ROMANCE OR REALITY: HOW ROMANTIC GOALS AND SOCIOECONOMIC STATUS INFLUENCE WOMEN'S OCCUPATIONAL CHOICES IN STEM FIELDS

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Abstract

The present research examined the impact of socioeconomic status and romantic goal strivings on women's attitudes towards science, technology, engineering, and math (STEM). It has been shown that in the implicit pursuit of romantic desirability, women may show less interest in masculine domains such as STEM. However, coming from a lower economic background may lower the amount of romantic goal pursuit, as these women may be more focused on occupational goals even if they are in masculine domains. In this study, participants recorded their interest in STEM, answered questions about romance that activate romantic goal pursuit, and then, reported their interest in STEM again. The hypothesis that the women of low socioeconomic status (SES), and who were reminded of their SES would be less influenced by the romantic goal prime was not significant. However, the interaction between SES and romantic goal pursuit did show a linear trend in the direction of a heightened interest in STEM after the romance prime.

Romance or Reality?: How Socioeconomic Status influences women's pursuit of romantic goals and occupational careers in STEM fields

The STEM (science, technology, engineering, and mathematics) fields have always had a women problem. Men tend to dominate in these industries, and the number of women entering these fields, especially the "hard sciences" such as physics, engineering, and computer science, is not growing. For example, the US Department of Commerce found that only one out of every seven engineers is female, and there as been been no employment growth in the number of women in STEM jobs since 2000 (Beede, Julian, Langdon, McKittrick, Khan, & Doms, 2011). This trend is especially confusing because women have made tremendous strides in other male-dominated fields, such as business and law. The problem has many complex components, and theories about why women are not going into STEM range from innate biological differences to a variety of socio-psychological reasons. However, most researchers can agree that women's lack of interest in STEM is a major problem, and more initiatives need to be undertaken.

Definition of STEM

The Economics and Statistics Administration defines STEM jobs to include professional and technical support occupations in the fields of computer science and mathematics, engineering, and life and physical sciences. STEM degree holders are defined as individuals whose primary or secondary undergraduate major was in a STEM field. Generally, business, healthcare, and social science majors and occupations are not included (Beede et al., 2011).

STEM jobs are typically divided into four categories: computers and math, engineering and surveying, physical and life sciences, and STEM managerial occupations. Across all levels of educational attainment, the largest group of STEM jobs is within the computer and math fields (47%). Engineering and surveying represent one-third of all STEM employment. The life and physical sciences represent twelve percent, and management jobs represent right percent (Beede et al., 2011).

History of Women in STEM

Women have been a part of science and technology throughout history. The involvement of women in the various fields of medicine and science has been recorded in several early civilizations. For example in the third century, Mary the Jewess was credited with inventing the double boiler, and in the fourth century, Hypathia of Alexandria wrote texts on geometry, algebra, and astronomy (Etzkowitz, Kemelgor, & Uzzi, 2000).

Women continued to remain involved in sciences throughout the middle ages and into the modern era. Hildegard (1099-1179) is often regarded as the founder of holistic medicine. Marie Cunitz (1610-1664) was an astronomer credited with translating the works of Johannus Kepler from Latin into German. Sophia Germain (1776-1831) helped to develop the modern theory of elasticity, and Maria Mitchell (1818-1889) became the first female professor of astronomy in the United States (Etzkowitz et al., 2000).

However, it was not until the twentieth century that the value of women in STEM began to be fully appreciated. The women's rights movement had fostered single-sex colleges in the nineteenth century, and science flourished in many of them (Etzknowitz et al., 2000). By the early twentieth century, a number of American women had earned PhDs in the natural and social sciences (Bystydzienski & Bird, 2006), and throughout the twentieth century, many notable female historical figures in STEM, such as Marie Curie and Barbara McClintock were able to make valuable contributions to the fields.

In the twentieth century, female participation in STEM drastically increased. However, it still remained beneath participation of males. This is a trend that has continued into the 21^{st} century with minimal signs of changing. Research shows that the difference begins in secondary school. In 2011, according to the National Assessment of Educational Progress, there was an impressive gain in mathematics scores for both 4^{th} and 8^{th} grade girls and boys. However, at the 12^{th} grade level, things changed. While mean scores increased for 4^{th} and 8^{th} grade boys and girls, at the 12^{th} grade level, boys' scores stayed stagnant and girls' scores decreased (Clewell & Campbell, 2012).

Scholastic Assessment Test (SAT) and American College Test (ACT) scores showed a similar pattern (Clewell & Campbell, 2012). SAT Math scores have increased among boys and girls steadily since the 1990s. However, girls' scores remain 35 points below those of boys on average. Sex differences in ACT Math scores were smaller, but almost twice as many boys as girls score at the two highest ACT levels. In the ACT Science Reasoning Section, almost twice as many boys as girls score at the top two levels (Clewell & Campbell, 2012).

After high school, patterns are similar. Despite several decade of research on and interventions to benefit women in STEM, progress in effectively changing the low representation of women in many STEM careers has been slow. Thus, whereas women are currently slightly overrepresented among all high school and college graduates and constitute the majority of undergraduates and master's-level graduates in biological sciences, in areas such as physics, computer science, and engineering, they continue to obtain only a small proportion of college degrees in those areas.

While, the gap has closed in the "softer" STEM fields such as biology, medical sciences, and health sciences, there is a continuing gender gap in physics, engineering, computer science, and technology (Clewell & Campbell, 2002). Even though the percentage of women majoring in engineering increased by 4% from 1990-2000, the total percent of women majoring in engineering was only 20%. In computer science, the proportion of bachelor's degrees awarded to women actually dropped from 30% in 1990 to 27% in 2000 (Figure 1). Although women enrolled in rates equal or greater than those of men in science and engineering graduate programs in some fields (mainly in the biological and social sciences), they are extremely underrepresented in the physical sciences (29%), computer science (30%), and mathematics (36%) (The National Science Foundation, 2011). And in fields like aerospace engineering, electrical engineering, mechanical engineering, and physics, women still earn fewer than 20% of undergraduate degrees (Figure 2).

Figure 1

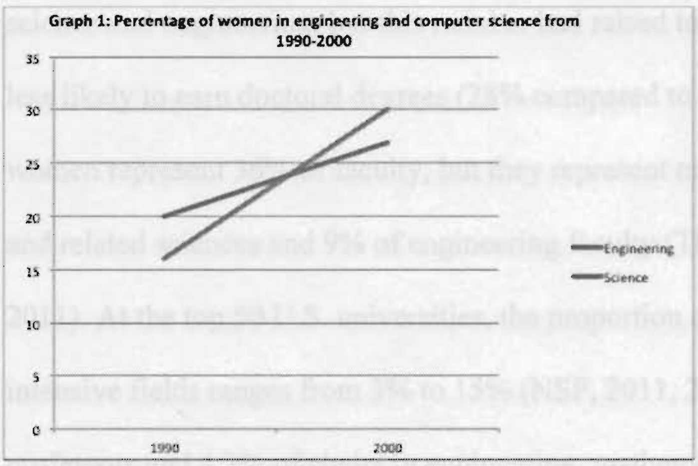
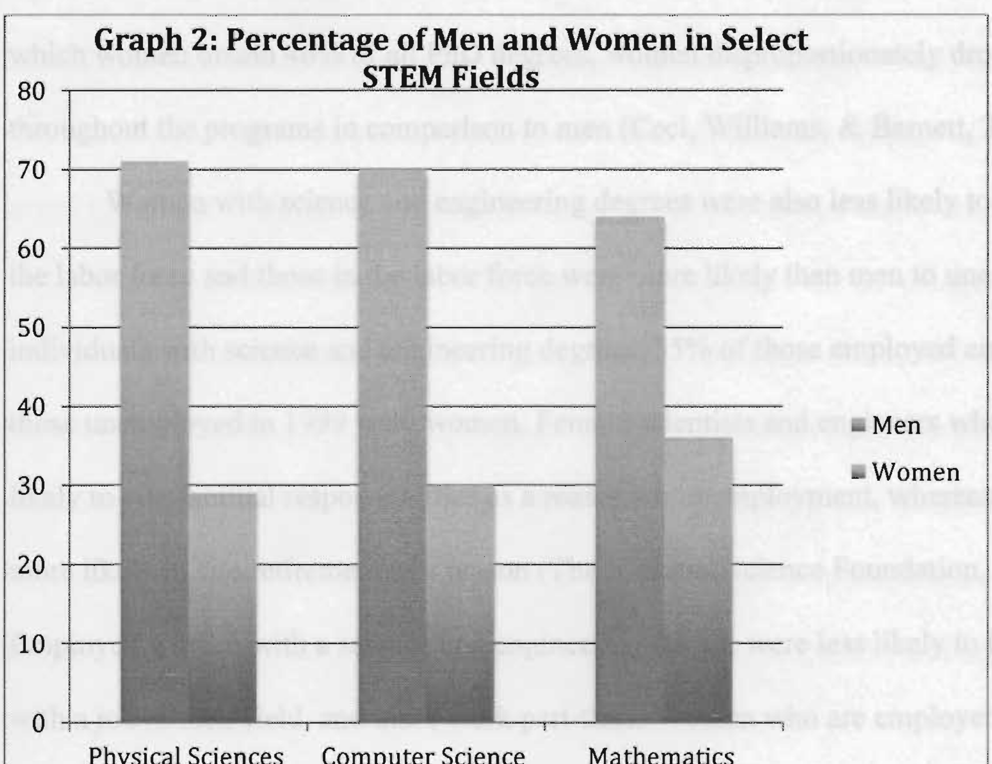


