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Abstract

The purpose of the present study was to investigate the potential moderating influence of the interaction of gender stereotype beliefs regarding male and female math ability and experiences of incivility on the career path preferences of female undergraduate students. This research is spurred by the current low levels of females entering historically masculine trades despite advances in women’s rights and increased opportunities within those trades. Surveys asking about the participants’ gender stereotype beliefs, experiences of incivility, and career path preferences were administered to 144 female undergraduate participants from a small Midwestern liberal arts university. Descriptive statistics, correlations, and scale reliabilities are reported for each survey. The survey results indicate that the participants do not endorse gender stereotypes, have not experienced more incivility than would be expected by chance, and the moderation hypothesis was not supported. Discussion around these findings is provided and limitations and directions for future research are discussed.
Chapter I

Review of the Literature

Someone who holds conventional, oversimplified, and harmful beliefs about male and female behavior based on a patriarchal paradigm like the one that has existed in Western society for centuries is engaging in gender stereotyping (Kiefer & Sekaquaptewa, 2007; Liu, Chi, Friedman, & Tsai, 2009; Pavlova 2009; Wecker, Krombholz, & Sokolov, 2009). An example of this would be a young girl who receives dolls to play with (a toy that inspires nurturing) while her parents give her brother a telescope (a toy that inspires scientific exploration). The parents cannot know the preferences of the boy and the girl, yet make assumptions about what their children might like based on their own childhoods, what society says children of different genders are supposed to like, and what they have seen other little girls and boys playing with. This preconceived notion of what a male or female child would have interest in is a stereotype, and more importantly, it is gender-based. These gender stereotypes, while seemingly innocuous and accepted, shape the child’s awareness of the world, their sense of self, and their expectations of their place in the world (Hodges & Perry, 2010; Steinmayr & Spinath, 2009; Tobin, Menon, Menon, & Spatta, 2010; White & White, 2006).

Someone who tries to manipulate another person via subtle but rude behavior such as gossiping, sneering, snickering, and social exclusion may be engaging in acts of incivility (Caza & Cortina, 2007). An example of this might be a committee member who
feels one of the other committee members is not doing enough for the company gathering. Instead of talking to the offending member and airing valid complaints, the angry committee member engages in political maneuvering to get the other members angry with the offending member. Often these acts of incivility seem harmless and juvenile, but the aftermath can be emotionally damaging to the victim (Cortina, Lonsway, Magley, Freeman, Collinsworth, & Fitzgerald, 2002). When an aggressor commits acts of incivility against women who do not follow conventional (stereotypic) female behavior, the aggressor is trying to manipulate the women into acting more “appropriately” (DeWall, Altermatt, & Thompson, 2005; Roscigno, Hodson, & Lopez, 2009).

Overt gender stereotyping can be harmful to women because they more commonly internalize these beliefs (White & White, 2006). When a female internalizes a stereotypical belief, it can lead to lower performance expectations (relative to men) that are inherent to the stereotype (Huguet & Rgner, 2009; Kiefer & Sekaquaptewa, 2007). An example of this is a young girl who finds out that boys typically perform better than girls in math class. The girl starts to doubt her own skills, is so worried that she falls behind in math class, and falling behind reinforces this adopted belief that females are less competent in math. If this stereotype-based belief persists into high school and college it can potentially limit career path options for young women (Brown & Pinel, 2003; Tobin et al., 2010).

Research has indicated that gender stereotypes exist in our society and that these stereotypes have the possibility of influencing the career choices of individuals in undergraduate studies (Berdahl, 2007; Fountain, 2007; Kiefer & Sekaquaptewa, 2007). Incivility can function to enforce gender stereotypes about women as fellow students,
teachers, coaches, and friends react rudely to women acting unconventionally (i.e., “unwomanly”). This is of great concern because areas of high job growth are occurring in careers that are more traditionally thought of as being male-dominated (often math, science, engineering, and technology occupations like information technology or research and development, resulting in increased opportunities for women in these fields (Delisle, Guay, Sencal, & Larose, 2009; Fountain, 2000; Gupta, Turban, & Bhave, 2008). This study attempts to examine how undergraduate female students perceive gender stereotypes and whether or not these stereotypes are related to career choices. Furthermore, this study examines how the frequency of incivility, as experienced by this sample, moderates the hypothesized relationship between gender stereotype acceptance (or rejection) and career goals. Although much work has been done in the field of gender stereotype research, this study contributes to the field by adding relevant information about how incivility, in conjunction with gender stereotypes, results in career path selection into either male or female dominated fields.

**Gender Stereotyping**

Gender stereotyping is the overly simplistic categorization of gender traits as ideally male or female (Delisle et al., 2009; Gupta et al., 2008; Logel, Iserman, Davies, Quinn, & Spencer, 2009; Tobin et al., 2010). This categorization often leads to inequality between the sexes overtly through pay differences, promotion decisions, and sexual harassment. It also leads to passive inequality, via acts of incivility (Liu et al., 2009; Reio, & Ghosh, 2009; Roscigno et al., 2009). Evidence of gender stereotyping becoming less socially and legally acceptable in our society can be found in the form of Title VII of the Civil Rights Act of 1964, the federal court case Price Waterhouse v. Hopkins (1989),
and the federal court case of Doe v. City of Belleville, IL (1997). These landmark decisions in the U.S. legal system reflect a society that has become aware of how gender stereotyping and inequality function to disenfranchise the general female population.

The first hurdle in understanding how inequality persists between the sexes is to understand the difference between gender harassment and sexual harassment. The discrepancy exists not in the actions but in the intent, a subtle conceptual shift that needs to take place in order to view sexual harassment as a behavior that is not necessarily sexual. Berdahl (2007) discusses how personality characteristics desired in men (assertiveness, independence, and dominance) are more socially valued than the personality characteristics desired in women (modesty, deference, and warmth). Gender harassment is a form of hostile harassment motivated toward individuals who violate these gender ideals by taking on personality characteristics normally assigned to the opposite sex (Berdahl). This sexist antipathy is different from the typical view of sexual harassment as motivated by sexual desire. The author used a measure of gender ideals for personality, the Bem Sex Role Inventory (BSRI; Bem, 1974), to test for deviance from desired gender characteristics. Results indicate that “masculine” women experience 1.5 times the amount of harassment that “low masculine” women experience. As such, sexual harassment is seen as a mechanism for punishing gender role violators and thereby a way to enforce different standards of behavior in women and men (Berdahl). This may take the form of different expectations, terms, and conditions of employment based on sex and gender.

DeWall et al.’s (2005) results are consistent with a system-justification model of stereotypes, which implies that paternalistic stereotypes combine negative competence
traits, negative power traits, and high virtue traits, to make the stereotyped group less threatening to the societal status quo (Delisle et al., 2009; Gupta et al., 2008). In this system-justification model of stereotypes, the homemaker is the epitome of this paternalistic stereotype, as this subgroup has desirable status (high in virtue) but is politically inert (low in culturally recognized power) (DeWall et al.). A professional female is a threat to the status quo, as this subgroup has high power, high virtue, and furthermore is in competition for resources typically rewarded to successful males (DeWall et al.).

Sometimes gender stereotypes become so pervasive that they are internalized by the targeted group, affecting both motivation and performance. This is the case in the study conducted by Kiefer and Sekaquaptewa (2007), which assessed the relationships between implicit stereotypical beliefs, gender identification, and performance in a calculus course and math-based career goals. Kiefer and Sekaquaptewa’s (2007) study indicates that chronic activation of implicit stereotypes might leave women vulnerable to stereotype threat, the perception of the stereotype as self-relevant. Results show that lower implicit stereotyping was a predictor of better performance for women with low gender identification but not high gender identification. Greater implicit stereotyping predicted less motivation to pursue a mathematical career in women with high gender identification but not for women with low gender identification. The results of Kiefer and Sekaquaptewa’s study indicate that implicit gender stereotyping, in conjunction with gender identification, impact performance and motivation in the field of mathematics.

