# ACADEMIC DISHONESTY AS A FUNCTION OF STUDENTS' GENDER, COLLEGE MAJOR, AND FRATERNITY/SORORITY STATUS

A Thesis

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Master of Arts

by

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## ABSTRACT

Previous studies have shown that specific individual and group characteristics and behavior traits are associated with the engagement in academically dishonest behaviors. This paper examines the relation between peers' gender, college major, fraternity/sorority affiliation and expectations of academic dishonesty among their peers. 208 students from an Ivy League Institution were surveyed with varying conditions. The findings failed to reach conventional levels of significance but were in the direction of the hypotheses as follows: (1) perceptions of academic dishonesty were higher for the conditions in which the individual was a male; and (2) when the participant's gender and Greek status matched that of the individual in the condition, then the perception of that individual committing an academically dishonest act was lower; and (3) academic major had a minor influence on the probability of an individual committing an academically dishonest act, although the underpowered sample size may have obscured real differences.



*Keywords*: academic dishonesty, college, gender, major, fraternal status

## BIOGRAPHICAL SKETCH

Isabella A. Esposito was born in Staten Island, NY on August 20, 1995 as the eldest of Joseph V. Esposito and Lucia Esposito. She graduated from Susan E. Wagner High School in the top 2 percent of her graduating class in June 2013 and obtained her degree in Bachelor of Arts in May 2017 from Cornell University. In August 2017, she joined the Department of Human Development at Cornell University to pursue her Master of Arts study in Developmental Psychology. After graduation, Isabella plans to attend law school.

Aside from academics, Isabella loves to volunteer and help others. She has been involved with Guiding Eyes for the Blind for 5 years. She currently raises a future guide dog named Betty and is already planning to raise her second.

I dedicate this thesis to my parents, Joseph and Lucia, and my sisters, Bianca and Gabriella. For listening to me talk about writing my thesis and for all their help and support.

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# INTRODUCTION

Academic dishonesty can be defined as unapproved academic assistance or plagiarism of work (Kibler, Nuss, Paterson, and Pavela, 1988). Why then do college students cheat? While there is no known exact reason, previous studies have found that specific individual characteristics and behavior traits have led to the engagement in academically dishonest behaviors, such as gender, fraternity and sorority affiliation, and college major. While academic institutions have tried to combat these aberrant behaviors, the level of cheating is increasing and is showing no trend of stopping (Crown and Spiller, 1998). While those of authority might be able to detect and predict cheating, do students' own peers have expectations about the likelihood of academic dishonesty? In what follows, I briefly summarize research on individual and group differences that predict cheating before describing the current research.

## The Influence of Individual and Group Differences on Academic Cheating

### *Gender Differences*

There has been research on the role of gender in academic cheating, but not so much on the differences between male and female cheaters. When looking at these gender differences, older research literature indicates that male college students are more likely to cheat and plagiarize than their female counterparts (Bowers, 1964; Hetherington and Feldman, 1964; Niya, Ballantyne, North and Crocker, 2008; Roskens and Dizney, 1966). Women also tend to self-report lower rates of cheating then men (Davis, Grover, Becker, and McGregor, 1992).

Early socialization is a key component in how gender differences arise and lead to cheating as adolescents and adults. Ward and Beck (1990) combined two social theories of neutralization and sex-role socialization to help explain the significance of gender difference and why one gender is more likely to cheat than the other. Neutralization theory posits that individuals rationalize and use techniques to justify violations of social norms (Sykes and Matza, 1957). Individuals use neutralizing strategies (i.e., denial that the behavior was not wrong or it was not the fault of the cheater) to try to deflect their own responsibility for their deviant behavior. Under this theory, it was found that females are less likely to condone acts of cheating than males, whereas males believe that cheating is a common practice to engage in and an acceptable way to get ahead (Hendershott, Drinan, and Cross, 1999). Sex-role socialization theory presents the idea that women are likely to be socialized from an early age to obey the conventional and societal norms as opposed to men (Ward and Beck, 1990). When looking at the interaction between the two theories, it is found that females perceive academic integrity policies as having a strong deterrent effect on their behaviors that helps to restrain them from cheating and that females are less likely to draw on neutralization techniques (Hendershott, Drinan, and Cross, 1999; Ward and Beck, 1990). Males tended to justify their cheating and thus were more likely to engage in such behavior.

Moral and ethical engagement is also an influential factor in whether a student engages in academically dishonest behaviors. Because of the difference in childhood socialization between males and females, different moral reasoning and decision-making might arise when tempted with the chance to cheat (Chodorow, 1989).

Eisenberg (2004) found that if you believe academic dishonesty to be a violation of your morals, then there is a reduction in the level of cheating. This moral orientation leads to differences in behavior. For example, women are more likely to be socialized by their parents and peers to hold themselves to a higher moral standard (Franke, Crown, and Spake, 1997). In contrast, men are socialized early-on to engage in more physical and social deviance and risk-taking behaviors (David and Brannon, 1976), such as drinking obscene amounts of alcohol and risky sexual acts. This type of mentality for men's transgressions might transfer into the classroom. Therefore, it is then possible to draw a parallel between behavioral and moral gender differences and academic dishonesty.

***Fraternity and Sorority Affiliation***

Although there is little empirical evidence that has been published to examine and support high rates of academic dishonesty in fraternities or sororities, current literature has revealed that membership with a fraternity or sorority is thought to provide students with an environment that allows cheating to become a more likely occurrence. When comparing students with membership in fraternities and sororities to independent (non-member) students, the prevalence of cheating was shown to be higher (Bonjean and McGee, 1965; Burrus et al., 2007; Haines et al., 1986; Harp and Taietz, 1966; McCabe and Trevino, 1997; Stannard and Bowers, 1970; Storch and Storch, 2002).