Figure 2



The numbers are even smaller among women who choose to pursue STEM in postgraduate studies. Overall, in 1990, women earned 34% of all masters' degrees in science and engineering, but this number had raised to 41% by 1996. However, they are less likely to earn doctoral degrees (28% compared to 42%). In four-year colleges, women represent 36% of faculty, but they represent only 22% of professors of physical and related sciences and 9% of engineering faculty (The National Science Foundation, 2011). At the top 50 U.S. universities, the proportion of female professors in math-intensive fields ranges from 3% to 15% (NSF, 2011, 267). Additionally, only 5% of full professors and 4.2% of chairs in engineering, mathematics and statistics, earth sciences, chemistry, and physics and astronomy combined were female (Niemeier and Gonzales, 2004). Even in less math intensive fields, such as cellular and molecular biology, in which women obtain 46% of all PhD degrees, women disproportionately drop out throughout the programs in comparison to men (Ceci, Williams, & Barnett, 2009).

Women with science and engineering degrees were also less likely to be part of the labor force and those in the labor force were more likely than men to unemployed. Of individuals with science and engineering degrees, 35% of those employed and 24% of those unemployed in 1999 were women. Female scientists and engineers who were more likely to cite familial responsibilities as a reason for unemployment, whereas men were more likely to cite retirement as a reason (The National Science Foundation, 2011). Employed women with a science and engineering degree were less likely to be employed with a job in their field, and more work part-time. Women who are employed full-time in science and engineering, usually earn less than men ($46,000 compared to $62,400), and women in science and engineering careers tend to be younger, are less likely to be married, and more likely to have problems in accommodating dual careers because they are twice as likely to have spouses who work full time.

Theories About Women's Lack of Involvement

There have been many proposed reasons for low numbers of women in STEM. They range from the earliest suggestions that women were deficient in math and science and lacked motivation to participate (Maccoby and Jacklin, 1974) to social factors such as cultural beliefs, discrimination, and stereotypes (Ceci, Williams, & Barnett, 2009). Most theories are placed under three categories: testing-based, biological, and socio-psychological.

Testing-Based Theories. It has long been known that it possible to create or eliminate differences in test scores by selecting different test items. There has been much research and discussion on gender differences in test content and format and how this might contribute to gender differences in mathematics and science achievement.

Testing format. Hamilton (1998) found that boys have the advantage on high school achievement test constructed response items. Test items that favor boys tend to rely on the application of knowledge typically acquired through extra-curricular activities, while girls tend to be the least disadvantaged on items that are heavily dependent on information learned in schools. Hamilton hypothesized that sex differences do not result from differences in general or scientific reasoning ability or from teaching practices that favor boys, but rather, they may reflect differences in outside-of-school experiences, especially those that promote visual or spatial reasoning.

Stereotype threat. Stereotype threat may also have an impact on test results. Stereotype threat refers to "the experience of being in a situation where one recognizes that a negative stereotype about one's group is applicable to one's self" (Steele, 1997). In this case, the negative stereotype would be that women do not do well in STEM fields. According to Steele (1997), when stereotype threat is activated, women could feel that they are being judged or treated in terms of this negative stereotype. Thus, females who are interested or pursuing STEM could inadvertently do something that would confirm to the negative stereotype, and this threat of being negatively stereotyped could be upsetting or distracting. Spencer, Steele, and Quinn (1998) found that female students who were exposed to stereotype threat about women and mathematics performed worse on a difficult math test than their male counterparts. One average, there was a 20-point difference between scores. However, when the female students were told that this stereotype was not true, their scores improved. There was only a 5 point score difference on average between genders.

Similarly, these differences caused by stereotypes have occurred on the SAT and the ACT: Hannan (2012) found that due to pervasive stereotypes about women's lack of ability to succeed in math, women consistently scored less on national tests. Women were exposed to primes that induced text anxiety about supposed lack of ability to succeed in STEM due to innate differences. There were significant differences between groups. The average score for males was 551 versus 522 for females, and the there was a difference in overall scores. The average overall score for females was 1046, and the average overall scores for males were 1097 (Hannan, 2012).

Biological Theories. Some researchers have attributed the difference in achievement in STEM fields to biological differences between males and females. There are two long-standing candidates for causal roles of sex differences in STEM fields. The first is brain structure differences, such as volume and organization. The second is the organizing effects of prenatal sex hormones on the brain, such as testosterone, and postnatal activation hormonal effects, such as puberty, menstruation, contraceptives, circadian and seasonal fluctuations, and menopause (Ceci et al., 2009).

Brain structure differences. Brain structure differences point to differences in ways of processing STEM related material. Hyde (2005) synthesized 128 effect sizes on a broad range of measures from 47 published meta-analyses, and although she concluded that males and females were more similar than dissimilar, she reported large effects for mental rotation and mechanical reasoning that favored males (d = .11 versus d =. 46), which suggest underlying sex differences in advanced math.

Hormone research. Hormone research examines the relationship between sex hormones and spatial and cognitive abilities. Hormones are hypothesized to affect cognitive abilities, particularly spatial skills, through processes associated with averting programmed cell death and enhancing connectivity in structures such as the hippocampus (Van Anders & Hampson, 2005). With STEM, evidence based on populations with hormonal disorders and evidence based on hormone interventions is also mixed. For example, a number of studies have found a U-shaped associated between activated levels of testosterone and mental rotation and mathematics scores (Hampson & Moffat, 2005). However, there are a number of studies that have failed to find such relationships. (Hampson & Moffat, 2005).

Studies of normal variations in hormone levels examine both prenatal organizing hormones and postnatal activating hormones. An example of testing for prenatal hormones is the digit ratio test (Fink, Brookes, Neave, Manning & Geary, 2006). The digit ratio is the ratio of the lengths of different fingers, typically measured from the bottom crease to the tip of the finger. In particular, the ratio of interest is the index finger to the middle finger. The ratio of these two digits is affect by exposure to androgen. Geary (2006) showed a correlation between numeric competences and finger-length digit ratios. He found that higher digit ratios correlated with lower numerical ability for males. Since females have lower digit ratios, in general, it could be argued that exposure to androgen could affect performance in STEM (Geary, 2006).

Brosnan (2008) found similar results to these. Digit ratios were calculated for 75 children, who were between 6 and 7 years old. The digit ratios were then correlated with their results from national assessment tests. There was a significant sex difference (p = .05). There was also a negative correlation between digit ratio and numeracy for males, indicating higher prenatal testosterone (males= - 0.35, females = 0.16), and a positive correlation between digit ratio and literacy for females, indicating lower prenatal testosterone exposure related to higher literacy SAT scores (males = .129, females = .215).