Similarly, White and White’s (2006) research on implicit and explicit gender stereotyping in different occupations examined the occupations of engineer, accountant,
and schoolteacher. They used the Implicit Association Test (IAT), which involves measuring underlying automatic associations through speed of response where a faster (strong) response indicates a stereotyped association and a slower (weak) response indicates a non-stereotypical association. The central tenet of White and White’s research is that the strength of the pre-existing stereotype influences the response-time effect. Subjects were able to perceive male accountants, male engineers, and female schoolteachers more quickly than when the opposite sex was paired with the same occupations. These results show that the occupation of accounting is still thought of implicitly as a male field, even though explicit testing indicates it is perceived as a gender-neutral occupation. This study, involving implicit stereotypes, can help to explain why someone who appears to be outwardly (explicitly) gender neutral may in fact behave in a manner that reinforces gender stereotypes (e.g., favoring a male candidate over a female for an accountancy position). Thus, an understanding of gender stereotypes should include beliefs, behaviors, and social mechanisms that occur both consciously and subconsciously. Discovering how gender stereotypes can harm women even when the violator does not realize their subconscious intentions, or when women do not realize how a violator has changed their behaviors and choices, is critical to gender stereotype research.

Incivility

Gender harassment is relatively unknown, in comparison to the widely known sexual harassment, because the discriminatory behavior exhibited in gender harassment is subtle (Hitlan, Pryor, Hesson-McInnis, & Olson, 2009; Nordstrom, Bartels, & Bucy, 2009; Raver, & Nishii, 2010). This gender harassment often manifests in environmental
harassment via condescension, ostracism, and rudeness (Hitlan et al.; Raver & Nishii; Roscigno et al., 2009). Scholars frequently group this environmental harassment under the umbrella term incivility. Caza and Cortina (2007) found that students that experience uncivil behavior in school suffered from psychological distress, performance decline, dissatisfaction, and disengagement from their studies. Caza and Cortina used the Workplace Incivility Scale (WIS) to gather information about the type and frequency of the uncivil behaviors students experienced, as well as the rank of the instigator of the uncivil behavior. They also examined perceived injustice through a six-item scale, redesigned from a workplace justice measure to fit the student population. Specifically, they added a measure of “perceived ostracism” that was not found on the workplace scale. This study defined two cognitive mechanisms of incivility, perceived injustice and social ostracism, and found that the social status of the instigator does not affect the level of damage perceived by the victim of uncivil behavior. When considered in a work context, the cognitive mechanism of perceived injustice could be linked to discrimination claims and the presence of social ostracism predicted lower productivity and lower quality of life. Additionally, because the status of the offender does not affect the impact of the incivility, these consequences would be just as detrimental coming from a supervisor or a fellow coworker (Caza & Cortina).

This incivility found in university classrooms has also been documented in the federal court system, as experienced by male and female attorneys, in the study conducted by Cortina, Lonsway, Magley, Freeman, Collinsworth, Hunter, and Fitzgerald (2002) on the U.S. Eight Circuit Court. They examined general incivility and gender-based incivility, as well as the incidence of unwanted sexual attention. They found that
75% of female attorneys and 50% of male attorneys had experienced some form of harassment in the work setting. Cortina et al. also found that the most common reaction that female attorneys had towards harassment was denial and avoidance, because they feared retribution from their more powerful coworkers if they used the traditional reporting process. This trend, coupled with devastating personal and professional effects (job and life dissatisfaction, withdrawal intentions, job stress and professional deterioration) of interpersonal mistreatment documented in the study highlight the importance of proactive approaches to gender-based discrimination. Gender harassment thus has consequences for the individual, for their profession, and for their employer.

**Career Path Selection**

Past research has provided evidence that gender stereotyping can predict career goals (Huguet & Rgner, 2009; Jamieson & Harkins, 2010; Kiefer et al., 2007; Lapour & Heppner, 2009; Oswald, 2008; Schmader et al., 2004). Women are less likely to pursue career goals in a career field that is male dominated, and are more than twice as likely as their male counterparts to drop out of those fields (Kiefer et al.; Seymour & Hewitt, 1994). Fountain (2000) provides information on the subject of women in fields of science and mathematics, traditionally male dominated fields. Pulling from sources of information such as National Assessment for Educational Progress (NAEP), the U.S. Department of Commerce, and the National Center for Education Statistics, Fountain provides a compelling argument for gender differences in education and career selection. The data Fountain analyzed from these databases illustrate that women are on equal footing with men in the science and mathematics fields in their youth (age 9), but by the time they reach secondary education they cannot perform as well as their male
counterparts (Fountain). Specifically, Fountain cites that female performance on the SAT has been, on average, 39 points below male performance since 1972. The question remains, what occurs in the time between youth and secondary education that diminishes female math performance?

Rask and Tiefenthaler’s (2008) research on male vs. female responsiveness to grades received offers some insights on the trend of females performing less favorably than men on tests of math aptitude do. Specifically, the authors found that sensitivity to grades received in introductory economics class was higher in females than males, and that this performance metric was more predictive of female students’ choice to take later economics courses than gender stereotyping. Their analysis included a sample of 10,622 students from Colgate University who graduated between the years of 1989-2004. The data gathered from this 16-year segment of the student population included pre-admission information (high school grades and SAT scores) as well as college economic course information (dates taken and grades received). Male students, it seems, will persist in the study of economics even when they receive lower grades; indicating a lower sensitivity to grade feedback. Women, on the other hand, were more sensitive to this feedback and were more likely not to enroll in continuing economics classes when they received a lower grade. So why are women more sensitive than men to grades received in an economics course? This question could not be answered within Rask and Tiefenthaler’s study, but the authors did offer some ideas. They speculate that male students may have more interest in economics as a career and therefore lower grades are less likely to influence their class selection. Female Colgate students who made it to the third stage of economic courses often continued to take economic classes, and the authors speculate
that this is an indication of their genuine interest in economics as a career choice. It could be possible that women who do not consider economics to be a male dominated field are less sensitive to grades, or possibly women who are low on gender identification are less likely to be influenced by gender stereotypes.

Oswald’s (2008) study on gender stereotypes and women’s beliefs about their own competence and desire for traditionally masculine vs. feminine occupations may shed some light on the questions left unanswered by Rask and Tiefenthaler’s (2008) study. Her results indicated that women with strong gender-identification prefer traditionally feminine occupations in the presence of a gender-stereotyping prime (participants were given five minutes to list common negative and positive characteristics of the female gender). This effect was not as obvious for women that did not gender identify as strongly, indicating that gender stereotypes affect women differently, in regards to career selection, based on their gender identification. Oswald inferred from her study that the activation (priming) of gender stereotypes leads to an increased interest in traditionally feminine occupations for women that perceive their gender to be a large part of their identity, but not for women that do not hold their gender to be a large part of their identity. She also noted that stereotype activation did not predict increased liking for traditionally male occupations in either the high or low gender identification groups. This supports past research, which has found that gender stereotyping is less relevant than actual performance when female students are inclined to follow a traditionally male career path (Rask, & Tiefenthaler).
Contributions of Study

Existing research concerning career path selection indicates that there is a relationship between career path selection and gender stereotypes. Gender identification and gender-level discrepancies (grade sensitivity) play a part in the progression of female college students into typically male-dominated fields. Furthermore, incivility research has identified that gender stereotypes may manifest as gender harassment, as individuals consciously and unconsciously bully women into acting in accordance with Western societal standards. It is necessary to understand how gender stereotypes may influence career path selection through gender harassment. By collecting survey information about female college students’ gender stereotype beliefs, their perceptions of experienced incivility in the classroom, and their career path choices, this study will analyze how experiences of classroom incivility may influence young women into choosing female-dominated career paths. While strictly a correlational study (with no causal inferences), this study will contribute to existing literature by examining what (if any) relationship exists between gender stereotype beliefs and career path choices as moderated by experiences of incivility. This examination of current research suggests there will be an interaction effect between gender stereotypes and experiences of incivility that will result in female students preferring female-dominated career path choices when they have experienced incivility in the classroom.
Chapter II