Even though it is possible to argue that maybe some students only join Greek life for the social benefits associated with its membership, it is hard to ignore the other advantages of affiliating with a fraternity or sorority. For example, it is often the case in which a fraternity or sorority provides access to professional or student tutors and paper

resources (e.g., old exams, homework assignments, etc.) to its members that might help facilitate certain cheating behaviors to obtain the required, or perfect, academic achievement (Hamalian, 1959).

The norms and pressures found in Greek life across the country, like the pressure to maintain a minimum GPA required to keep membership while still having a fun social life, often mask the core values of fraternities and sororities in which academically dishonest behaviors possibly transfer amongst its members (Ercegovac and Richardson, 2004; McCabe and Bowers, 1996). Your 'brothers' and 'sisters' in your Greek organization, or your peers, are largely influential on individual behavior; McCabe and Trevino (1993) and Stevens (1984) found that such peer pressures play a considerable role on academic dishonesty and cheating. These pressurized behaviors from fraternity/sorority peers can be explained by the social learning theory (Burgess and Akers, 1996). Akers' social learning theory posits that people learn from one another through observation and modeling of day to day living. Through differential reinforcement, people learn how to both get rewards and avoid punishment for certain actions (Burgess and Akers, 1966). Thus, if students in a fraternity or sorority see their peers engage in academic dishonesty successfully, it is likely that those individuals will also to be compelled to try cheating to get ahead academically.

### *Academic Major*

When individuals enter college as freshman, most have a specific academic field or career path chosen. However, not many students understand the associated workload or types of courses needed to complete the major. Often, there is immense pressure to

do well from parents, peers, and the academic department. This type of pressure might lead certain students to resort to cheating and plagiarizing in order to obtain the grades others expect of them.

Every academic major is different, and some students are more likely to thrive in some while others would have a difficult time. When looking at the varying levels of cheating across academic fields, it was found that engineering and business students had higher rates of cheating than students in other fields (Marsden, Carroll, and Neill, 2005; McCabe and Trevino, 1995; Roig and Ballew, 1994). In a study that examined self-reported incidences of cheating on term papers at three Ivy League institutions, Harp and Taietz (1966) discovered that engineering had a 50% cheating rate as compared to a 26% cheating rate by students studying the humanities. In an earlier study that looked at self-reported incidents of academic dishonesty, a similar conclusion, Bowers (1964) found the cheating rates to be 66% for business majors, 58% for engineering students, and 39% for humanities majors. It is possible that the students majoring in either business or engineering are more likely to cheat because starting salaries and future career pay offs are greater and thus learning is not the main goal during college, but rather to just complete the major requirements necessary for the completion of the degree (Bowers, 1964; Harp and Taietz, 1966). This could also be due to self-selection, with students who major in business being less inclined to adhere to norms; and if they were forced to switch majors they'd still cheat more than average. Competition within the major might also be a cause of cheating, as those who want to get offers from the best companies after graduation will want some of the best GPAs. Competition has been shown to be positively correlated with cheating and literature has seen it as a major

factor to help facilitate academic deviant behaviors (Anderman and Murdock, 2007; Taylor et al., 2002; Whitley, 1998).

Because business and engineering are male-dominated fields, it is possible that the gender norms of males and the cheating behaviors of men influence the behavior of even the female students in the classroom (Basow, 1992). Because men are more likely to condone the act of cheating due to their ethical thinking and socialization upbringing, it would explain how some students were able to justify higher levels of cheating due to the workloads they receive (McCabe 1997).

Cheating across academic majors has become a problematic subject to discuss. Some majors, for example, have undergone changes in which they place emphasis on group work, take home exams, and collaborative learning both inside and outside the classroom. Although group work can be helpful for students, there is a good chance this type of learning might incite cheating through the copying of homework assignments and exams because there is no one of authority around to prevent it. Engineering and science majors are more likely to allow this kind of schooling; thus, it is likely for one to find higher levels of cheating in the engineering and natural sciences fields.

**Cognitive Heuristics, Biases, and Decision Making**

People make decisions every single day. Thankfully, cognitive heuristics make these decisions and judgments easier. Cognitive heuristics refer to mental shortcuts that help individuals make decisions quickly without having to over-analyze information. While these heuristics allow individuals to speed up the decision making process, it is also possible that biases and errors can be introduced and occur.

Gender differences and norms are just one example of the influence of gender stereotypes and heuristics on the decision making process. According to Kidwell, Stevens, and Bethke (1987), males and females are likely to view their counterpart as being less ethical. Therefore, one would expect to find that men would be more inclined to report that a woman is academically cheating. However, although there is this superior view of one gender over the other, the likelihood of getting reported for cheating or other academically dishonest actions is equal for men and women since no sex biases are found (Beasley, 2016).

When comparing those who are in affiliated in fraternities and sororities to those non-affiliated, one study found that when the individual was affiliated with a fraternity, guilty ratings in mock jury decision making scenarios were higher than when the individual was non-affiliated (Kramer and Van Volkom, 2018). In addition, those participants who were more likely to rate the individual as guilty were non-affiliated participants (Kramer and Van Volkom, 2018). Thus, when looking at biases involving members of the Greek community on college campuses, just the mention of the individual being a member of a fraternity or sorority leads to a view that these Greek members are more likely to commit a crime by students with no relations to any fraternity or sorority.

**The Present Study**

The current study was conducted to experimentally investigate whether college undergraduate students have expectations of the likelihood of academic dishonesty of their peers and whether cognitive heuristics and stereotypes regarding gender, fraternity

and sorority affiliation, and college major are influential in the decision-making process. Given previous findings, we expect to find that (1) academic dishonesty will be higher for the conditions in which the hypothetical individual is depicted as a male, (2) academic dishonesty will be higher for the conditions in which the hypothetical individual is described as being in a fraternity or sorority, and (3) academic dishonesty will be higher for the conditions in which the hypothetical individual is either an engineering or business major. We also expect to find that when the participant is a female, there is a greater chance that the participant will say the individual is cheating when it is a male (and vice versa). Due to experience within their own majors, we hope to find that participants whose majors match that of the hypothetical individual's major will be more likely to agree the person is not cheating. We expect the same result when the participant reports that he or she is in a fraternity or sorority.