However, Putz, Gaulin, Sporter, and McBurney (2004) found different results. In their study, they reassessed the relationships among three measures of digit span ratio (left hand, right hand, mean) and several variables that assumed to be correlated with digit span ratio including sexual orientation and spatial ability. Only digit span ratio correlated significantly in the predicted direction with sexual orientation and only for the left hand. Putz et al. (2004) hypothesized that studies concerning digit span ratio are often subject to faulty methodology and broad claims. They suggest that before making broad claims that digit span is correlated to mathematical ability, that more research should be done.

In general, the results of hormonal research on women's mathematical abilities are quite varied. Thus, it can be concluded that where hormones may account for a very small portion some of sex-related variance in math skills in the within the normal population of math and science students, hormone differences cannot be established as the primary cause of sex differences for those who are exceptionally talented at math and science.

Psychobiological Factors. Given the limitations to brain structure and hormonal research, there have been several studies that attempt to bridge biological and social factors. Ceci, Williams, and Barnett (2009) propose a causal framework that takes into consideration biological and social factors that determine whether or not women pursue math- related STEM fields. They hypothesized that individual and sociocultural factors that are shown to affect success in math-intensive STEM careers, are shown to have a circular relationship. Broad contextual influences, including cultural beliefs, frame the potential environment, which in turn shapes individual motivation, beliefs, and activities. Activities can influence brain development and the consequent abilities that individuals build over time. Some abilities are manifest in assessed performances such as on the SAT, achievement test scores, and GPA, which in turn can affect career related striving and, ultimately, career status.

For example, a girl may be raised in home and attend a school where mentors and authority figures subscribe to traditional beliefs that women cannot succeed in them. These cultural influences would frame an environment in which the girl would not have a support system in place, such as extra help in classes or summer enrichment programs, to help her pursue STEM goals. Based on these environmental influences, the girl may lose motivation in STEM as she advances through her academic career. Thus, she may not participate in activities that would improve her STEM skills. Consequently, the girl may not development STEM skills, but rather subscribe to cultural stereotypes, and perpetuate the cycle (Ceci et al., 2009)

Proponents of biological explanations for gender differences in STEM fields accept that sex differences are very hard to change. Thus, some researchers who accept these explanations are often skeptical about how much good programs or efforts to increase women's interest in STEM can accomplish. However, current research tends to move away from biological theories, and it is tending to focus more on the psychological and sociological reasons that might explain gender differences (Clewell and Campbell, 2002).

Socio- Psychological Theories

By far, the vast majority of research done on gender differences in STEM has focused on the socio-psychological reasons why girls and women may not choose to enter STEM fields. These theories include everything from the female self-concept to the process of engagement in STEM to familial reasons.

Role congruity. When people do not fulfill their perceived roles that society places on them, role incongruity can occur. Diekman, Brown, Johnston, and Clark (2010) proposed that one of the reasons that women remain underrepresented in STEM is because STEM careers are perceived as being less likely than careers in other fields to fulfill communal goals. Theoretically, perceptions such as these may disproportionately affect women's career decisions because women tend to endorse communal goals more than men. Diekman et al. (2010) propose that social roles are critical to understanding people's reasons for pursuing STEM careers.

Gender roles in a society influence the goals of individuals in that society. For example, men have traditionally been associated with leadership roles associated with a focus on agency, whereas women have traditionally fulfilled caretaking roles. Research also suggests women often report more tender-mindedness and warmth than men, which is consistent with women's abundant presence in female-stereotypical role (Diekman et. al., 2010).

Specific social roles form an opportunity structure that individuals navigate as they pursue their goals. Women and more feminine individuals favor working with people over things, and this preference predicts different vocational interests. (Diekman et al., 2010). Based on this research, Diekman et al. (2010) hypothesized that women's communal goal orientation intersects with beliefs that STEM careers do not involve helping or working with other people. This results in even scientifically oriented women choosing other careers that will help them fill perceived communal goals. Diekman et al. (2010) examined whether communal goal endorsement inhibits STEM interest, given consensual beliefs about the goals that these careers can afford. Participants in the study provided goal-affordance ratings and information about their STEM experience.

In Diekman et al.'s (2010) study, participants completed randomly ordered measures of goal endorsement, career interest, and self-efficacy. Participants then provided goal-affordance ratings. For each career, participants rated how much they considered the career to fulfill agentic goals (e.g. power and achievement) and communal goals (e.g. intimacy and altruism).

Diekman et al. (2010) found that STEM careers were perceived as being significantly less communal than other careers. They also found that communal-goal endorsement negatively predicted interest in STEM careers. They found that even though self-efficacy is a big predictor of STEM interest, communal goal endorsement predicts STEM interest above and beyond self-efficacy. These results also showed unique gender differences, which showed that communal-goal endorsement who uniquely explains women's disinterest in pursuing STEM careers. Diekman et al. (2010) concluded that communal motivations can provide unique information about why women opt out of STEM careers because they are perceived as inhibiting communal goals.

Self-concept. From a developmental psychological point of view, vocational behavior is a developmental process whereby a person makes decisions that are congruent with his or her self-concept or personal orientation. This can apply to career choices in general. For example, in some of the earliest studies on the relationship between vocational choice and self -concept, Astin and Myint (1971) interviewed 5,387 girls about their grades, self-concept, and thoughts on whether or not they could succeed in "prestigious" careers. However, girls who received higher grades in high school were more likely to go into careers in the natural sciences or social services or professions like teaching.

However, girls who received lower grades were more likely to go into office work or to be housewives. It can be inferred that when a girl develops a high self-concept due to her high grades, she is more likely to pursue more upwardly mobile careers. This effect was gender specific, as grades and self-concept did not seem to effect whether or not men ultimately chose to pursue STEM careers (Astin & Myint, 1971).

Borg (1991) also surveyed almost 100 girls concerning self- concept and STEM participation. He hypothesized that because of this developmental process, the growth of female participation in male-oriented careers and the growth of male participants in female-oriented careers has remained stagnated. If girls have not previously succeeded (or been given the proper opportunities to succeed in STEM), they are less likely to believe that they will be successful in STEM careers or majors. Thus, women will continue to pursue only careers in which they feel they can succeed in, such as teaching or the humanities. When most girls reach the point where they must choose careers, girls have less experience with computers and perceive that they are behind, decreasing their likelihood of entering the fields of science, engineering, and technology Borg, 1999).

Astin & Myint (1971) argued that more opportunities and institutions need to be put in place so that women can develop the self-concept that they can succeed in STEM. This is still concerned true today by many researchers and educators today (Washburn & Miller, 2008).

Teacher attitudes, beliefs, and behavior. Classroom teachers have a powerful impact on student participation in activities, classes, and careers through their behaviors and interactions with students. Negative judgments about their ability, as well as limited access to qualified teachers and resources may contribute to the non-participation in STEM by females.

Teachers can be important influences on a girl's engagement in STEM. Researchers have hypothesized that teacher's stereotyping of STEM fields as "male" fields, results in differential treatment in math and science classrooms. Knowledge about teacher attitudes towards gender equity and their behaviors that encourage or discourage young women in science and mathematics will help educators to design educational experiences and interventions that effectively reduce the gender gap in STEM fields (Plucker, 1996).

In a study measuring teachers' perception of gender inequality in STEM, Plucker (1996) found that 41.1% of teachers reported no level of familiarity with research concerning the representation of females in math and science, although 78.6% of respondents did believe that women were underrepresented in science. Teachers who report little to no familiarity with research concerning females in science tended to think that women were adequately represented when they really were not. When teachers were asked if they had attempted any interventions to increase the participation of women in math and science, 57% percent of teachers reported using interventions, with the most commonly used techniques being curriculum modifications and programming strategies. However, over 70% of these interventions were short-term (Plucker, 1996). Plucker concluded that most teachers believed boys to be more confident, more interested, and to have a higher achievement in math and science than girls, and teachers do not see themselves as having casual responsibility for gender differences.

The results of Plucker's study suggest that the possible causes of gender differences within science and education should be more frequently covered in teacher education programs in order to give girls as many resources as possible to succeed in STEM.

Engagement. Another theory about women's lack of interest in STEM focuses on the concept of "engagement," meaning the length of time a female remains interested in the ideas, concepts, or subject matter of STEM. Campbell, Jolly, and Perlman (2004) conducted a study with young men and women who took an average of 3.8 years of math in high school and were interested in pursuing a degree in engineering after high school. All the students were sure about their commitment to the major; however, after graduation the men who participated were four times more likely to major in engineering.