Rationale and Hypotheses

Kiefer and Sekaquaptewa (2007) conducted gender stereotype research that assessed the relationships between implicit and explicit stereotypical beliefs, gender identification, performance in a calculus course, and math-based career goals. Their study indicated that chronic activation of implicit stereotypes might leave women vulnerable to stereotype threat, which is the perception of a stereotype as self-relevant. Results show that higher implicit stereotyping was a predictor for poor performance for women with low gender identification but not high gender identification. Greater implicit stereotyping predicted less motivation to pursue a mathematical career in women with high gender identification but not for low gender identification. The results of Kiefer and Sekaquaptewa’s study indicate that implicit gender stereotyping, in conjunction with gender identification, reduces performance and motivation in the field of mathematics. Given this research indicating that gender stereotypes can persist subconsciously despite overt rejection in thought and behavior of these stereotypes, the following is hypothesized:

Hypothesis 1: More women will strongly disagree with questions supporting gender stereotypes (as assessed by Schmader et al., 2004) than would be expected by chance.
Gender harassment is not linked to sexual harassment primarily because the discriminatory behavior exhibited in gender harassment is subtle, often manifesting in environmental harassment through condescension, ostracism, and rudeness. Caza and Cortina (2007) found that students that experience uncivil behavior in school suffered from psychological distress, performance decline, dissatisfaction, and disengagement from their studies. Caza and Cortina used the Workplace Incivility Scale (WIS) to gather information about the type and frequency of the uncivil behaviors students experienced, as well as the rank of the instigator of the uncivil behavior. They also studied injustice through a six-item scale that had been redesigned from a workplace justice measure to fit the student population. Their research indicated that 75% of their sample of 1,043 college students from a small public university in the northwestern United States had experienced incivility in the classroom. It would follow from this research that students often experience incivility in the classroom, especially when they are engaging in a learning experience outside of the “gender norms” defined by our society (Kiefer & Sekaquaptewa, 2007). As a loose replication of this research, the following is hypothesized:

Hypothesis 2: The average of the summed scores of the incivility scale reported by female students will be significantly greater than the summed midpoints of all items of the scale utilized by Cortina et al. (2001).

Research conducted by White and White (2006) examining the role of implicit gender stereotypes for the occupations of engineer, accountant, and schoolteacher found that participants often reacted to women in traditionally female occupations and men in traditionally male occupations more quickly than they did when the occupations were
matched with a gender not traditionally associated with the career. The central tenet of White and White’s research is that the strength of the pre-existing stereotype influences the response-time effect. Subjects were able to perceive male accountants, male engineers, and female schoolteachers more quickly than when the opposite sex was compared with the same occupations. These results show that the occupation of accounting is still thought of implicitly as a male field even though explicit testing indicates it is perceived as a gender-neutral occupation. This study, involving implicit stereotypes, can help to explain why someone who appears to be outwardly (explicitly) gender neutral may in fact behave in a manner that reinforces gender stereotypes (e.g. favoring a male candidate over a female for an accountancy position).

Similarly, Fountaine (2002) explored the question of why women are underrepresented in the expanding career fields of information technology and noted that women pursuing degrees in engineering and computer science often opt out of their programs because they are “demoralized” by courses that are designed to eliminate weaker students. Although the participants in this study may not overtly believe in gender stereotypes, their experiences of incivility may have led them to follow a more socially accepted (female dominated) career path (Fountaine; Huguet & Rgner, 2009; Jamieson & Harkins, 2010; Kiefer et al., 2007; Lapour & Heppner, 2009; Oswald, 2008; Schmader et al., 2004). Based on the above, the following is hypothesized:

Hypothesis 3: Reported experiences of incivility will moderate the relationship between gender stereotype beliefs and self-reported preference for careers defined as traditionally feminine. Specifically, the preferences of participants who have not experienced incivility will not be affected by the extent to which they deny
gender stereotypes, whereas women who have experienced incivility and who
deny gender stereotypes will report a stronger preference for feminine-typed
careers than those who have experienced incivility and do not deny gender
stereotypes.
Chapter III

Method

Participants

Participants were selected using Xavier University’s existing research recruitment process, which consisted of a posting (tear sheet) for the address of the online survey outside of the psychology department on the communal research participant board. The final sample of 144 participants ranged in age from 18 to 50 with a mean age of 20.3 and a standard deviation of 2.8. 80.4% of participants self-reported as Caucasian/White, 10.5% as African American/Black, 4.9% as Hispanic Origin/Latino, and 4.2% self-reported as Other.

This particular constellation of variables has not been the object of a single study, so no explicit guidance on likely effect size was available. As such, this study assumed a medium effect size. Based on this assumption, Cohen’s (1992) power tables indicated that 128 participants would be sufficient to detect the effect specified in Hypothesis 3, and more than sufficient to address Hypotheses 1 and 2.

Materials

Participants received notification of the survey via an address posted on the tear sheet outside of the undergraduate psychology department. The tear sheet enabled survey participants to access the materials via the SurveyMonkey website, through a shortened URL obtained at http://www.tinyurl.com. Survey participants entered the short Survey
Monkey URL into their web browsers and upon loading the website participants were presented with a short paragraph describing the survey and the confidentiality measure of a second survey for course credit information. Below this paragraph, participants found questions regarding demographics (race and age only) that were described as optional. Participants then clicked on the “Next” button at the bottom of the page and preceded to the survey instruments. All components of the survey (gender stereotype belief, experiences of incivility, and career path selection) were presented as one page. The components of the survey are relatively short and do not require separate pages. After completing the demographic and survey information the participants saw a thank you screen with information regarding the study, alongside a link to a second survey where participants entered their name and undergraduate class for course credit. The Second Survey to Receive Course Credit has been provided as Appendix A. A statement on this page emphasized that personal identification information was to be kept separate from the first survey to protect participant confidentiality.

**Measures**

**Demographics.** The present study collected demographic information (Appendix B) alongside the existing measures (Appendix C). Participants were not required to answer this information, and they were not forced to choose only one option. For example, when the participants were prompted to self-identify their race they could choose one or more of the following options: Caucasian/White, Asian/Pacific Islander, African American/Black, American Indian/Alaska Native, and Hispanic Origin/Latino. Participants were also asked to self-identify their age via a fill-in box that was also optional. This survey contained an initial screen that asked about gender. Even though it
was stated in the sign-up sheet that the survey was for female participants only, this question remained to ensure that only data from female survey participants was analyzed. Participant data was excluded if the respondents were male.

**Gender stereotyping.** This study followed Kiefer and Sekaquaptewa’s (2007) example by measuring explicit gender stereotyping using Schmader et al.’s (2004) three-item measure. This measure of personal gender stereotype endorsement has been found to be linked with poor test performance ($\beta = -.29, p < .05$) and reduced interest ($\beta = -.85, p < .01$) in math-relevant career fields (Schmader et al.). This three item measure uses a seven point Likert scale and has been found to have an alpha of .88 (Schmader et al.). An example of an item from this scale is “In general, men may be better than women at math”. Responses are provided on a Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The third question is phrased as to not support gender agreement. This item was reverse-scored before subsequent analysis. The items on this measure were averaged, and this average score was used in statistical analyses. This three-item scale was found to have adequate internal reliability ($\alpha = .79$) in this sample, with a summed mean of 9.36 and a standard deviation of 3.93.

