex and gender and its potential impact on academic performance. Because of this, the question remains: what is the relationship, if any, between sex and gender with regard to academic performance? Further questioning arises when the focus is lifted from the self and put onto others. Sex and gender have an influence over performance, as presented above, but how does that influence transfer onto others?

Sex, Gender, and Perception of Academic Ability

The association between sex and perception of academic performance in others is evident at a young age. Herbert and Stipek (2005) asked parents and teachers of elementary children to rate their perception of each child’s performance. All adults used a scaled rating system. Results demonstrated that teachers rated girls higher than boys in literacy, whereas parents rated boys higher than girls in mathematic ability. Results indicated that teachers accurately predicted actual student performance, as girls outperformed boys in literacy; however, there was no significant difference in math performance. More importantly, the results of this study demonstrate that sex differences in perception of academic performance exist, even with children, and further suggest that expectations are based in part by actual performance.

Moving up to the college level, Grabill et al. (2005) gave 96 undergraduate students a series of questions relating to academic behaviors and sex. Included in those questions was the Personal Attributes Questionnaire, an adapted version of the Time Structure Questionnaire, and an academic behavior scale. Students also answered questions regarding a hypothetical student and publicly stated their thoughts on the importance of studying. The results indicated that participants deemed females more likely to study and perform better academically. These perceptions were consistent between the sexes. When evaluating the hypothetical student, participants were more likely to attribute the high achieving, high effort student with females and the high achieving, low effort student with males.

This discussion of perception is subject to further complexity when gender plays a role. Lasane et al. (1999) designed measures of social perceptions and gender based on standard inventories. Psychology students read one of two vignettes that described either an academically organized or disorganized hypothetical person. Students were then asked to rate levels of masculinity, femininity, and social attractiveness for the individual using adjectives from sex-role inventories. Results indicated that the organized, conscientious student was rated higher in femininity, higher in masculine traits, and lower in social attractiveness over the disorganized student. Thus, academic success is perceived through strong displays of gender.

A hyper-expression of gender, however, may be detrimental to perceptions. Czopp et al. (1998) read 176 undergraduate students a vignette describing student “Joe.” There were 4 versions of “Joe,” including a cool White male, a cool Black male, and nonhypermasculine White and Black males who served as controls. “Coolness” was described using standard masculine traits. Following the vignette, students answered 16 questions regarding Joe on both social and academic levels as well as assigning “Joe” a grade on an essay which could have been written by students of varying ability. Students were also asked to assign “Joe” a GPA. “Joe” was found to be more masculine and less feminine than the control. Overall, students evaluated

the hypermasculine “Joe” less favorably academically and more favorably socially than the control student. The authors conclude that college students associate overly masculine traits with less academic success (lower GPA).

Contributions of the Current Study

As the above review suggests, the examination of both sex and gender has led to a variety of conclusions when it comes to both one’s actual academic performance and the perception of others’ academic ability. Much of the previous research, however, confounds the differences between sex and gender when discussing academic performance and perception of others. Few attempts have been made to examine the two elements simultaneously, especially with regard to the perception of academic ability. By examining perceptions of the academic abilities of others, this study seeks to uncover what relationship, if any, exists between sex and gender. Given that research has found that females actually do perform better than males academically at the college level, will that finding transfer to perceptions of others? That is, will participants be more likely to predict that a hypothetical student with a high GPA is female rather than male? Will the categorization of that student’s sex interact with the assignment of masculine/feminine traits by others?

d. Description of methodology.

The participants for this study will be recruited from the student body of Le Moyne College. Students will be made aware of this project through flyers and announcements in classes. Although psychology students will be the primary participants in this study, all students are eligible to participate. The information provided on the flyers and given through announcement will include the days, times, and location of approximately four open testing sessions. Students will select one session to attend.

Upon their arrival at one of the sessions, students will be asked to sign an informed consent form. The consent form will allow participants to acknowledge their voluntary participation in the study as well as any risks that are involved. They will also be asked to select a form of compensation. Students will be assigned an identification code which will aid in the data collection process but will be in no way associated with a given student’s name. Next, students will be handed a packet with the testing information. When the first page is complete, the student will be led to a computer and asked to log into the area of the college website that contains his/her GPA. A researcher will record the student’s GPA. The student will be assured that his/her GPA will be used solely for the purposes of the study and will in no way be associated with his/her name. Once the GPA has been recorded, the student will log off the computer and return to the previous room to complete the remainder of the packet. No personal information will be left on the computer once a student has finished using it.

The packet will consist of demographic questions including ones about the sex, GPA, and major of the student as well as a gender inventory (the Bem Sex Role Inventory). Furthermore, the participant will be asked to read over a college application for a hypothetical student and determine that student’s sex. This will be followed by a gender inventory for the hypothetical student. There will be two different hypothetical student applications, however each participant will only evaluate one (please see attached for sample applications and a copy of the Bem Sex Role Inventory).

Samples of the “Common Application” will be used as part of this study. The “Common Application” is used by prospective college students to apply to a variety of colleges and universities. A total of two common applications will be created for two fictitious students. The

information on these applications will be identical except for GPA and the academic elements that accompany it. All personal or demographic information will be “blocked out” when presented to the participants under the guise of confidentiality. One of these applications will be for a high achieving student and one will be for a low achieving student. Each hypothetical student will be assigned a class rank. The higher achieving student will be within the top 5% of his/her class (rank 8/350). For the lower achieving student, his/her rank will be in the lower 25% of the class (ranks 242/307). For SAT and ACT scores, the high achieving student will have above average scores. The low achieving student will have scores that are below average. The SAT scores used will be comparable to each ACT score. For GPA, the high achieving student will be in the A range and the low achieving student will be in the C range.

Given that GPA, as well as the academic elements that accompany it, is the independent variable in this study, the remainder of each application will be the same. The remaining control variables such as desired major, Advanced Placement classes, and extracurricular activities will be determined through a piloting study. This study will decide which activities are the most sex-neutral.

Piloting Study: This study will consist of current Fall, 2012 sections of psychology classes (e.g. PSY 201, PSY 215). These students will complete a survey asking them to rate different types of majors, classes, and activities as typically male or typically female oriented. Those elements with the most discrepancy will be selected for the application. This study will be done as part of an in-class exercise that is relevant to the course content.

References

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f. Current status of research

Research on existing literature has been completed and IRB approval has been granted. The data collection process has not yet begun.

g. Budget request including justification for requested funds.

This study will require a total of \$500 in funding:

- This study has a target subject population of 60 participants who will have the option of receiving monetary compensation of \$10 or extra credit in a psychology course.

h. Prior history of funding through the Student Research Committee.

This is the first application for funding made to the Student Research Committee by Brianna Vespone.