The researchers proposed that there are several factors that contribute to whether or not a woman goes into STEM. These are capacity (possessing the knowledge and skills required to advance to increasingly rigorous STEM content) and continuity (institutional and programmatic opportunities and material resources). Both of these factors are contingent upon engagement (having an approach to STEM that includes qualities like awareness, interest, and motivation). It is proposed that due to a variety of causes, like lack of confidence and low self-concept, engagement is lowered once a woman continues to pursue STEM (Campbell et al., 2004). Campbell et al. (2004) proposed that special programs and support systems be put in place so that engagement is not lost as women pursue careers and majors in STEM. However, it is important to note, that while there are strong arguments for this model and its utility as an organizing framework, it is a model that needs to be tested (Campbell et al., 2004).

Familial relationships. Familial relations also play a role in which careers women pursue. In one of the first studies examining the relationship between vocational choice and gender, Astin and Myint (1971) reported that girls were more likely to pursue careers in the natural and social sciences when their fathers encouraged them to pursue higher education, with 56.7% of the girls who pursued STEM citing their fathers as encouragers. Women are also more likely to go into male dominated careers if their father has high occupation and education levels. Cocoran and Courant (1985) studied 800 young women throughout high school and university as they pursued higher education and careers. Even 5 years after completing school, a father's encouragement continued to be an important predictor of a girl's career orientation (Corcoran & Courant, 1985).

The educational attainment of the same-sex parent also predicts educational attainment. Baker (1982) found that the educational attainment of the mother is a stronger determinant of the educational attainment of women than the educational attainment of the father, and Hackett (1989) found that women who mothers worked outside the home were more like to "aspire to be higher-skill innovative and prestigious jobs than women whose mothers will fulltime housewives." In general, Corcoran and Courant (1985) found that having traditional versus nontraditional parents affected sex-role differentiation, and women who valued traditional roles were more likely to choose "female" jobs. Thus, one could assume that a women who grew up in a household in which the mother worked outside of home would be more likely to pursue prestigious careers such as STEM, compared to women who were raised in households where the mother did not work outside the home.

Role models. Cheryan, Siy, Vichayapai, Drury, and Kim (2011) discussed the implications of male and female role models in women's success in STEM. Male-dominated fields can be unwelcoming to women on two dimensions. First, because there are many more men in the field than women, this may activate negative stereotypes about women's performance and bring about underperformance among women due to the fact that women may assume that they are not capable of succeeding in these field, thus, the lack of women pursuing them. Second, STEM fields are assumed to embody stereotypes that are incongruent with the female gender role. These stereotypes include social isolation and singular focus on technology, which the female gender is stereotypically not supposed to embody. Women who encounter stereotypical STEM students may feel dissimilar to them, and as, a result, not feel like they "belong" in STEM. As a result, STEM stereotypical role models who are supposed to inspire women to pursue STEM, might accidently discourage those they are trying to benefit. However, positive, effective female role models can protect women who are personally invested in STEM against the harmful effects of gender stereotypes, by helping to prevent underperformance, by improving their self-views, and by improving their implicit attitudes towards STEM (Cheyran et al., 2011).

Cheryan et al. (2011) propose that while STEM stereotypes are incongruent with the female gender role, that women can convey them, as well. Even though it is widely accepted that female role models are more effective than male role models in inspiring girls and women to enter STEM fields, when women embody STEM stereotypes, they may evoke feelings of dissimilarity in in other women. Inferences about that person are based more on his or her gendered characteristics that on that gender. When female role models embody these stereotypical traits, they may be just as powerful of a deterrent as when males embody them.

In two studies, Cheyran at el. investigated how gender and stereotypicality of role models influence belief in success in computer science. They hypothesized that encountering a stereotypical science role model would decrease women's but not men's success belief in computer science compared to encountering a non-stereotypical role model or no role model. They also predicted that role model's gender would have less of an influence on women's beliefs that they can be successful in STEM than role model stereotypicality.

Ceryan et al. (2011) found that women anticipated lower success in computer science after interacting with a stereotypical role model as compared to a non-stereotypical role model. After interacting with a model, the women rated how much they felt they could succeed in computer science on a scale from 1 *(not at all)* to 7 (*very much*). In the baseline condition, women anticipated greater success (average rating= 3) than those in the stereotypical condition (average rating = 2) and a similar level of success to those in the non-stereotypical condition (average rating= 3). Thus, they were able to conclude that role models who embody stereotypes of computer science are detrimental to women's anticipated success in computer science.

Ceryan et al. (2011) argued that interacting with one member of a field, even briefly can shape students' beliefs about their potential for success in that field. They found that STEM models that projected stereotypes of the field interfered with women's beliefs that they would be successful in STEM fields. Women are routinely exposed to these stereotypes through outlets such as the television and advertising. It can be argued that many who have achieved success in STEM do not match these stereotypes, thus, the prevalence of these stereotypes negatively impact those women who are considering whether or not to chose a career in STEM.

The authors suggest a change in the way that society encourages women to enter STEM. Instead of focusing on selecting STEM role models simply based on gender, it is suggested that non-stereotypical role models be chosen regardless of gender for those recruitment purposes. Further research needs to be done on this topic to truly understand the potential effects.

Implicit and explicit occupational gender stereotypes. Another reason why women may choose not to enter STEM is because of implicit and explicit occupational gender stereotypes. As previously stated, many popular beliefs state that because of personality and temperamental characteristics, men and women should not enter the same career fields. Although explicit gender stereotyping is much more taboo in today's society, implicit gender occupational stereotyping still presents a problem. White and White (2008) considered the occupational stereotypes for three occupations- an engineer, an accountant, and an elementary school teacher. They sought to use the IAT (the Implicit Attitudes Test) to test their hypothesis, which was that the occupation pair with most pronounced difference in explicit gender stereotypes would have a larger IAT effect, and it would also have a stronger implicit stereotype than other pairs.

Their results showed that for explicit stereotypes, the occupations were rated from masculine to feminine as expected. On a scale of 1-7 (1 = masculine, 3 = neutral, and 7 = feminine), mean ratings for the engineer were most masculine (2.3), the accountant was rated nearly neutral (3.6), and the elementary school teacher was the most feminine (5.6). The IAT results for implicit stereotyping followed the same pattern. White and White (2008) concluded that implicit occupation sex stereotypes may provide information about what a person feels about someone performing a job versus what they think or are willing to express. They propose that implicit measures may predict behaviors better than explicit measures. Implicit measures may be especially useful in understanding why someone who expresses gender-neutral explicit stereotypes might still respond more positively to a person of one sex over another in a particular job.

Discovering other career options. Arnold (1993) argued that one of the reasons that women do not pursue STEM is the discovering of other career options, some unbeknownst until they entered college. Arnold (1993) founded the Illinois Valedictorian Project, a longitudinal study that followed 81 students who graduated at the top of their class. Ten years after graduation, Arnold (1993) found that gender was the single most salient determinant of the career aspirations and attainment of the valedictorians. While 14% more women than men received graduate degrees, the women only received degrees in the humanities and education.

When Arnold (1993) inquired why the women only pursued degrees in education and the humanities, one of the reasons given was that, even though a few women had considered entering STEM at the beginning of college, after taking other classes in college (e.g. for personal enrichment or for the fulfillment of general education requirements). Some of these women cited that the discovering of other career paths, such as art history or world religion, influenced their eventual career attainment.

However, Arnold (1993) acknowledged that there are probably other reasons for women's non-pursuit of STEM. Following this logic of discovering other career options, men should be equally as swayed away from STEM, but this was not the case. Arnold (1993) suggested that more longitudinal studies be conducted in order to understand more of the underlying reasons why women do not pursue STEM.

Romantic Goals and STEM

All of this research sheds light on the ongoing problem of women's non-pursuit of STEM, but there is also new research stating that a variable, not previously considered, might be influencing whether or not women chose to pursue STEM- romantic goals. While many of the reasons why romantic goals are so influential draw on many of the other socio-psychological theories such as stereotype threat, role congruity, and familial obligations, romantic goals have their own powerful influence on whether or not women pursue STEM or humanities-oriented majors and careers.