**Incivility.** The current study measured incidence of incivility by means of seven items originally used in the Cortina et al. (2001) Workplace Incivility Scale (WIS). The items are prefaced with, “How often has someone at school (e.g., student, teacher, administrative employee) done the following to you in the past year?” In the original Cortina et al. WIS scale, the items were prefaced to gather information about the workplace and included the examples of supervisor and fellow employee instead of student and teacher. Caza Y Cortina. (2007) determined that the WIS scale is appropriate
to use in a student population, measuring student experiences of incivility. The seven items were scored as Never receiving a value of 1, Once or Twice receiving a value of 2, and More than Once or Twice receiving a value of 3. These scores were summed across items as one total incivility score and correlated with gender stereotype scores as well as with career-path selection scores. This seven item scale was found to have adequate internal reliability (α = .87) in this sample, with a summed mean of 11.30 and a standard deviation of 3.46.

**Career Path Selection.** The present study followed Fountain’s (2000) model of career field dichotomization as either male or female dominated. The survey prompted students to rate their preferences towards the male dominated (as defined by Fountain) fields of agriculture, biology, computing, engineering, mathematics, physical sciences, and social sciences; and the gender neutral and female dominated (as defined by Fountain) fields of business/commerce, education, health and allied sciences, and other. These categories are based on the SAT Profile used in the College Entrance Examination Board (1994), as utilized by Fountain. The survey response scale followed Kiefer’s (2007) Career Goals questionnaire which utilized a 7-point Likert type response scale, ranging from 1 (Not at All) to 7 (Very Likely). In the current study, responses on the first seven questions were averaged to get an overall rating for traditionally male career fields (as defined by Fountain) while the average of the last four questions was taken to get an overall rating for traditionally female career fields.

Psychometric properties of Fountain (2000) and Kiefer’s (2007) scales were not provided in their studies. This eleven item scale was found to have adequate internal reliability (α = .60 for traditionally female jobs, α = .59 for traditionally male jobs) in this
sample, with a summed mean of 4.12 and 2.16 respectively. This scale had a standard
deviation of 1.13 for traditionally female type jobs and a standard deviation of .98 for
traditionally male jobs.

Procedure

Once the survey was granted Xavier University’s IRB approval, the data were
collected via the double survey that was administered online. Xavier University’s IRB
approval for this study has been provided as Appendix D. Upon entering the survey URL,
participants were presented with the Informed Consent documentation. The informed
consent documentation used for this study has been provided as Appendix E. The
Informed Consent documentation outlined why the study took place, who conducted the
study, what activity is necessary to complete the study, the time constraints of the study,
the confidentiality of the results, the voluntary nature of participation, and that the study
could be completed only for course credit if applicable and no other compensation was
available. This survey took participants approximately twenty minutes to complete and
data was available immediately after completion. Using the SurveyMonkey website
protected survey participants in three ways. First, there was no collection of IP addresses
to ensure participant confidentiality. Second, the use of a second survey that was tracked
independently of the first ensured that survey answers were in no way connected with
participant identification, as participant identities were never be archived in the same
database as their responses. Third, there was no hard copy of participant data, and
therefore there was no reason for applicants to feel like their survey responses would be
matched via handwriting or survey response order.
Chapter IV

Results

Means, standard deviations and inter-scale correlations of the scales used in these analyses can be found in Table 1. Gender stereotype agreement and the interaction variable were highly correlated with the Female Type jobs variable. Gender Stereotype disagreement was significantly and negatively related to female career path selection while experiences of incivility were significantly and positively related to female career path selection.

For the first hypothesis, a chi-square test was first conducted on the three gender-stereotype questions to test the hypothesis that more women would strongly disagree with questions supporting gender stereotypes than would be expected by chance (14.3%). Significant chi-square values were returned indicating that the proportion of women falling into the various agreement categories on the gender stereotype questions is significantly different than would be expected by chance. Means and standard deviations of the gender stereotype questions are presented in Table 2. See Figure 1 for distributions of responses by anchor. See Table 3 for number of responses and percentages of responses by anchor.

Because the overall significant chi-square value only indicated differences from the expected proportions in all categories from the random distribution that would include 14.3% in each, follow-up binomial tests were conducted on each Gender Stereotype
Table 1

Means, Standard Deviations, and Intercorrelations of Scales Utilized

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stereotype</td>
<td>9.36</td>
<td>3.93</td>
<td>(.79)</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Disagreement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Experiences of</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incivility</td>
<td>11.30</td>
<td>3.46</td>
<td>-.04</td>
<td>(.87)</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>3. GSD X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incivility</td>
<td>4.37</td>
<td>1.04</td>
<td>.79**</td>
<td>.52**</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>4. F_Type_Jobs</td>
<td>4.12</td>
<td>1.13</td>
<td>-.25**</td>
<td>.14*</td>
<td>-.15*</td>
<td>(.60)</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>5. M_Type_Jobs</td>
<td>2.16</td>
<td>.98</td>
<td>-.16</td>
<td>.04</td>
<td>-.08</td>
<td>.29**</td>
<td>(.59)</td>
<td>---</td>
</tr>
<tr>
<td>6. Age</td>
<td>20.28</td>
<td>2.8</td>
<td>.08</td>
<td>-.05</td>
<td>.04</td>
<td>.06</td>
<td>-.05</td>
<td></td>
</tr>
</tbody>
</table>

Note: Coefficient alphas of scales utilized are represented in the diagonal. Total Career Path Scale coefficient alpha .66. GSD = Gender Stereotype Disagreement; Incivility = Experiences of Incivility; GSD X Incivility = The interaction of Gender Stereotype Disagreement and Experiences of Incivility; F_Type_Jobs = Preference for traditionally feminine-typed jobs; M_Type_Jobs = Preference for traditionally masculine-typed jobs.

* p < .05. ** p < .01
Table 2

_GSD Questions, Descriptive Statistics_

<table>
<thead>
<tr>
<th>Question Number</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>GS_1</td>
<td>3.26</td>
<td>1.61</td>
<td>2.59</td>
</tr>
<tr>
<td>GS_2</td>
<td>3.14</td>
<td>1.47</td>
<td>2.16</td>
</tr>
<tr>
<td>GS_3</td>
<td>2.97</td>
<td>1.60</td>
<td>2.55</td>
</tr>
</tbody>
</table>

_Notes:_ GSD = Gender Stereotype Disagreement;
GS_1 = Gender Stereotype Question 1; GS_2 = Gender Stereotype Question 2; GS_3 = Gender Stereotype Question 3.
Table 3

*Gender Stereotype Disagreement Response Counts and Percentages*

<table>
<thead>
<tr>
<th>Anchor</th>
<th>Q1 N</th>
<th>Q1 %</th>
<th>Q2 N</th>
<th>Q2 %</th>
<th>Q3 N</th>
<th>Q3 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>34</td>
<td>23%</td>
<td>30</td>
<td>20%</td>
<td>40</td>
<td>27%</td>
</tr>
<tr>
<td>2</td>
<td>10</td>
<td>7%</td>
<td>15</td>
<td>10%</td>
<td>11</td>
<td>7%</td>
</tr>
<tr>
<td>3</td>
<td>35</td>
<td>23%</td>
<td>44</td>
<td>30%</td>
<td>50</td>
<td>34%</td>
</tr>
<tr>
<td>4</td>
<td>35</td>
<td>23%</td>
<td>29</td>
<td>19%</td>
<td>22</td>
<td>15%</td>
</tr>
<tr>
<td>5</td>
<td>25</td>
<td>17%</td>
<td>24</td>
<td>16%</td>
<td>17</td>
<td>11%</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>3%</td>
<td>5</td>
<td>3%</td>
<td>2</td>
<td>1%</td>
</tr>
<tr>
<td>7</td>
<td>4</td>
<td>3%</td>
<td>1</td>
<td>1%</td>
<td>6</td>
<td>4%</td>
</tr>
</tbody>
</table>

*Notes:* Scale Anchor 1 = Strongly Disagree; Scale Anchor 2 = Slightly Disagree; Scale Anchor 3 = Disagree; Scale Anchor 4 = Neutral; Scale Anchor 5 = Agree; Scale Anchor 6 = Slightly Agree; Scale Anchor 7 = Strongly Agree.
question to test the hypothesis that more women would strongly disagree with questions supporting gender stereotypes than would be expected by chance (i.e., 14.3\% in the “strongly disagree” category alone). The results of these binomials indicate that the observed proportion of women strongly disagreeing with each of the Gender Stereotype questions was significantly different than what would be expected by chance at the one-tailed $p < .05$ level: 23\% or 34 responses for question 1 (asking participants if men have more math ability than women); 20\% or 30 responses for question 2 (asking if men may be better than women at math), and 27\% or 40 responses for question three (asking if participants don’t think that there are real gender differences in regards to math ability). Thus, hypothesis 1 is supported.