# METHOD

## Participants and Materials

Participants were 208 undergraduate college students at Cornell University in Ithaca, NY. Of the participants, 147 were female and 61 were male. 91 participants reported membership with a fraternity or sorority. The participants were recruited at varying locations on campus to allow for diversity of students' majors. Of the 200 participants, 26.5% were engineers, 7.5% were humanity majors, 11.5% were business majors, and the majority of the participants (58.5%) were classified as 'other.'

The participants were asked to look at a set of 50 questions comprised of easy to hard questions that varied in topic (See Appendix A). These questions were designed to deceive participants by making the questionnaire seem very difficult. Participants were not asked to answer any of the questions, but instead to base their responses of others' performance on this questionnaire. The participants were then read a short script (See Appendix B) with 8 different conditions. Each condition varied the gender of the individual (male or female), and varied college major and whether or not the student is affiliated with a Greek organization: 1) He is in a fraternity, 2) She is in a sorority, 3) He is an engineering major, 4) She is an engineering major, 5) He is a history major, 6) She is a history major, 7) He is a business major, and 8) She is a business major.

**Procedure**

The order of the conditions was randomized across the 26 participants assigned to each condition) and participants were told that they would see a questionnaire of 50 questions, hear a short script, and answer some follow-up questions.

Participants were asked to a) report (yes or no) on the likelihood that the individual was telling the truth about his or her received score (85%) on the given questionnaire.; b) *if* the participants thought the individual was being academically dishonest about his (or her) score, and finally participants were asked to report a more likely score on a scale of 1-100 than what the hypothetical individual in their script claimed to have received.

The participants were then asked to report whether they are in a sorority or fraternity and what their academic major is. College major was classified into 4 categories: engineering, humanities, business, and other, the latter including undeclared.

## RESULTS

### Gender Differences

A between-subjects 2 (Condition) X 2 (Gender) logistic regression was conducted examining main effects and interactions of condition and participants' gender about the likelihood of whether the individual from the conditions was considered to be engaging in academic dishonesty. In the overall data set, no significant effects were found for condition or gender (all p's > 0.05). No significant 2-way interactions of condition x gender were found (p's > 0.05).

In Figure 1, the percentage of participants who responded that the individual is telling the truth is shown by condition. There is no overall trend, but it does appear that females and males reported "truth" more when the individual in the condition was a female.

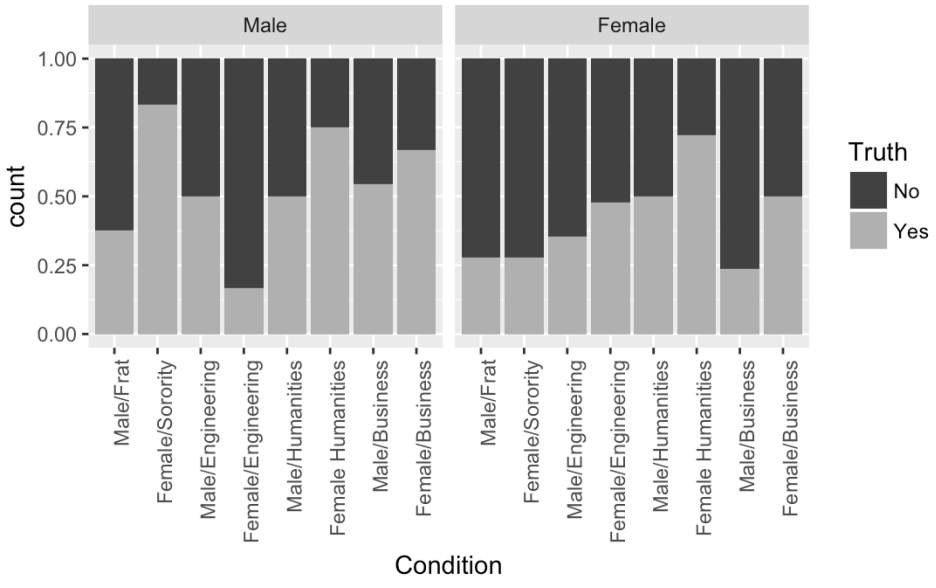


*Figure 1*. The Effect of Participant Gender Differences on the Percentage of "Truth" by the Identity of the Individual in the Condition.

**Fraternity and Sorority Affiliation**

A between-subjects 2 (Condition) X 2 (Gender) X 2 (Fraternal Status) logistic regression was conducted to examine main effects and interactions of condition and participants' fraternal status and gender about the likelihood of whether the individual from the conditions was considered to be engaging in academic dishonesty.

Percentages of "Truth" variable, split by condition, participant gender, and participant fraternal status, are shown in Appendix C (Figure 3). When the participants were fraternity or sorority members, the percentage of "Truth" was higher when the participants' gender and fraternal status matched that of the individual from the conditions (i.e., Greek member-female participants reported a higher percentage of "Truth" when the condition involved a female individual in a sorority versus the male condition and vice versa for Greek member-male participants). When the participants were non-fraternity males, a higher percentage of "Truth" showed for the condition with the female individual in a sorority. However, when the participants were non-Greek females, there was only a slight increase in the percentages of "Truth" for the condition with male fraternity members over the condition looking at female sorority members.