Relationship status and career aspiration. Relationship status has huge impact on career aspiration that starts at a young age. Women, in particular, are socialized from a young age to believe that their bodies, emotions, and psychology make them especially designed for romance. Pursuing romance is considered part of the essence of being female (Rudman & Glick, 2008). One of the most important life course events for a woman is the formation of intimate relationships. In general, romantic goals play a huge role in American society. From the mid 1970s to the late 1990s, 80% of female high school seniors and 75% of male seniors reported that they expected to marry someday and similar percentages rated having a good marriage and family life as "extremely important." Gender differences are moderate, but they are consistent- young women express a greater desire to marry, they place greater importance on marriage, and they have higher expectations of lifelong marriage (Meier, Hull, and Ortyl, 2009).

This desire for romance has a major impact on career aspiration. Historically, women avoided careers that were perceived as too masculine, that would take them away from their families, or that would be perceived as too stressful, such as firefighting or police work (Rudman and Glick, 2008). To a certain extent, some of historical backlash remains today. Many studies find a negative correlation between high career aspiration and relationship status. The first studies done on STEM and relationship status found that single women, independent of educational status were more likely to go into STEM related fields than women who were married (Astin & Myint, 1971). This finding still remains true research indicates that although women's contemporary employment patters reflect higher levels of employment and smaller families started later in life, that women in relationships still are less likely to pursue STEM for previously unbeknownst reasons (Fassinger & Asay, 2008).

Furthermore, romantic goals and the pursuit of romantic desirability may affect career choices among women because studies have shown that fear of singleness may affect the careers that women choose. Morris, Sinclair, and DePaulo (2007) studied the perceived legitimacy of marital status discrimination. It has been argued that Americans accept an ideology of marriage and family that glorifies marriage as the most important peer relationship. Marriage is often seen as a normative, developmental milestone that most people want and expect to achieve. To the extent that this interpretation of marriage is correct, singles could be a considered a stigmatized group, which thus, puts more pressure on women to pursue careers in which they would be considered romantically desirable

Romantic goals and perception of desirability. Pursuit of romantic love has placed prescriptive stereotypes on women throughout history. Today, traditional romance narratives portray women in a superficial manner. While women are "courted" by men, women are only sought after if they display certain feminine qualities such as youth and beauty. These qualities are short-lived compared to the qualities that men are valued for, such as power and wealth (Davis, 1990). In the media and popular culture, women are taught to view their worth in terms of their ability to attract attention from the opposite gender (Rudman & Glick, 2008).

In order to pursue romantic goals, women may change the way that they pursue certain career or intellectual goals in order to confirm to stereotypes and to be perceived as more desirable to men. Rubman and Glick (2008) state, "in essence, traditional romantic ideologies encourage the 'fairer sex' to limit their personal ambitions in exchange for the love and protection of men." Often, when women desperately long for romantic desirability, they create so much self- expansion that there is a transformation of the self into a new expanded identity (Aron and Aron, 1997). Zimmer-Gembeck and Petherick (2006) found that couples perceive relationships as being more successful when goals are in line. Often, this can include some sort of occupational change, and research shows that women tend to give up more on the career end than men.

Prentice and Carranza (2002) argue that gender stereotypes are highly prescriptive. This means that gender stereotypes are often used to justify or legitimize a social system in place. For example, descriptive stereotypes are beliefs about what members of a certain category are typically like whereas a prescriptive stereotypes are beliefs about what member of a certain category should ideally be like (Rudman & Glick, 2008). In relationship to gender stereotypes and romantic desirability, the stereotype that women are warm and caring is matched with the societal prescription that they should be warm and caring. Similarly, the stereotypical belief that men are strong and agentic is matched by the stereotypical prescription that they should be strong and agentic. These gender stereotypes often influence what is considered desirable to the opposite sex in a male or female.

Prentice and Carranza (2002) had participants complete questionnaires in which they self-related themselves based on gendered traits. Prentice and Carranza (2002) grouped the traits into categories. There was a cluster of positive, feminine characteristics that were considered more prescriptive for women than men. Participants also indicated that it was less desirable for a woman to be smart and intelligent. Overall, most participants rated social traits as being more desirable in women than men, and traits dealing with rationality and effectiveness more for men. When it came to characteristics that women and men prefer in mates, women ranked ambitiousness higher in men then men rated it in. These results support the theory that women succumb to romantic goals and show less desire in STEM in order to appear more desirable to men. Therefore, women would lean more towards careers that are perceived to be more social and less dealing with rationality in order to appear more desirable to men.

Park, Young, Troisi, and Pinkus (2010) sought to see if everyday romantic pursuit played a role in women's attitude toward math and science. According to Park et al. (2010), people actively strive to create, modify, and maintain impressions of themselves to others. Women are socialized to desire to be perceived as desirable. Thus, women may be motivated to act in ways to enhance their perceived desirability at a young age. In Western society, women are expected to be communal and nurturing, and are expected to occupy familial and occupational roles. However, men are expected to be dominant and occupy roles in which they are allowed to express this dominance.

Traditional romantic scripts in Western culture are highly gendered, and they prescribe how men and women should act, think, feel, and behave in romantic situations. In romantic contexts, men are expected to be generating their dominance, competence, and assertiveness. Women are expected to be passive, admiring, and accommodating towards men.

For men, wanting to be intelligent in STEM is not likely to conflict with being romantically desirable because men are encouraged to excel in male stereotyped domains. In contrast, women experience conflict between pursuing romantic and intelligence goals in STEM because traditional romantic scripts discourage women from appearing intelligent. For example, others view women who display romantic qualities negatively, but men do not experience these costs (Yoder, 1996). Given these findings, it is not surprising that women often suppress masculine qualities in romantic contexts, and women tend to act stereotypically feminine when interacting with men with sexist attitudes (Logel, Walton, Spencer, Iserman, 2009). Yet, it is interesting to note, that much of this confirmation to romantic goals is implicit. For example, when asked directly, female premed students were no less likely than male premed students to indicated that lovers (boyfriends, girlfriends, and spouses) had discouraged them from becoming doctors (Fiorentine, 1998).

Given this research Parks et al. (2011) sought to understand why women show diminished interest in STEM fields. They did this by studying the impact of romantic goal strivings in everyday life. According to Parks et al. (2011), goal pursuit can occur through voluntary choice or through exposure to environmental stimuli that automatically activate goals. Perceiving the behavior of others can also activate goals. Based on this research, they proposed that romantic goals could be activated or pursued by personal choice or through environmental cues. Once these goals are activated, women may embrace behaviors support romantic goals while suppressing conflicting goals, like the goal to do well in masculine domains, such as STEM.

Parks et al. (2011) designed several studies to examine the hypothesis that women but not men experience conflict between pursuing romantic goals and pursuing intelligence goals in STEM. Women may show less motivation to pursue intelligence goals in STEM, but not in other fields, when the goal to be desirable is activated. In one study, men and women were exposed to images that activated the goal to be romantically desirable. Then, they reported their current interest in STEM, and they expressed their current preference for majors. In the next set of studies, men and women overheard a conversation related to romantic goals, intelligence goals or friendship goals. Then, they reported their current interest in STEM, and their preference for certain academic majors. In the last study, Parks et al. (2011) used daily diary methodology to examine the impact of women's daily goal strivings on their choice of activities and interpersonal feelings.

Across the studies, Parks et al. (2011) found support for the hypothesis that when romantic goals are activated, regardless if they are activated by environmental cues or personal choice, women show less investment and interest in STEM, especially when viewing romantic images or overhearing a conversation about romance. The romance images predicted greater motivation to be romantically desirable than images relating to intelligence, t (70)= 8.21, $p < .001$, $d = .256$), and women who overheard the romantic conversation felt significantly less positively towards STEM than the women who overhead the intelligence conversation, $\beta = -.22$, $p < .05$, $sr^2 = .03$. Parks at el. (2011) demonstrated that the activation and pursuit of romantic goals has a far- reaching effect on women's attitudes and preferences in STEM.