To test the second hypothesis, that the average of the summed scores of the incivility scale reported by female students will be significantly greater than the summed midpoints of all items of the scale utilized by Cortina et al. (2001), a one-sample t-test was conducted to analyze whether the means were significantly different from the test value of fourteen. Fourteen is the value of the summed midpoints of all items on the incivility scale. The sum of the means for incivility ($M = 11.30$) was significantly lower than the hypothesized value of 14, $t (147) = -9.49, p < .05$. The 95\% confidence interval for the Incivility score mean ranged from 10.23 to 11.86. See Table 4 for descriptive statistics and Figure 2 for an overview of participant responses by type (Never, Once or twice, More than once or twice). These results indicate that undergraduate females experience significantly less incivility than would be expected by chance, rather than more. As such, hypothesis 2 is not supported.
Table 4

*Incivility Questions Descriptive Statistics*

<table>
<thead>
<tr>
<th>Incivility</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incivility 1</td>
<td>1.89</td>
<td>.65</td>
<td>.42</td>
</tr>
<tr>
<td>Incivility 2</td>
<td>1.99</td>
<td>.68</td>
<td>.46</td>
</tr>
<tr>
<td>Incivility 3</td>
<td>1.52</td>
<td>.67</td>
<td>.44</td>
</tr>
<tr>
<td>Incivility 4</td>
<td>1.47</td>
<td>.68</td>
<td>.46</td>
</tr>
<tr>
<td>Incivility 5</td>
<td>1.47</td>
<td>.68</td>
<td>.47</td>
</tr>
<tr>
<td>Incivility 6</td>
<td>1.60</td>
<td>.70</td>
<td>.49</td>
</tr>
<tr>
<td>Incivility 7</td>
<td>1.36</td>
<td>.60</td>
<td>.35</td>
</tr>
</tbody>
</table>
Figure 2: Reported experiences of incivility for all incivility questions summed according to frequency (Never, Once or Twice, More than Once or Twice).
CAREER PATH SELECTION

To test the third hypothesis, whether reported experiences of incivility moderate the relationship between gender stereotype beliefs and self-reported preference for careers defined as traditionally feminine, a hierarchical multiple regression analysis was conducted to clarify the relationship between the predictor variables of gender stereotype and incivility, as well as what variance in Female Career Path selection can be accounted for by the interaction of the two variables. The regression equation with both predictors was significantly predictive of the Female Career Path selection, $R^2 = .08$, $F (2, 145) = 5.99, p < .05$. However, the interaction of incivility and gender stereotype beliefs was not significant, $\Delta R^2 = .01$, $F (1, 144) = 1.89, ns$, failing to support the moderation proposed in hypothesis 3. See table 5 for a model summary.
Table 5

Hierarchical Regression Results of GSD and Incivility Interaction on Career Path Selection

<table>
<thead>
<tr>
<th></th>
<th>$\Delta R^2$</th>
<th>df</th>
<th>F</th>
<th>Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incivility</td>
<td>.08</td>
<td>2, 145</td>
<td>5.99*</td>
<td>.13</td>
</tr>
<tr>
<td>GSD</td>
<td></td>
<td></td>
<td></td>
<td>-.24**</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incivility X GS</td>
<td>.01</td>
<td>1, 144</td>
<td>4.65</td>
<td>-.42</td>
</tr>
</tbody>
</table>

Notes: GSD = Gender Stereotype Disagreement; Incivility X GS = the interaction of Gender Stereotype Disagreement and experiences of Incivility

* = p < .05; ** = p < .01
stereotypes. Thus, gender stereotyping may play a more important role in career path selection than this study is able to measure.

Historically, researchers have defined incivility as demonstrating “ambiguous intent to harm” (Andersson & Pearson, 1999). Recent research by Cortina has furthered this definition to include discriminatory motivations for this harm, including racist and sexist discrimination (Cortina, 2008). Contrary to Caza and Cortina’s (2007) incivility research which found that 76% of the sample (N = 3,347) reported experiencing at least one act of incivility on campus in the previous year, the results of hypothesis two indicate that the participants in the current study have not experienced incivility beyond that which would be expected by chance (where “chance” in this context was defined as the scale midpoint of one or two uncivil experiences). Whereas this result is inconsistent with prior research, it is possible that experiences of incivility are less frequent because of contextual factors related to the university size, type, and region. This private university, which typically hosts an undergraduate enrollment of 4,000, is smaller than most public universities. This smaller enrollment size might afford students additional benefits such as smaller class sizes, more access to student resources such as financial aid, more opportunities for individual advising, a stronger sense of community, and more opportunities to get to know their professors. That this university is a Jesuit institution might have limited experiences of incivility in this sample as well, because of the steps that have been taken by females in the Jesuit higher educational system to increase the presence of females in leadership roles (Beadle, 2006). Traditionally a patriarchal system in following with the Catholic order, more and more women inhabit teaching, administrative, and leadership roles within Jesuit institutions (Beadle, 2006).
Research on female career path preferences would indicate that a large proportion of participants would prefer female career paths over masculine career paths because of their experiences of incivility when they participate in coursework outside of gender norms (Fountain, 2002). Participants in this study indicated a higher preference for traditionally female career paths over traditionally male career paths. The highest mean rating for any career path category was that of “other,” which introduces interpretational ambiguity with respect to the desired career paths for study participants. Future research should further focus on collecting information around what career paths are preferred over what has been traditionally thought of as female or male career paths.

**Gender Stereotyping and Incivility Moderator Effects**

Given the previous research on gender stereotype disagreement, incivility, and career path selection, it was hypothesized that the relationship between gender stereotype disagreement and career path selection would be moderated by experiences of incivility in the classroom, such that those that have experienced harassment in the classroom setting (theoretically through gender harassment, when they are involved in “non-feminine” classes) would choose traditionally female career paths even if they openly disagreed with statements of gender stereotypes. Theoretically even those women who openly disagree with gender stereotype statements might be influenced into changing their career paths if they meet with subtle gender harassment in classes that are more traditionally male. Although a regression equation with gender stereotype disagreement and experiences of incivility was found to have a significant relationship with career path selection, experiences of incivility was not found to have a moderating effect on the relationship between gender stereotype disagreement and career path selection.
Given the results of this correlational study, it is advised that future research into career path selection make inroads in finding out why there is still a shortage of women entering into traditionally male career paths. It is possible that the institution where data were collected for this study is an anomaly, experiencing decreased incidents of incivility or a greater acceptance of women taking traditionally male courses. It is possible that the moderator effect might prove to be a significant moderator of career path selection in institutions that have a higher prevalence of incivility (perhaps because of fewer female professors, less emphasis on equality on campus, or similar factors). There may be other forces at work as well, such as different perceptions of or reactions to performance indicators in traditionally male classes. For example, a female and male student may receive the same low grade on a test but the male student might be more impervious to the lower grade than the female student because of different levels of interest in the subject matter or different levels of sensitivity to grades (Rask & Tiefenthaler, 2008).

Limitations and Implications for Future Research

There are several factors that limit the generalizability of study findings. This sample was largely Caucasian, and future studies should consider a sampling strategy that focuses on minority perceptions of incivility and gender stereotyping. Minority participants may have different educational experiences, different cultural values, different experiences of gender stereotyping, and different experiences of incivility than this largely white sample. Another limitation of this study is that all responses were self-report. Using enrollment information and comparing it to graduation information might provide a more accurate means of assessing how career path preferences change over a woman’s college career. Information regarding gender stereotype perceptions might be
more accurately captured using implicit apperception testing (White & White, 2006) rather than relying on self-responses.