By filtering the overall data set to only look at the conditions in which fraternity or sorority affiliation was mentioned, no significant effects were found for condition, gender, or fraternal status within a Greek organization (all $p$'s $> 0.05$). No significant 2-way interactions of condition x fraternal status, condition x gender, and gender x frat were found ($p$'s $> 0.05$). A three-way interaction was not estimable, suggesting that it was possible that either not enough observations were taken to estimate the relevant

parameters or there were just no observations available that had that specific combination of levels of the three factors.

Table 1
*Probabilities of Response "Truth" for Conditions with Greek Letter Affiliation by Participants' Gender and Fraternal Status*

| Condition | Gender | Frat | Probability | SE | LCL | UCL |
|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0.3333 | 0.1925 | 0.0839 | 0.7319 |
| 2 | 0 | 0 | 0.8333 | 0.1521 | 0.3687 | 0.9772 |
| 1 | 1 | 0 | 0.3333 | 0.1571 | 0.1111 | 0.6666 |
| 2 | 1 | 0 | 0.2500 | 0.1530 | 0.0630 | 0.6229 |
| 1 | 0 | 1 | 0.5000 | 0.3535 | 0.0589 | 0.9411 |
| 2 | 0 | 1 | 0.9574 | 0.1017 | 0.1442 | 0.9997 |
| 1 | 1 | 1 | 0.2222 | 0.1386 | 0.0560 | 0.5790 |
| 2 | 1 | 1 | 0.3000 | 0.1449 | 0.0998 | 0.6237 |

*Note.* Number of female participants= 18; Number of male participants = 8; Number of members in a Greek organization = 11; Number of non-Greek members = 15; Condition 1= Individual is a Male Fraternity Member; Condition 2=Individual is a Female Sorority Member; Gender 0 = Male Participant; Gender 1= Female Participant; Frat 0 = Non-Greek Member; Frat 1 = Greek Member

When looking at the probabilities that the participant responded that the individual in the given condition was telling the truth (Table 1), the general trend was that the probability that the individual was telling the truth and not committing academically dishonest behavior was the condition in which the individual was a female and in a sorority (as compared to a male in a fraternity). However, the only time in which the probability of cheating was lower for a male in a fraternity was when the participant was a female/non-Greek affiliated. Overall, there was no evidence to show

that any of the combinations of condition and participants' gender and fraternal status are different from each other; the probabilities were almost the same and fell within the confidence levels that were large.

**Academic Majors**

A between-subjects 2 (Condition) X 2 (Gender) X 2 (Academic Major Category) logistic regression was conducted examining main effects and interactions of condition and participants' academic major and gender about the likelihood of whether the individual from the conditions was considered to be engaging in academic dishonesty. Three separate logistic regressions were performed for each of the major between-subject categories: engineering, humanities, and business. Percentages of "Truth" variable, split by condition, participant gender, and participant major category, are shown in Appendix C.

From Figure 4 in Appendix C, when looking at conditions 3 (individual from story is male engineering major) and 4 (individual from story is female engineering major), the overall finding is that when the participant was either an engineering major or not and the gender matched that of the individual in the condition, then the percentage was higher (i.e., male engineer participants reported had a higher percentage of "Truth" for condition 3). Female-humanities participants found the female individual to be lying 100% of the time. Female-business participants found males to tell the truth more than females.

From Figure 5 in Appendix C, when looking at conditions 5 (individual from story is male humanities major) and 6 (individual from story is female humanities major), the finding is that when the participant was a humanities major and the gender

matched that of the individual in the condition, then the percentage was higher (i.e., male humanities majors reported a higher percentage of "Truth" for condition 5). Otherwise, the percentage of "Truth" was generally higher for females.

From Figure 6 in Appendix C, when looking at conditions 7 (individual from story is male business major) and 8 (individual from story is female business major), the finding for business majors was different; Percentage was higher when a male-business participants reported on condition 8 (gender did not match gender). When participants were classified as "other" major (regardless of gender of participant), the percentage was higher for the condition with the female.

***Engineering Major.*** By filtering the overall data set to only look at the conditions in which an Engineering major was mentioned and creating a new variable "Eng" in which Engineering majors were compared to non-Engineering majors, no significant effects were found for condition, gender, or Engineering major (all p's > 0.05). No significant 2-way interactions of condition x gender, condition x Eng, and gender x Eng were found ($p>0.05$). A three-way interaction was estimable, but it was not significant ($p > 0.05$).

When looking at the probabilities that the participant responded that the individual in the given condition was telling the truth (Table 2), it was found that whether the participant was an engineer or non-engineering major, the probability that the individual was telling the truth and not committing an academically dishonest behavior by cheating was higher whenever the participant gender matched the individual's gender from the condition (i.e., female participant ~ female individual).

However, overall there was no evidence to show that any of the combinations of condition and participants' gender and academic major are different from each other; the probabilities were almost the same (except for that one outlier that was extremely small at 2.4e-08) and the confidence levels are too large.

Table 2
*Probabilities of Response "Truth" for Conditions with Engineering Major by Participants' Gender and Major Category*

| Condition | Gender | Eng | Probability | SE | LCL | UCL |
|---|---|---|---|---|---|---|
| 3 | 0 | 0 | 0.5000 | 0.2500 | 0.1235 | 0.8765 |
| 4 | 0 | 0 | 2.4e-08 | 5.4e-05 | 2.2e-16 | 1.0000 |
| 3 | 1 | 0 | 0.4167 | 0.1423 | 0.1848 | 0.6924 |
| 4 | 1 | 0 | 0.5000 | 0.1250 | 0.2723 | 0.7271 |
| 3 | 0 | 1 | 0.50000 | 0.2500 | 0.1235 | 0.8765 |
| 4 | 0 | 1 | 0.3333 | 0.2722 | 0.0434 | 0.8465 |
| 3 | 1 | 1 | 0.2000 | 0.1789 | 0.0272 | 0.6910 |
| 4 | 1 | 1 | 0.40000 | 0.2191 | 0.1002 | 0.7996 |

*Note.* Number of female participants= 38; Number of male participants = 14; Number of Engineering majors = 17; Number of non-Engineering majors = 35; Condition 3= Individual is a Male Engineer; Condition 4=Individual is a Female Engineer; Eng 0 = Non-Engineer Participant; Eng 1 = Engineer Participant

***Humanities Major.*** By filtering the overall data set to only look at the conditions in which a Humanities major was mentioned and creating a new variable "Hum" in which Humanities majors were compared to non-Humanities majors, no significant effects were found for condition, gender, or a Humanities major (all p's > 0.05). No significant 2-way interactions of condition x gender, condition x Hum, and gender x

Hum were found ($p>0.05$). The three-way interaction was estimable, but it was not significant ($p > 0.05$).