I am very interested in Parks et al.'s research. However, I wondered what was the extent of romantic goal pursuit on occupational choices, especially when certain demographic information is involved. I hypothesized that when women comes from lower socioeconomic backgrounds and are reminded of their background before romantic goals are activated, they will be determined to follow through with their occupational goals, regardless of what other goals may be activated. Parks et al. (2011) acknowledged that certain goals can be over-ridden by others, and I believe that occupational goals can override romantic goals, especially when socioeconomic status is taken into consideration.

Socioeconomic Status

Definition of socioeconomic status. Social hierarchy, or stratification, is intuitively recognized everywhere, and it is thought that all social animals, even whale and wolves, appreciate or at least recognize social hierarchy. Socioeconomic status (SES) is one of the major influences on a person's life. SES indicates one's access to collectively desired resources, such as goods, money, power, friendship networks, healthcare, leisure time, and educational opportunities (Caston, 2012).

There is no simple way of determining socioeconomic status. For the last three decades or so, some scholars have defined SES as equivalent to annual income, which is the simplest and most common way of measuring it. However, others think that race or ethnicity should be included, and some think that health status should be included. An even greater complication is how to assign SES to those not in the labor force such as children or the elderly (Caston, 2012).

There are a few terms that are similar to SES, and many of them are used interchangeably. The first is social class, which is a Marxist concept. Social class measures tend to classify persons according to whether they own or control a business or whether they are laborers in such places (Wright, 1985). Instead of SES, Europeans tend to use the term, socioeconomic position. Some scholars like this term better because SES tends to connote meanings limited to occupational prestige, whereas, socioeconomic position takes into consideration more than that one factor (Caston, 2012).

Socioeconomic status can be determined by a variety of different things, and what standards define levels of socioeconomic status is debatable. There are several composite measures that often used to measure socioeconomic status. The most prominent and most frequently used of these is the Duncan Socioeconomic Index (SEI). The measure is a scalar quantity on a continuous scale and is ultimately based on subjective assessments of occupational prestige. Educational attainment and income are taken into consideration, and the underlying logic is that education is a prerequisite for a good occupation, and income is the reward (Duncan, 1962).

Kaare Svalastoga (1966) identified four major stratifying dimensions that operate in society: (1) the social status accorded to a position, (2) the political status or amount of power possessed by a position, (3) the economic status or amount of power possessed by a position, and (4) the informational status or amount of skill or knowledge required for a position. These four factors work together in order to determines a person's place in society. Socioeconomic status is directly related to the four.

Another common way to measure SES is the Household Prestige Scale, developed by Peter Rossi (1982). Rossi argued that the household was the primary unit of stratification. This way of measurement is much more complicated. Rossi (1982) asked a sample of adults to rate the social standings of households in terms of spouse's occupations, incomes, and ethnicities. Then Rossi (1982) regressed the ratings on characteristics of vignette examples to infer the relative influence of the social characteristics of families. The resulting equation allows researchers to assign unbiased status scores to households, based on the occupations, educational levels and ethnicities. While some argue that this approach is more objective than Duncan's, it has not received widespread attention because many are skeptical of the utility of the measure (Caston, 2012).

However, despite how complicated it is to define, the sound measurement of the SES of an individual or a group is important. For one, measures of SES are necessary to quantify or understand the level of stratification or inequalities in or between societies. If SES is not measured correctly, then social stratification and social inequality will be not measured properly. Second, without sound measures of SES, it is impossible to capture and understand the structure of a society. Relatedly, without sound measure of SES, it is impossible to understand the intergenerational change of social status over time. Fourth, without a sound measurement of SES, the relationship between other important social variables, such as race or sex, can be masked by the evident and often dominant relationship between outcomes and SES. Finally, SES matters because it has been related to health and life outcomes. In short, the more status or rank an individual or group holds, the better changes for them to have a long and healthy life (Adler, Boyce, Chesney, & Cohen, 1994).

Socioeconomic status and education. Socioeconomic status has a major influence on level and quality of education that a student receives (Lee & Burkam, 2002). While there are some social institutions that attempt to standardize education, there is a certain point, in which, education becomes more of a privilege than a right. For many American students, this point is high school graduation. After completing high school, many students from a low socioeconomic background, especially females, decide not to attend college.

In a classic study by Sewell and Shah (1967), they noted that low SES females that were high school seniors were more "realistic" about their college plans than low SES males that were also high school seniors. Sewell and Shah (1967) also noted that whether or not low SES females attended college was based more on SES then perceived intelligence. Even today, while more women then men are attending college in general, this still remains true. Women of a lower socioeconomic status are still less likely than their male counterparts to attend college (Sirin, 2005).

Students coming from a family to a middle to upper class background are said to enjoy academic advantages because they tend to have better preparatory education, score better on standardized tests, and have various "home field advantages" facilitating school success. On another level, huge disparities in tuition fees between prestigious versus mass universities gives middle class students greater access to the best schools. For example, parental willingness to pay for higher education is shaped by income and savings per child. There are also class differences in knowledge about higher education. Students from higher SES backgrounds excel within higher education because they have more information about the academic marketplace. They know which fields offer the highest incomes, and they know how to acquire competitive advantages (Davies and Guppy, 2005).

One of the suggestions for improving STEM performance among those of low SES is the improvement of STEM programs at community colleges. Hoffman, Starobin, Laanan, and Rivera (2010) studied the roles of community college in STEM education. Hoffman et al. (2010) acknowledged that many of the students attending community college come from lower SES backgrounds. From their research, they were able to give suggestions to help improve programs at community colleges to help those from a lower economic status to achieve in STEM. One of their suggestions was that community colleges place more emphasis on advising those who want to pursue careers in STEM. For example, they should ensure that students are warned about "gatekeeper" courses so that when students attend four-year institutions, they are prepared for the challenging STEM courses that they may face. Hoffman et al. (2010) also suggested the community colleges and four year institutions should work more in conjunction so that faculty members can discuss academic plans and what resources students need to achieve in community college and at four-year institutions.

I hypothesize that because students from a SES are forced to be more realistic about their college goals that those who choose to pursue STEM, will have a better understanding of what majors they will succeed in, and thus, they will they not be an easily swayed from their occupational goals by other goals.

Socioeconomic status and STEM. Overall, a student of low socioeconomic status would have many incentives for entering STEM fields. Majoring and pursuing a career in STEM merits much more prestige than careers in many other fields (Davies & Guppy, 2005). When students pursue lucrative fields of study, students are given a rich network of peers that makes it easier to ease into social mobility after graduation. However, the vast majority of students from low SES backgrounds tend to enter more humanities based programs.

Socioeconomic status and romantic goals. Socioeconomic status has an interesting effect on romantic goals and desirability. I propose that romantic goals would not have as much as an effect on women of low socioeconomic status for another reason. After interviewing hundreds of women on their major choices, Leppel, Williams, and Waldauner (2001) found that while men of high SES were more likely to choose majors that were perceivably more lucrative, women of a high SES were found to do just the opposite, most of them citing that they felt they had more freedom to major in whatever they wanted. They found that higher SES was more strongly associated with women selecting non-traditional majors than it was for men. I propose that this could be one of the reasons that women of a SES would be influenced, more so, by romantic goals, than women of a low SES. I believe this finding would be due to women of a low SES would have made a conscious and determined choice to pursue STEM, and most likely, would not believe that they would have a freedom to explore and engage in other interests.

When faced with making decisions about what careers to pursue, people are influenced by a variety of goals. When these goals are activated by cues in the environment, they can lead to thoughts and behaviors that support these goals. I studied the effects of exposing men and women to questions relating to romance vs. questions relating to friendship and how this relates to career choice. I did this in order to test Parks et al. (2011) theory that when romantic goals are activated, women are influenced to pursue occupations that make them appear more desirable. I also measured the effects of being reminded of one's socioeconomic status before or after being asked questions about career choice in order to see if this has any interaction between romantic goals and career choice. I hypothesized that women who were primed with romance would be less interested in STEM fields when compared to women who were primed with friendship because wanting to be romantically desirable is theorized to conflict with wanting to be intelligent in masculine domains like STEM. Furthermore, I hypothesized that women of low SES, who were reminded of their status before being primed with romantic goals, would be less influenced by romantic goals, if at all, due to having more of a focus on achieving career goals and being less influenced by thoughts of romantic desirability. I based this on SES research that women of low SES are more realistic about career goals, and are therefore, I expected that if they were serious about STEM, they would be less persuaded by romance. I did not expect the romantic, friendship, or SES primes to affect men, because there is no conflict being romantically desirable and being intelligent in masculine domains because previous research has shown that men are not influenced by these goals, mainly due to less societal pressures on their occupational choices.