It is also important to understand how career preferences are influenced by a woman’s early academic experiences, and future research should include participants in high school and possibly middle school. A limitation of this study is that there was no item to capture information surrounding the “Other” category in the Career Interest Questionnaire. Future research should seek out this valuable information, as survey participants may identify career interests that have not been captured on conventional career surveys. It is also possible that there are sub-group differences between women that strongly gender identify (receptive to all female stereotypes) and those women that gender-identify with only positive associations (not receptive to all female stereotypes). Future research could explore the implications of how gender identification (varying levels of acceptance of female stereotypes) influences how incivility is perceived. For example, women that openly disagree with gender stereotypes that focus on males being better at math may still agree with the gender stereotype that women are more nurturing.

Another avenue for further research could involve replication of this study across different types of universities including public, private, small, medium, and large universities with varying student demographics. It would also be interesting to replicate this study in universities that have low, medium, and high numbers of women in leadership positions as well as universities that have different cultures (such as an engineering school). Finally, studies exploring the incidence of selective incivility of females and minorities in the academic setting could shed light on how students may be suffering from incivility based on subtle or implicit sexism and/or racism.
Summary

How women decide which career paths to pursue and which to avoid could be a result of many factors, but it is not clear from this study if gender stereotype beliefs and incidents of incivility are important factors that influence these decisions. It is heartening to know that participants in this sample are not experiencing incivility, including gender harassment, and do not overtly believe in gender stereotypes. It is still the case that there are opportunities, and even the societal need, for women to pursue traditionally male career paths and although there has been some increase, the gap and the opportunity still exists (Fountain, 2002).
Chapter VI

Summary

Someone who holds conventional, oversimplified, and harmful beliefs about male and female behavior based on a patriarchal paradigm like the one that has existed in Western society for centuries is engaging in gender stereotyping (Kiefer & Sekaquaptewa, 2007; Liu, Chi, Friedman, & Tsai, 2009; Pavlova 2009; Wecker, Krombholz, & Sokolov, 2009). An example of this would be a young girl who receives dolls to play with (a toy that inspires nurturing) while her parents give her brother a telescope (a toy that inspires scientific exploration). The parents cannot know the preferences of the boy and the girl, yet make assumptions about what their children might like based on their own childhoods, what society says children of different genders are supposed to like, and what they have seen other little girls and boys playing with. This preconceived notion of what a male or female child would have interest in is a stereotype, and more importantly, it is gender-based. These gender stereotypes, while seemingly innocuous and accepted, shape the child’s awareness of the world, their sense of self, and their expectations of their place in the world (Hodges & Perry, 2010; Steinmayr & Spinath, 2009; Tobin, Menon, Menon, & Spatta, 2010; White & White, 2006).

Someone who tries to manipulate another person via subtle but rude behavior such as gossiping, sneering, snickering, and social exclusion may be engaging in acts of incivility (Caza & Cortina, 2007). An example of this might be a committee member who
feels one of the other committee members is not doing enough for the company
gathering. Instead of talking to the offending member and airing valid complaints, the
angry committee member engages in political maneuvering to get the other members
angry with the offending member. Often these acts of incivility seem harmless and
juvenile, but the aftermath can be emotionally damaging to the victim (Cortina, Lonsway,
Magley, Freeman, Collinsworth, & Fitzgerald, 2002). When an aggressor commits acts of
incivility against women who do not follow conventional (stereotypic) female behavior,
the aggressor is trying to manipulate the women into acting more “appropriately”
(DeWall, Altermatt, & Thompson, 2005; Roscigno, Hodson, & Lopez, 2009).

Overt gender stereotyping can be harmful to women because they more
commonly internalize these beliefs (White & White, 2006). When a female internalizes a
stereotypical belief, it can lead to lower performance expectations (relative to men) that
are inherent to the stereotype (Huguet & Rgner, 2009; Kiefer & Sekaquaptewa, 2007).
An example of this is a young girl who finds out that boys typically perform better than
girls in math class. The girl starts to doubt her own skills, is so worried that she falls
behind in math class, and falling behind reinforces this adopted belief that females are
less competent in math. If this stereotype-based belief persists into high school and
college it can potentially limit career path options for young women (Brown & Pinel,
2003; Tobin et al., 2010).

Research has indicated that gender stereotypes exist in our society and that these
stereotypes have the possibility of influencing the career choices of individuals in
undergraduate studies (Berdahl, 2007; Fountain, 2007; Kiefer & Sekaquaptewa, 2007).
Incivility can function to enforce gender stereotypes about women as fellow students,
teachers, coaches, and friends react rudely to women acting unconventionally (i.e., "unwomanly"). This is of great concern because areas of high job growth are occurring in careers that are more traditionally thought of as being male-dominated (often math, science, engineering, and technology occupations like information technology or research and development, resulting in increased opportunities for women in these fields (Delisle, Guay, Sencal, & Larose, 2009; Fountain, 2000; Gupta, Turban, & Bhawe, 2008). This study attempts to examine how undergraduate female students perceive gender stereotypes and whether or not these stereotypes are related to career choices. Furthermore, this study examines how the frequency of incivility, as experienced by this sample, moderates the hypothesized relationship between gender stereotype acceptance (or rejection) and career goals. Although much work has been done in the field of gender stereotype research, this study contributes to the field by adding relevant information about how incivility, in conjunction with gender stereotypes, results in career path selection into either male or female dominated fields.

**Methods**

**Participants**

Participants were selected using Xavier University’s existing research recruitment processes, which consisted of a posting (tear sheet) for the address of the online survey outside of the psychology department on the communal research participant board. The final sample of 144 participants ranged in age from 18 to 50 with a mean age of 20.3 and a standard deviation of 2.8. 80.4% of participants self-reported as Caucasian/White, 10.5% as African American/Black, 4.9% as Hispanic Origin/Latino, and 4.2% self-reported as Other.
This particular constellation of variables has not been the object of a single study, so no explicit guidance on likely effect size was available. As such, this study assumed a medium effect size. Based on this assumption, Cohen’s (1992) power tables indicated that 128 participants would be sufficient to detect the effect specified in Hypothesis 3, and more than sufficient to address Hypotheses 1 and 2.

Materials

Participants received notification of the survey via an address posted on the tear sheet outside of the undergraduate psychology department. The tear sheet enabled survey participants to access the materials via the SurveyMonkey website, through a shortened URL obtained at http://www.tinyurl.com. Survey participants entered the short Survey Monkey URL into their web browsers and upon loading the website participants were presented with a short paragraph describing the survey and the confidentiality measure of a second survey for course credit information. Below this paragraph, participants found questions regarding demographics (race and age only) that were described as optional. Participants then clicked on the “Next” button at the bottom of the page and preceded to the survey instruments. All components of the survey (gender stereotype belief, experiences of incivility, and career path selection) were presented as one page. The components of the survey are relatively short and do not require separate pages. After completing the demographic and survey information the participants saw a thank you screen with information regarding the study, alongside a link to a second survey where participants entered their name and undergraduate class for course credit. The Second Survey to Receive Course Credit has been provided as Attachment G. A statement on this
page emphasized that personal identification information was to be kept separate from the first survey to protect participant confidentiality.

Measures

**Demographics.** The present study collected demographic information alongside the existing measures (Appendix A). Participants were not required to answer this information, and they were not forced to choose only one option. For example, when the participants were prompted to self-identify their race they could choose one or more of the following options: Caucasian/White, Asian/Pacific Islander, African American/Black, American Indian/Alaska Native, and Hispanic Origin/Latino. Participants were also asked to self-identify their age via a fill-in box that was also optional. This survey contained an initial screen that asked about gender. Even though it was stated in the sign-up sheet that the survey was for female participants only, this question remained to ensure that only data from female survey participants was analyzed. Participant data was excluded if the respondents were male.