When looking at the probabilities that the participant responded that the individual in the given condition was telling the truth (Table 3), it was found that when the participant was a non-humanities major, the probability was higher for the condition in which the individual was a female. However, when the participant was a humanities major, gender was significant and affected the probability outcomes; probability of claiming the individual was truthful was higher whenever the participant gender matched the individual's gender from the condition.

Table 3.
*Probabilities of Response "Truth" for Conditions with Humanities Major by Participants' Gender and Major Category*

| Condition | Gender | Hum | Probability | SE | LCL | UCL |
|---|---|---|---|---|---|---|
| 5 | 0 | 0 | 0.3333 | 0.1925 | 0.0839 | 0.7319 |
| 6 | 0 | 0 | 0.8333 | 0.1521 | 0.3687 | 0.9772 |
| 5 | 1 | 0 | 0.5294 | 0.1211 | 0.3027 | 0.7446 |
| 6 | 1 | 0 | 0.7500 | 0.1083 | 0.4918 | 0.9029 |
| 5 | 0 | 1 | 1.0000 | 6.6e-05 | 2.2e-16 | 1.0000 |
| 6 | 0 | 1 | 0.5000 | 0.3536 | 0.0589 | 0.9411 |
| 5 | 1 | 1 | 2.4e-08 | 9.3e-05 | 2.2e-16 | 1.0000 |
| 6 | 1 | 1 | 0.5000 | 0.3536 | 0.0589 | 0.9411 |

*Note.* Number of female participants= 36; Number of male participants = 16; Number of Humanities majors = 7; Number of non-Humanities majors = 45; Condition 5= Individual is a Male Humanities Major; Condition 6=Individual is a Female Humanities Major; Hum 0 = Non-Humanities Participant; Hum 1 = Humanities Participant

***Business Major*.** By filtering the overall data set to only look at the conditions in which a Business major was mentioned and creating a new variable "Bus" in which Business majors were compared to non-Business majors, no significant effects were found for condition or Business major (both p's > 0.05). There was, however, a significant main effect of gender ($p = 0.0387$). No significant 2-way interactions of condition x gender and condition x Bus were found (both p's > 0.05). The 2-way interaction between gender x Bus was not estimable, as was the three-way interaction. This again suggested that it was possible that either not enough observations were taken to estimate the relevant parameters or there were just no observations available that had that specific combination of levels of factors.

When looking at the probabilities that the participant responded that the individual in the given condition was telling the truth (Table 4), the probabilities were higher when the gender of the participant matched the gender of the individual from the condition when the participant was a non-Business major. Males thought males were less likely to commit academic dishonesty than their female counterparts. Unlike previous findings from this study, when the participant was a Business major and male, the probability was higher for females being rated truthful than males. Due to a lack of Business major participants, the probability was unable to be determined from the data when the participant was a Business major and female.

Table 4.
*Probabilities of Response "Truth" for Conditions with Business Major by Participants' Gender and Major Category*

| Condition | Gender | Bus | Probability | SE | LCL | UCL |
|---|---|---|---|---|---|---|
| 7 | 0 | 0 | 0.7142 | 0.1707 | 0.3266 | 0.9280 |
| 8 | 0 | 0 | 0.6000 | 0.2191 | 0.2004 | 0.8998 |
| 7 | 1 | 0 | 0.2353 | 0.1029 | 0.0912 | 0.4855 |
| 8 | 1 | 0 | 0.5000 | 0.1118 | 0.2939 | 0.7061 |
| 7 | 0 | 1 | 0.2500 | 0.2165 | 0.0335 | 0.7622 |
| 8 | 0 | 1 | 0.9999 | 0.0003 | 2.2e-16 | 1.0000 |
| 7 | 1 | 1 | nonEst | NA | NA | NA |
| 8 | 1 | 1 | nonEst | NA | NA | NA |

*Note.* Number of female participants= 37; Number of male participants = 17; Number of Business majors = 5; Number of non-Business majors = 49: Condition 7= Individual is a Male Business Major; Condition 8=Individual is a Female Business Major; Bus 0 = Non-Business Participant; Bus 1 = Business Participant

**Scores by Condition**

If the participants thought the individual from the hypothetical script was being academically dishonest about his or her score, they were asked to report a more likely score on a scale of 1-100. Based on the average score per condition, Figure 2 shows that the average score is roughly the same per condition. There is a slight increase in likely score for the conditions in which the individual was a male, but this trend was not significant. The mean score was 75 (SD = 14; Median = 80).