Method

Participants. The participants were randomly selected from a list of all students who attend Houghton College. They were sent an email inviting them to participate in a survey. Due to an initial lack of STEM interested participants, a special recruitment email was sent to all students majoring in a STEM field. A total of 102 students participated in the study (81 women, 51.85% interested in STEM). Participants first answered questions gauging their interest in STEM and the humanities on a 7-point Likert scale. There were 5 conditions. In the *SES before/romance* condition, participants were asked questions pertaining to their socioeconomic status and were asked with questions relating to romantic desirability. In the *SES after/romance* condition, participants were primed with questions relating to romantic desirability and then were asked questions relating to romantic desirability. In the *no SES/romance condition,* participants were solely asked questions about romantic desirability. In the *SES/no romance* condition, participants were asked about their socioeconomic status, but answered questions about friendship (used as a control). In the *no SES/no romance* condition (control group), the participant simply answered questions about friendship. All participants then filled out a set of questions about career choices, that included several items asked them to once again rate their interest in STEM and the humanities. Finally, they completed a manipulation check and were debriefed.

Materials

SES. Following Duncan (1961), I assessed socioeconomic status using questions relating to one's parents' occupations and income, as well as, how many people were in the household, both currently and throughout childhood. Duncan's (1961) scale takes income and occupation into consideration, and based on the consensual ranking of the job and income level describes the individual's relative social standing.

Romance. Participants answered 30 questions taken from *The Development of the Attitudes About Romance and Mate Selection Scale (AARMSS)* (Cobb et al., 2003) on a Likert Scale of 1-7. The scale is normally used to assess an individual's interest in romantic relationships, the ways in which an individual chooses a significant other, and how quickly a person moves typically in a relationship. Due to the romantic nature of the questions, I decided to use the questions from this scale to activate romantic goals.

Friendship. Participants answered 30 questions similar to the questions in the AARMSS in length and type but about friendship. I took the same questions from the AARMSS, but I changed any words or references about romance to friendship.

Interest in STEM. Participants were first asked, "Rate your interest in pursuing a degree or career in science, technology, engineering, and mathematics (STEM fields) from 1 (*strong interest*) to 7 (*no interest*)."At the end of the study, participants were asked to rate from 1 (*strong interest*) to 7 (*no interest*), the following statements: "I am very interested in pursuing a career in math or science," and " I consider myself to be a 'math or science' person. "

Interest in humanities. Participants were first asked, "Rate your interest in pursuing a degree or career in the arts or humanities from (*strong interest*) to 7 (*no* *interest*)." At the end of the study, participants were asked to rate the following statements from 1-7: "I am very interested in pursuing a career in the arts and humanities," and "I consider myself to be more artistic or creative than mathematical."

SPSS. I used IBM SPSSS Statistics 19 in order to compute statistical analysis on the data produced from the study.

Manipulation check. Participants were asked what they thought the study was measuring. No participants were able to guess correctly.

Results

Fifteen participants were removed from analyses were because they failed to complete the survey. The final sample consisted of 87 participants (70 women, $M_{year\ of\ college} = 1.68$, SD = 1.27, 50% interested in STEM).

Interest in STEM. There was no significant main effect for the romance prime and repeated measures of STEM interest, but there was a significant interaction between the romance condition and the linear trend of repeated measures of STEM interest, $F(1,85) = 5.70$, $p = .019$, $\eta^2 = .063$) (See Table 1). Figure 3 shows the interaction. For the control conditions, there were no changes over time, but for the romance prime condition, STEM interest increased for the repeated measures.

Figure 3

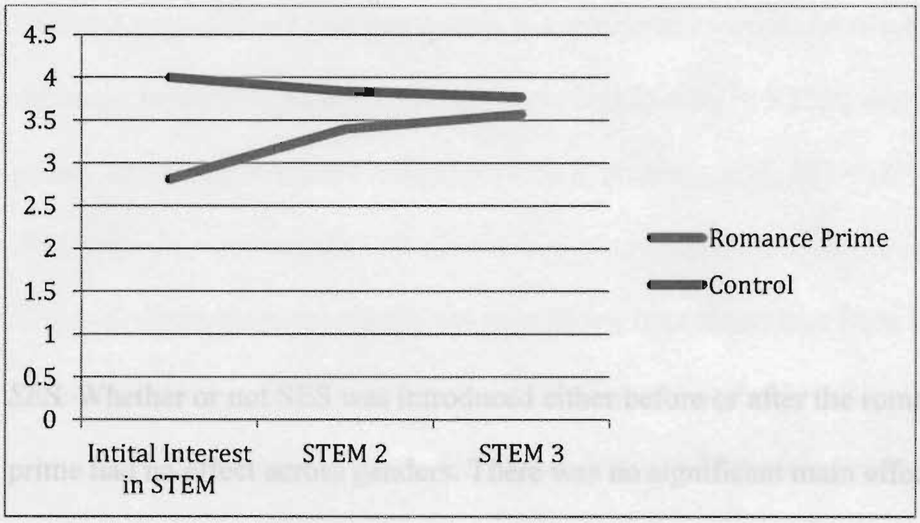


Table 1

Tests of Within-Subjects Contrasts

Source	factor1	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
factor1	Linear	2.874	1	2.874	1.556	.216	.018
	Quadratic	.436	1	.436	.315	.576	.004
factor1 * RomanceO	Linear	10.529	1	10.529	5.702	.019	.063
	Quadratic	.919	1	.919	.663	.418	.008
Error(factor1)	Linear	156.965	85	1.847			
	Quadratic	117.794	85	1.386			

SES. Whether or not SES was introduced either before or after the romantic desirability prime had no effect across genders. There was no significant main effect for the SES prime and repeated measures of STEM interest, $F(1,85) = 3.375$, $p = .070$, $\eta^2 = .038$).

It is also interesting to note that there was a positive correlation between SES and choice of major, $r = .331$, $p < .05$. This affirms Davies and Guppy's (1997) findings that students who come from more affluent backgrounds tend to choose more affluent majors, in this case, STEM. This is was also affirmed in a negative correlation between the level of mother's education and interest in the humanities, $r = -.333$, $p < .05$. The same negative correlation was found between the level of father's education and interest in the humanities, $r = -.328$, $p < .05$.

Romantic Desirability. I examined whether romantic desirability influenced women's interest in STEM after they were primed with questions about romance that triggered thoughts of romantic desirability. Whether or not SES was introduced either before or after the romantic desirability prime had no effect across genders. The results were not significant, F (1, 42) = 1.242, p = .305, $\eta^2 = .151$.

Romance. I also examined the relationship between romance and interest in STEM. I hypothesized that those were in a relationship would be more influenced by the romantic desirability prime, and thus, show less interest in STEM when exposed to the prime. The results were did not support the hypothesis, F (1, 85) = .229, p = .116, $\eta^2 = .734$.

Overall, these results did not support my hypothesis that there is an interaction between interest in STEM, romantic desirability, and SES. However, they do provide more evidence that there is some interaction between SES and interest in STEM majors and careers.

Discussion

Despite women making great advances in the occupational domain, women are still entering STEM fields at considerably lower rates than men (Beede et al., 2011). Countless hypothesizes and theories, citing everything from innate biological differences to societal pressures, have been constructed trying to explain why this still exists. However, Parks et al. (2010) sought to see if another previously un-researched theory might be the cause of the lack of women entering STEM- romantic goal pursuit.

Parks et al. (2010) found that romantic desirability influences whether or not women chose to pursue careers in STEM fields. In her theory, when STEM-interested women are primed with romantic desire, they should have less of a desire to pursue STEM because STEM is a masculine domain, and pursuing a masculine domain could make women believe that they are less romantically desirable. Parks et al. (2010) also found that these same results would not influence whether or not men decided to pursue STEM because being romantically desirable does not conflict with pursuing stereotypically masculine domains. These effects do not generalize to other academic domains. In Parks et al. (2011) women actually reported greater interest in the humanities after they were primed with romance.