**Gender stereotyping.** This study followed Kiefer and Sekaquaptewa’s (2007) example by measuring explicit gender stereotyping using Schmader et al.’s (2004) three-item measure. This measure of personal gender stereotype endorsement has been found to be linked with poor test performance ($\beta = -.29, p < .05$) and reduced interest ($\beta = -.85, p < .01$) in math-relevant career fields (Schmader et al.). This three item measure uses a seven point Likert scale and has been found to have an alpha of .88 (Schmader et al.). An example of an item from this scale is “In general, men may be better than women at math”. Responses are provided on a Likert scale ranging from 1 (strongly disagree) to 7
(strongly agree). The items on this measure were averaged, and this average score was used in statistical analyses.

**Incivility.** The current study measured incidence of incivility by means of seven items originally used in the Cortina et al. (2001) Workplace Incivility Scale (WIS). The items are prefaced with, “How often has someone at school (e.g., student, teacher, administrative employee) done the following to you in the past year?” In the original Cortina et al. WIS scale, the items were prefaced to gather information about the workplace and included the examples of supervisor and fellow employee instead of student and teacher. Caza et al. (2007) determined that the WIS scale is appropriate to use in a student population, measuring student experiences of incivility. The seven items were scored as Never receiving a value of 1, Once or Twice receiving a value of 2, and More than Once or Twice receiving a value of 3. These scores were summed across items as one total incivility score and correlated with gender stereotype scores as well as with career-path selection scores.

**Career Path Selection.** The present study followed Fountain’s (2000) career field dichotomization as either male or female dominated. The survey prompted students to rate their preferences towards the male dominated fields of agriculture, biology, computing, engineering, mathematics, physical sciences, and social sciences; and the gender neutral and female dominated fields of business/commerce, education, health and allied sciences, and other. The survey responses followed Kiefer’s (2007) Career Goals questionnaire which was based on the SAT Profile used in the College Entrance Examination Board (1994) with a 7-point Likert type response scale, ranging from 1 (Not at All) to 7 (Very Likely). Responses on the first seven questions were averaged to get an
overall rating for traditionally male career fields while the average of the last two questions concerning the Education and Health/Allied Sciences was taken to get an overall rating for traditionally female career fields.

Procedure

Once the survey was granted Xavier University's IRB approval, the data were collected via the double survey that was administered online. Xavier University’s IRB approval for this study has been provided as Appendix E. Upon entering the survey URL, participants were presented with the Informed Consent documentation. The informed consent documentation used for this study has been provided as Appendix F. The Informed Consent documentation outlined why the study took place, who conducted the study, what activity is necessary to complete the study, the time constraints of the study, the confidentiality of the results, the voluntary nature of participation, and that the study could be completed only for course credit if applicable and no other compensation was available. This survey will took participants approximately twenty minutes to complete and data was available immediately after completion. Using the SurveyMonkey website protected survey participants in three ways. First, there was no collection of IP addresses to ensure participant confidentiality. Second, the use of a second survey that was tracked independently of the first ensured that survey answers were in no way connected with participant identification, as participant identities were never be archived in the same database as their responses. Third, there was no hard copy of participant data, and therefore there was no reason for applicants to feel like their survey responses would be matched via handwriting or survey response order.
Results

For the first hypothesis, a chi-square test was first conducted on the three gender-
stereotype questions to test the hypothesis that more women would strongly disagree with
questions supporting gender stereotypes than would be expected by chance (14.3%).
Significant chi-square values were returned indicating that the proportion of women
falling into the various agreement categories on the gender stereotype questions is
significantly different than would be expected by chance, $\chi^2 (6, N = 148) = 58.78, p < .05$;
$\chi^2 (6, N = 148) = 65.03, p < .05$; $\chi^2 (6, N = 148) = 90.1, p < .05$ for questions one through
three, respectively.

Because the overall significant chi-square value only indicated differences from
the expected proportions in all categories from the random distribution that would include
14.3% in each, follow-up binomial tests were conducted on each Gender Stereotype
question to test the hypothesis that more women will strongly disagree with questions
supporting gender stereotypes than would be expected by chance (i.e., 14.3% in the
“strongly disagree” category alone). The results of these binomials indicate that the
observed proportion of women strongly disagreeing with each of the Gender Stereotype
questions was significantly different than what would be expected by chance (observed
proportions of .23, .20, and .27 for questions one through three, respectively) at the one-
tailed $p < .05$ level. Thus, hypothesis 1 is supported.

To test the second hypothesis, that the average of the summed scores of the
incivility scale reported by female students will be significantly greater than the summed
midpoints of all items of the scale utilized by Cortina et al. (2001), a one-sample t-test
was conducted to analyze whether the means were significantly different from the test
value of fourteen. Fourteen is the value of the summed midpoints of all items on the incivility scale. The sum of the means for incivility \( (M = 11.30) \) was significantly lower than the hypothesized value of 14, \( t (147) = -9.5, p < .05 \). The 95% confidence interval for the Incivility score mean ranged from 10.23 to 11.86. These results indicate that undergraduate females have experienced significantly less incivility than would be expected by chance, rather than more. As such, hypothesis 2 is not supported.

To test the third hypothesis, whether reported experiences of incivility moderate the relationship between gender stereotype beliefs and self-reported preference for careers defined as traditionally feminine, a hierarchical multiple regression analysis was conducted to clarify the relationship between the predictor variables of gender stereotype and incivility, as well as what variance in Female Career Path selection can be accounted for by the interaction of the two variables. The regression equation with both predictors was significantly predictive of the Female Career Path selection, \( R^2 = .08, F (2, 145) = 5.99, p < .05 \). However, the interaction of incivility and gender stereotype beliefs was not significant, \( \Delta R^2 = .01, F (1, 144) = 1.89, ns \), failing to support the moderation proposed in hypothesis 3.

**Discussion**

Current gender-stereotyping research indicates that women will disagree with overt gender-stereotypes even if they subconsciously endorse them (Kiefer & Sekaquaptewa, 2007; Schmader et al., 2004). The results of hypothesis one indicate that the participants do not overtly endorse gender stereotype statements and very few agree with the gender stereotype statements. This could possibly be because in today’s society
it is not socially acceptable to openly endorse gender stereotypes, even if there is an awareness and possible subconscious acceptance of "traditional" gender stereotypes.

Contrary to previous incivility research, which would indicate that a large portion of respondents would have experienced incivility in the classroom (Cortina et al., 2001), the results of hypothesis two indicate that the participants have not experienced incivility beyond that which would be expected by chance (where "chance" in this context was defined as the scale midpoint, or [anchor] number of uncivil experiences). While this result is inconsistent with prior research, it is possible that experiences of incivility are less frequent because of contextual factors related to the university size, type, and region. This private university, which typically hosts an undergraduate enrollment of 4,000, is smaller than most public universities. This smaller enrollment size might afford students additional benefits such as smaller class sizes, more access to student resources such as financial aid, more opportunities for individual advising, a stronger sense of community, and more opportunities to get to know their professors. That this university is a Jesuit institution might have limited experiences of incivility in this sample as well, because of the steps that have been taken by females in the Jesuit higher educational system to increase the presence of females in leadership roles (Beadle, 2006). Traditionally a patriarchal system in following with the Catholic order, more and more women inhabit teaching, administrative, and leadership roles within Jesuit institutions (Beadle, 2006).

Research on female career path preferences would indicate that a large proportion of participants would prefer female career paths over masculine career paths because of their experiences of incivility when they participate in coursework outside of gender norms (Fountain, 2002). Participants in this study indicated a higher preference for
traditionally female career paths over traditionally male career paths. The highest mean rating for any career path category was that of “other” and future research should focus on collecting information around what career paths are preferred over what has been traditionally thought of as female or male career paths.