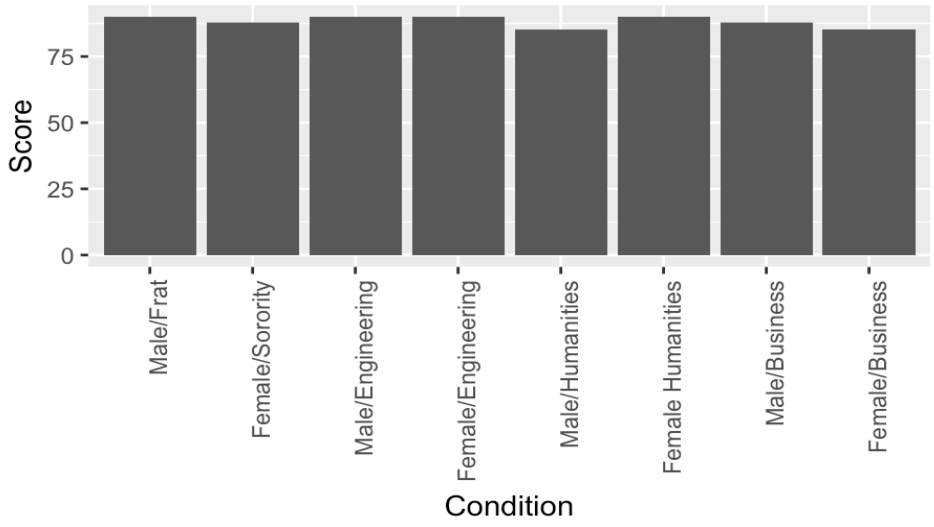


*Figure 2*. Average Scores by Identity of the Individual in the Condition.

## DISCUSSION

The purposes of this study were to examine whether college undergraduate students have expectations about the likelihood of academic dishonesty among their peers and whether cognitive heuristics and stereotypes regarding gender, fraternity and sorority affiliation, and college major are influential in the decision-making process. The most significant findings were as follows: (1) on average, perceptions of academic dishonesty were higher for the conditions in which the hypothetical individual was a male; and (2) on, average, when the participant's gender and fraternal status matched that of the hypothetical individual in the condition, then the perception of that individual cheating or committing an academically dishonest act was lower when compared to a condition in which there was a different individual or group; and (3) academic major had only a minor influence on the probability of an individual cheating or committing an academically dishonest act, although the underpowered sample size may have obscured real differences (see below).

Gender differences influenced the participants' decision about whether the hypothetical individual in each condition was telling the truth. Although the main effects and interaction between the variables were non-significant, the findings (Figure 1.1) show that female participants reported that the female hypothetical individual (regardless of fraternal status or academic major) was telling the truth in each condition more so than the male. In addition, male participants also reported higher counts of telling the truth when the condition involved a female individual, except for the case comparing male versus female engineering majors. In that case, male participants said that the male engineering individual was more truthful than the female engineering

individual. When looking at the decision to report "Truth" when regarding the gender of the hypothetical individual and the gender of the participant, the findings are consistent with previous research (Bowers, 1964; Hendershott, et. al., 1999: Niya, et. al., 2008). The male and female participants appear to have some internal cognitive heuristic that results in believing that males are more likely to engage in risky, cheating behaviors than females. Such a default bias is in keeping with the large literature documenting that males do, in fact, engage in riskier behavior (REF). Students are able to predict their own peers' likelihood of engaging in academically dishonest behavior based on gender alone.

In spite of the fact that the main effects and the interaction between the condition, gender, and fraternity and sorority membership variables were non-significant, the general finding (Appendix Figure 1, Table 3.1) is that females (both non-Greek and Greek) were more skeptical of the individuals from the conditions and reported a higher percentage of the individual was lying than did their male counterparts. Yet, both female and male participants had a higher probability of reporting that the hypothetical individual was telling the "Truth" when the condition presented a female participant; this finding is consistent with the finding that there are no gender biases in regards to cheating (Beasley, 2016). When looking specifically at fraternity and sorority member participants, the male participants assigned higher probabilities for the individuals to be telling the truth than did female participants. Overall, the percentages of "Truth" were low for the two conditions in which membership in a fraternity or sorority individual was presented. It may be that the perceived higher rates of academic dishonesty for fraternal members is due to the knowledge of the time-consuming

requirements and duties fraternity and sorority members require of their members. Without the time to dedicate to their academic studies, students are aware that lack of time might lead Greek members to resort to cheating to keep a decent, or minimum, GPA. An alternative interpretation might be that there is a bias towards Greek members; if students know that Greek members are more likely to engage in risky behaviors in a social context, what is stopping the same Greek members from engaging in risky cheating behaviors in an academic context? It is possible that this mentality might transfer into decision-making when considering fraternity or sorority members, thus explaining the higher levels of academic dishonesty. Finally, a common perception is that fraternity and sorority members have access to old prelims and therefore if they engage in unethical behavior of memorizing these past prelims, they may engage in related forms of cheating.

Academic major had only a minor influence on participants' perception about whether the hypothetical individual in each condition was telling the truth. When looking at conditions 3 (individual from story is male engineering major) and 4 (individual from story is female engineering major), it was found that whether the participant was an engineering major or non-engineering major, the probability that the hypothetical individual was telling the "Truth" and not committing an academically dishonest behavior was higher whenever the participant gender matched the hypothetical individual's gender from the condition (i.e., female participant ~ female individual). When looking at conditions 5 (individual from story is male humanities major) and 6 (individual from story is female humanities major), it was found that when the participant was a non-humanities major, then the probability of the individual to be

telling the "Truth" was higher for the condition in which the hypothetical individual was a female. However, when the participant was a humanities major, gender was significant and affected the probability outcomes; probability of claiming the individual was truthful was higher whenever the participant gender matched the individual's gender from the condition. When looking at conditions 7 (individual from story is male business major) and 8 (individual from story is female business major), the finding for business majors was different; when the gender and major of the participant matched that of the individual in the condition, it did not influence the percentage of "Truth." Males instead reported that females are more truthful in the business major and thus, less likely to commit academically dishonest behaviors. Non-business majors had higher probabilities when the gender of the participant matched the gender of the individual from the condition. When comparing the engineering, humanities, and business major conditions, the perceived level of academic dishonesty is lowest for the humanities majors; this trend is consistent with older findings by Harp and Taietz (1966) and Bowers (1964). However, there was only limited evidence to show that any of the combinations of condition and participants' gender and academic major were different from each other. It is possible that students are not as willing to report or predict the likelihood of academic cheating as a function of their peers' majors in college because they know that every major is likely to have some level of cheating, even if it is lower for some than others. Another explanation for these findings is that students, especially participants from an Ivy League institution, might have justified higher levels of cheating due to the extreme workloads they receive which would then coincide with previous research (McCabe, 1997). Of course, all of this presupposes the failure to find

differences was not due to low statistical power, a limitation necessitated by the limited resources and time of the investigator.