I hypothesized that SES would have an interesting affect on Park's et al. (2010) hypothesis. I hypothesized that women who were interested in STEM who came from a lower SES background would be less affected by romantic goals, and they would be more focused on fulfilling career obligations. I also hypothesized that women who were of a lower SES would be less affected by the romantic desirability prime than women of a higher socioeconomic status.

In my study, I did find significant results due to the romance prime, and interest in STEM. However, the romance prime worked in the opposite way as expected- when primed with romance, women proceeded to show more interest in the STEM. Other interactions between interest in STEM and socioeconomic status, and interest in STEM and romantic desirability did not have any significant main effects.

The current results failed to prove my hypothesis due to several limitations and considerations. The populations that I sampled were all students at a small, liberal arts college. In keeping with purpose of the liberal arts traditions, most participants who completed the study were almost equally interested in the humanities and STEM. Also, about 60% of people who participated in the survey were interested in pre-professional careers (i.e. education, business). Thus, they were not primarily interested in STEM or the humanities, as a major or a career goal. It is also possible that Park's et al. studies are not completely accurate, due to the fact that they have not been replicated up until this point. Even though her effect was fairly large, until it can replicated, it may not be completely accurate.

If I were to complete this study again, I would probably do it in traditional experiment form, rather than through surveys, in order to create a more legitimate study environment. Further research should be done on either a larger sample or at a college that is not so liberal arts focused. Further research should also be conducted to discover how pre-professional women are affected by romantic goals. A study of this kind cannot adequately study this, and it would be interesting to see if romantic desirability affects how they pursue careers in traditionally masculine domains such as business. Further research should also be conducted on the long-term impacts of romantic goal desirability. Park et al.'s study and my own only examined the possible short-term affects. Examination of the long-term impact of romantic goals could provide more information about how goal pursuit affects career choice.

Conclusion

While the present study may not have been successful in proving the relationship between romantic goal pursuit, SES, and STEM, there are many psychological and social factors that influence whether or not girls pursue STEM. More research needs to be done examines the pursuit of romantic goals and occupational choice, and how about how socioeconomic status plays a role, and preventative measures need to be put in place, so that females can pursue their occupational goals in spite of these societal pressures.

Appendix A

Romantic Desirability Questions

1) Living together before marriage will improve our chances of remaining happily married.
1 2 3 4 5 6 7

2) We will likely be happier in our marriage if we live together first.
1 2 3 4 5 6 7

3) There is only one true love out there that is right for me to marry.
1 2 3 4 5 6 7

4) There are a number of people in the world with whom I could be happily married.
1 2 3 4 5 6 7

5) Somewhere, I have a "soul mate" I should marry, a special partner who is uniquely suited to me and vice versa.
1 2 3 4 5 6 7

6) Our feelings of love for each other should be sufficient reason for us to get married.
1 2 3 4 5 6 7

7) Finding the right person to marry is not something that I have sufficient control over.
1 2 3 4 5 6 7

8) Getting married will happen naturally without much effort by me.
1 2 3 4 5 6 7

9) Couples who are too similar have relationships that are dull and boring.
1 2 3 4 5 6 7

10) Before I get married, I must be thoroughly convinced that I will be a good spouse.

1 2 3 4 5 6 7

11) I am sure that most of my peers and I will one day be married.
1 2 3 4 5 6 7

12) Some people are simply not good marriage prospects for me.
1 2 3 4 5 6 7

13) I should wait until I feel completely prepared for marriage before I get married.

1 2 3 4 5 6 7

14) My future spouse and I should be best friends before we get married.
1 2 3 4 5 6 7

15) I should wait to marry my sweetheart until we have proven our relationship is strong enough to stand the test of time.
1 2 3 4 5 6 7

16) It is a good idea for us to live together before getting married, as a way to "try out" our relationship.
1 2 3 4 5 6 7

17) Living together is a good way for seeing our workable our relationship would be.
1 2 3 4 5 6 7

18) There is a "one and only" right person in the world for me.
1 2 3 4 5 6 7

19) In the end, our feelings of love for one another, should be enough to sustain a happy marriage.
1 2 3 4 5 6 7

20) As long as we love one another, we should not let any obstacles get in the way of us getting married.
1 2 3 4 5 6 7

21) Only a fool runs away from people that they love deeply.
1 2 3 4 5 6 7

22) Finding the right person to marry is more about luck than effort.
1 2 3 4 5 6 7

23) If I wait long enough, the right person to marry will come my way someday.

1 2 3 4 5 6 7

24) Being similar to my partner is an important consideration for me when deciding to get married.
1 2 3 4 5 6 7

25) Our relationship will be stronger if I marry someone who is like me in many ways.
1 2 3 4 5 6 7

26) I should marry someone whose personal characteristics are different from my own.
1 2 3 4 5 6 7

27) I would marry my sweetheart even if he or she was not completely ideal for me.
1 2 3 4 5 6 7

28) I should not marry my sweetheart unless everything about our relationship is pleasing to me.
1 2 3 4 5 6 7

29) The person that I marry needs to have all the qualities that I look for in a mate.
1 2 3 4 5 6 7

30) I should wait before I get completely prepared for marriage before I get married.

1 2 3 4 5 6 7

Appendix B

Friendship Questions

1) Before I consider someone a close friend, we would have to be associates for a long time.
1 2 3 4 5 6 7

2) My friendships are stronger if we share a lot of the same interests.
1 2 3 4 5 6 7

3) I can only have one best friend at a time.
1 2 3 4 5 6 7

4) There are a number of people in the world with whom I could be a good friend with.

1 2 3 4 5 6 7

5) Somewhere, I have a "best friend," who understands all me completely.

1 2 3 4 5 6

6) Similar interests and background are enough for me to be choose to be friends with someone.

1 2 3 4 5 6 7

7) Finding good friends is not something that I have complete control over.

2 3 4 5 6 7

8) Making friends happens naturally for me.

1 2 3 4 5 6 7

9) Friends who are too similar have relationships that are dull and boring

1 2 3 4 5 6 7

10) Before I make an effort to be friends with someone, I must be thoroughly convinced that we would be good friends.

1 2 3 4 5 6 7

11) I am sure that I will have at least one close friend throughout every stage in my life.

1 2 3 4 5 6 7

12) Some people are simply not good friend prospects for me.

1 2 3 4 5 6 7

13) I should wait until I feel completely sure that I could be a good friend to someone before I pursue a friendship with him or her.

1 2 3 4 5 6 7

14) My good friends had been in my life for a long time before I considered myself close to them.

1 2 3 4 5 6 7

15) I should wait to consider an associate a friend when relationship is strong enough to stand the test of time

1 2 3 4 5 6 7

16) It is a good idea for me and my potential friends to do a lot of activities together to see how much we have in common.
1 2 3 4 5 6 7

17) Volunteering is a good way to make new friends.
1 2 3 4 5 6 7

18) There is a one "best friend" in the world for me.
1 2 3 4 5 6 7

19) In the end, I am sure that all my friendships will survive the test of time.
1 2 3 4 5 6 7

20) As long as me and another person have some similar interests, there is no reason why we should not be friends.
1 2 3 4 5 6 7

21) Only a fool thinks that they have enough friends.
1 2 3 4 5 6 7

22) Finding a best friend is more about luck than effort.
1 2 3 4 5 6 7

23) I already met my lifelong best friend(s).
1 2 3 4 5 6 7

24) Being similar to a person is an important consideration for me when deciding to be friends with them.
1 2 3 4 5 6 7

25) Our relationship will be stronger if I become friends with someone who is like me in many ways.
1 2 3 4 5 6 7

26) I should become friends with someone whose personal characteristics are different from my own.
1 2 3 4 5 6 7

27) I would become friends with someone even if he or she was not completely ideal for me.
1 2 3 4 5 6 7

28) I should not consider an associate a friend unless everything about our relationship is pleasing to me.

1 2 3 4 5 6 7

29) My best friend and I are completely capable in every way.

1 2 3 4 5 6 7

30) I should wait until my life is stable before I start making new friends.

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