**Gender Stereotyping and Incivility Moderator Effects**

Given the previous research on gender stereotype disagreement, incivility, and career path selection, it was hypothesized that the relationship between gender stereotype disagreement and career path selection would be moderated by experiences of incivility in the classroom, such that those that have experienced harassment in the classroom setting (theoretically through gender harassment, when they are involved in “non-feminine” classes) would choose traditionally female career paths even if they openly disagreed with statements of gender stereotypes. Theoretically even those women who openly disagree with gender stereotype statements might be influenced into changing their career paths if they meet with subtle gender harassment in classes that are more traditionally male. Although a regression equation with gender stereotype disagreement and experiences of incivility was found to have a significant relationship with career path selection, experiences of incivility was not found to have a moderating effect on the relationship between gender stereotype disagreement and career path selection.

Given the results of this correlational study, it is advised that future research into career path selection make inroads in finding out why there is still a shortage of women entering into traditionally male career paths. It is possible that the institution where data were collected for this study is an anomaly, experiencing decreased incidents of incivility or a greater acceptance of women taking traditionally male courses. It is possible that the
moderator effect might prove to be a significant moderator of career path selection in institutions that have a higher prevalence of incivility (perhaps because of fewer female professors, less emphasis on equality on campus, or similar factors). There may be other forces at work as well, such as different perceptions or reactions to performance indicators in traditionally male classes. For example, a female and male student may receive the same low grade on a test but the male student might be more impervious to the lower grade than the female student because of different levels of interest in the subject matter or different levels of sensitivity to grades (Rask & Tiefenthaler, 2008).

Limitations and Implications for Future Research

There are several factors that limit the generalizability of study findings. This sample was largely Caucasian, and future studies should consider a sampling strategy that focuses on minority perceptions of incivility and gender stereotyping. Minority participants may have different educational experiences, different cultural values, different experiences of gender stereotyping, and different experiences of incivility than this largely white sample. This supposition follows research by Cortina (2008) on Selective Incivility, a model of incivility that proposes that incivility is a complex system of subtle (sometimes implicit) discrimination rooted in gender and racial discrimination. If incivility is a subtle form of discrimination, perhaps individuals in this sample experience less incivility than would be expected because they belong to the majority group (Caucasians). Another limitation of this study is that all responses were self-report. Using enrollment information and comparing it to graduation information might provide a more accurate means of assessing how career path preferences change over a woman’s college career. Information regarding gender stereotype perceptions might be
more accurately captured using implicit apperception testing (White & White, 2006)
rather than relying on self-responses. It is also important to understand how career
preferences are influenced by a woman’s early academic experiences, and future research
should include participants in high school and possibly middle school. A limitation of this
study is that there was no item to capture information surrounding the “Other” category
in the Career Interest Questionnaire. Future research should seek out this valuable
information, as survey participants may identify career interests that have not been
captured on conventional career surveys. It is also possible that there are sub-group
differences between women that strongly gender identify (receptive to all female
stereotypes) and those women that gender-identify with only positive associations (not
receptive to all female stereotypes). Future research could explore the implications of
how gender identification (varying levels of acceptance of female stereotypes) influences
how incivility is perceived. For example, women that openly disagree with gender
stereotypes that focus on males being better at math may still agree with the gender
stereotype that women are more nurturing.
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Appendix A

SECOND SURVEY TO RECEIVE COURSE CREDIT

Thank you for your participation! Your survey responses are valuable and will be kept confidential. Please copy & paste the URL below into your web browsers address bar to continue on to the class credit portion- this is required for class participation credit but will be kept separate from the survey you just completed.

http://www.surveymonkey.com/s/7WG2YWD

Reminder: None of your answers from the previous questionnaires will be linked to the identifying information below. Your answers are kept confidential and will not be stored with any identifying information. The information you are submitting below is a second survey used only to collect your information for tracking purposes and will in no way be linked to your test responses.

Student Name: ________________________________________________

Professor and Course: _________________________________________

- Done Button-

Thank you! Your information has been collected and your instructor will receive notification of your involvement with this survey.
Appendix B

DEMOGRAPHIC QUESTIONNAIRE MEASURES

This demographic information will be analyzed along with your survey responses. This information is not required, but will be helpful to survey analysis.

What race(s) do you identify with? (Multiple Choice)

☐ Asian Pacific Islander
☐ American Indian/Alaska Native
☐ African American/Black
☐ Caucasian/White
☐ Hispanic/Latino
☐ Other

What is your age?

Open response format
Appendix C

Instruments Used

Schmader, Johns, and Barquissau’s (2004) three-item measure is protected by
copyright so it is not reproduced here. To gain access to this measure please contact Toni
Schmader at tschmader@psych.ubc.ca.

Cortina et al. (2001) Workplace Incivility Scale (WIS) is protected by copyright so it is
not reproduced here. To gain access to this measure please contact Lilia Cortina at
lilia.cortina@umich.edu.

Fountain’s (2000) Career Interest Questionnaire is protected by copyright so it is
not reproduced here. To gain access to this measure please contact Jane Fountain at
Harvard University, John F. Kennedy School of Government, 79 John F. Kennedy Street,
Cambridge, MA 02138, USA.
February 14, 2011

Amber Knabb
2336 Grandview Ave. #3
Cincinnati, OH 45206

Re: Protocol #1052. The Interacting Effect of Gender Stereotyping and Frequency of Incivility on Career Path Selection

Dear Ms. Knabb:

The IRB has reviewed the materials regarding your study, referenced above, and has determined that it meets the criteria for the Exempt from Review category under Federal Regulation 45CFR46. Your protocol is approved as exempt research, and therefore requires no further oversight by the IRB.

If you wish to modify your study, including the addition of data collection sites, it will be necessary to obtain IRB approval prior to implementing the modification. If any adverse events occur, please notify the IRB immediately.

Please contact our office if you have any questions. We wish you success with your project!

Sincerely,

Kathleen J. Hart, Ph.D., ABPP
Vice Chair, Institutional Review Board
Xavier University

KH: sb

C: Morrie Mullins, advisor
Appendix E

INFORMED CONSENT FORM

You are being given the opportunity to volunteer to participate in a project conducted by Amber Knabb through Xavier University as part of her Master's thesis work.

This study examines how gender stereotypes interact with experiences of incivility to affect career path selection.

You were selected for this study because you are female currently enrolled in a private midwestern university.

During this study, you will be asked to answer a number of questions about your experiences and goals. This process will take approximately 20 minutes to complete. After answering the questions you will click on a link to a second survey where your identifying information will be collected in a separate database.

The risks in this study are minimal and are commensurate with physical discomfort that would be found with normal computer use: eyestrain, wrist fatigue, and potential frustration if internet or computer issues arise. None of these are designed into the study as research factors, but exist in any research conducted in an online environment.

You may receive course credit or extra credit for your participation in this study, at the discretion of your instructor. Your data will be used to further understand how your experiences relate to the general theories of gender stereotyping, incivility, and career path selection.

Your confidentiality will be maintained as no identifying information is collected in the first survey and the second survey, which solicits your identifying information (for credit purposes), will be kept
separate from the first. This second survey, which will be used to collect your name and the name of your professor, will in no way be linked to your test responses.

Course credit eligibility will be returned to your professor via the Participant Pool administrator upon completion of the study and other than this academic compensation, no other compensation will be provided for your involvement.

Your refusal to participate or complete this survey will have no effect on any future services you may be entitled to from Xavier University. You are free to withdraw from the study at any time without penalty. If you decide to participate in the project, the act of clicking Continue at the bottom of this page indicates your informed consent to continue. If you have any questions at any time during the study, you may contact Amber Knabb at knabba@xavier.edu or her advisor, Dr. Morrie Mullins, at (513) 745-3170 or mullins@xavier.edu.

Questions about your rights as a research subject should be directed to the Xavier University’s Institutional Review Board at (513) 745-2870.

I have been given information about this research study and its risks and benefits and have had the opportunity to ask questions and to have my questions answered to my satisfaction. I freely give my consent to participate in this research project.

[Continue Button]