This study has limitations that should be considered when interpreting the results. First, the testing conditions were far from pristine laboratory conditions; through the use of oral surveys in loud buildings on a college campus, it is possible that students were not as invested in understanding the material presented to them or forgot the information about the individual in the condition by the time it came time to answer the follow-up questions. Second, the findings might not have been significant because the study was underpowered due to the limited budget and students available and willing to participate. Using G*Power (Faul, Erdfelder, Lang, and Buchner, 2007), a post hoc power analysis revealed that in order for the study to show that 2 groups differed by 50 percentage points (i.e. 33% of the condition1/male participant/non-Greek participant combination versus the 83% of the condition 2/male participant/non-Greek participant combination) and have 80% power at 0.5 alpha in a 2x2x2 between-subjects design, I would have needed 15 participants per combination. An overall 480 participants, minimum, would have been required for the study. Thus, it remains a possibility that some or all of the non-significant findings were due to an inability to detect any differences between groups. Finally, the percent correct "85%" presented to the participants in the script might have been too high of a value to be believable, regardless of any of the condition variables, and might explain the low percentages and probabilities of that individual telling the truth. Even within these limitations, the results of the study suggest that there is some interaction between gender, fraternal status, and

academic major when predicting the likelihood risk of peers committing an academically dishonest act.

Because most of the research that studies the interaction between cheating and other variables is two or more decades old, future research should survey and ask for participants to self-report if they cheat, the manner in which students cheat, if they would be willing to report someone who is cheating (i.e., would they be willing to report someone in their own major or fraternity), and even the rationale behind why academic dishonesty is wrong or if they are willing to justify it. This study sought to examine if peers are able to predict the likelihood with which their peers might engage in academic dishonesty. If there is already some cognitive heuristic regarding some groups as peers towards peers, it is possible that professors and university administrators might have the same views towards cheating perceptions. Instituting a stricter 'no-tolerance' policy within organizations and academic majors might lead to less cheating at the institution level.

## REFERENCES


Anderman, E. M., and Murdock, T. (2007). *Psychology of Academic Cheating*. San Diego, CA: Elsevier.

Bandura, A. (1986). *Social Foundations of Thought and Action.* Englewood Cliffs, NJ: Prentice-Hall.

Basow, S. A. (1992). *Gender: Stereotypes and roles (3rd ed.)*. Belmont, CA, US: Thomson Brooks/Cole Publishing Co.

Beasley, E.M. (2016). Comparing the demographics of students reported for academic dishonesty to those of the overall student population. *Ethics and Behavior. 26*, 45-62.

Bonjean, C. J., and McGee, R, (1965). Scholastic dishonesty among undergraduates in different systems of social control. *Sociology of Education 38*(2), 127-137.

Bowers, W. J. (1964). *Student Dishonesty and Its Control in College*. New York: Bureau of Applied Social Research, Columbia University.

Burgess, R. L., Akers, R L. (1966). A Differential Association-Reinforcement Theory of Criminal Behavior. *Social Problems, 14*(2), 128-147

Burrus, R. T., McGoldrick, K. and Schuchmann, P. W. (2007) Self-reports of student cheating: does a definition of cheating matter? *Journal of Economic Education*, *38*(1), 3–16.

Chodorow, N. (1989). *Feminism and psychoanalytic thinking*. New Haven, CT: Yale University Press.

Crown, D.F., & Spiller, M.S. (1998). Learning from the literature on collegiate cheating: A review of empirical research. *Journal of Business Ethics, 17*, 683-700.

David, D. S., & Brannon, R. (Eds.). (1976). *The forty-nine percent majority: The male sex role*. Random House.

Davis, S. F., Grover, C. A., Becker, A. H., & McGregor, L. N. (1992). Academic dishonesty: Prevalence, determinants, techniques, and punishments. *Teaching of Psychology*, *19*, 16-20.

Eisenberg, J. (2004). To cheat or not to cheat: Effects of moral perspective and situational variables on students' attitudes. *Journal of Personality and Social Psychology, 44*, 593-599.

Ercegovac, Z., and Richardson, J.V., Jr. (2004). Academic dishonesty: plagiarism included, in the digital age: A literature review. *College and Research Libraries*, *65*(4), 301-318.

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, *39*, 175-191.

Franke, G. R., Crown, D.F. and Spake, D. F. (1997) Gender differences in ethical perceptions of business practices: A social role theory perspective. *Journal of Applied Psychology*, *82*, 920-934.

Haines, V. J., Diekhoff, G. M., LaBeff, E. E., and Clark, R. E. (1986). College cheating: Immaturity, lack of commitment and the neutralizing attitude. *Research in Higher Education, 25*(4), 342-354.

Hamalian, L. (1959) Plagiarism: suggestions for its cure and prevention. *Composition and Communication*, 10(1), 50 – 53.

Harp, J., and Taietz, P. (1966). Academic integrity and social structure: A study of cheating among college students. *Social Problems, 13*(4), 365-373.

Hendershott, A., Drinan, P.F., and Cross, M. (1999). Gender and academic integrity. *Journal of College Student Development. 40*(4), 345.

Hetherington, E. M., and Feldman, S. E. (1964). College cheating as a function of subject and situational variables. *Journal of Educational Psychology, 55*(4), 212-218.

Kibler, W.C., Nuss, E.M., Paterson, B.G., & Pavela, G. (1988). *Academic integrity and student development: Legal issues, policy perspectives*. Asheville, NC, USA: College Administrators Publications.

Kidwell, J.M., Stevens, R.E. & Bethke, A.L. (1987). Differences in ethical perceptions between male and female managers: Myth or reality? *Journal of Business Ethics, 6*(6), 489-493.

Kramer, A., Van Volkom, M. (2018). The Influence of Cognitive Heuristics and Stereotypes about Greek Letter Organizations on Jury Decisions. *Psi Chi Journal of Psychological Research. 23*(1), 51-60.

Marsden, H., Carroll, M., and Neill, J.T. (2005). Who cheats at university? A self-report study of dishonest academic behaviours in a sample of Australian university students. *Australian Journal of Psychology. 57*, 1-10.

McCabe, D.L. (1997) Classroom Cheating Among Natural Science and Engineering Majors. *Science and Engineering Ethics*, *3*, 433-445.

McCabe, D. L., and Bowers, W. J. (1996). The relationship between student cheating and college fraternity or sorority membership. *NASPA Journal*, *33*, 280-291.

McCabe, D. L., and Trevino, L. K. (1993). Academic dishonesty: Honor codes and other contextual influences. *Journal of Higher Education, 64*(5), 520-538.

McCabe, D. L., and Trevino, L. K. (1997). Individual and Contextual Influences on Academic Dishonesty: A Multicampus Investigation. *Research in Higher Education, 38*(3), 379-396.

Niiya, Y., Ballantyne, R., North, M.S. and Crocker, J. (2008). Gender, Contingencies of Self-Worth, and Achievement Goals as Predictors of Academic Cheating in a Controlled Laboratory Setting. *Basic and Applied Social Psychology*, *30*(1), 76-83.

Robbins, C.A. and Martin, S.S. (1993). Gender, styles of deviance, and drinking problems. *Journal of Health and Social Behavior, 34*, 302-321.

Roig, M., & Ballew, C. (1994). Attitudes toward cheating of self and others by college students and professors. *The Psychological Record, 44*(1), 3-12.

Roskens, R. W., and Dizney, H. E (1966). A study of unethical academic behavior in high school and college. *Journal of Educational Research, 59*(5), 231-234.

Sykes, G., and Matza, D. (1957). Techniques of neutralization. *American Sociological Review, 22*, 664-670.

Stannard, C. I., and Bowers, W. J. (1970). The college fraternity as an opportunity structure for meeting academic demands. *Social Problems, 17*(3), 371-390.

Stevens, G. E. (1984). Ethical inclinations of tomorrow's citizens: Actions speak louder. *Journal of Business Education, 59*, 147-152.

Storch, E.A., and Storch, J.B. (2002) Fraternities, sororities, and academic dishonesty. *College Student Journal*, *36*(2), 247+.

Taylor, L., Pogrebin, M., and Dodge, M. (2002). Advanced placement-advanced pressures: academic dishonesty among elite high school students. *Education Studies, 33*, 403–421.

Ward, D. A. and Beck, W. L. (1990). Gender and dishonesty. *The Journal of Social Psychology, 130*(3), 333-339.

Whitley, B. E. (1998). Factors associated with cheating among college students: a review. *Research* in *Higher Education, 39*, 235–274.

## APPENDIX

**APPENDIX A**. Questionnaire Shown to Participants

**1. In 1892, Thomas Edison and Charles A. Coffin combined business efforts, and merged to form the company which is now called?**
**A. General Electric**
B. Duke Energy
C. FirstEnergy
D. PECO

**2. Who painted the Mona Lisa?**
A. Michelangelo
B. Raphael
**C. Leonardo da Vinci**
D. Sandro Boticelli

**3. What is the capital of Northern Ireland?**
A. Dublin
B. Derry
**C. Belfast**
D. Lisburn

**4. In golf, a score of 3 below par on a hole is known as?**
A. Bogey
**B. An eagle**
C. A birdie
D. A turkey

**5. Who wrote the *For Whom the Bell Tolls*?**
A. William Faulkner
B. John Steinbeck
C. T. S. Elliot
**D. Ernest Hemingway**

**6. Mosquitoes carry and transmit all of these diseases EXCEPT?**
**A. Typhus**
B. Malaria
C. Yellow fever
D. Dengue fever

**7. In what state was former president Barack Obama born?**
A. Seattle
**B. Hawaii**

C. Illinois
D. Washington

**8. In our solar system, which planet has the longest day?**
**A. Venus**
B. Jupiter
C. Mercury
D. Earth

**9. Which is the longest river in China?**
**A. Yangtze**
B. Yellow River
C. Mekong
D. Nile

**10. Which candy is not produced by Mars, Inc.?**
A. Snickers
B. Dove Chocolate
C. M&M's
**D. Kit Kats**

**11. What is the world's tallest waterfall?**
A. Victoria Falls
B. Niagra Falls
**C. Angel Falls**
D. Tugela Falls

**12. What does the acronym ZIP in ZIP code mean?**
A. Zone Information Protocol
B. Zone Indication for the Post
**C. Zone Improvement Plan**
D. Zone of Impending Post

**13. Which team has won the most men's World Cups?**
A. Germany
**B. Brazil**
C. Argentina
D. Uruguay

**14. How many U.S. touch the Pacific Ocean?**
A. Three
B. Four
**C. Five**
D. Six

**15. Which blood type is the rarest in humans?**
**A. AB negative**
B. AB positive
C. O negative
D. O positive

**16. Which is the most popular town name in the U.S.?**
A. Washington
B. Springfield
C. Arlington
**D. Franklin**

**17. Which animal is the fastest?**
A. Cheetah
B. Frigate Bird
**C. Peregrine Falcon**
D. Sail Fish

**18. In Greek mythology, Artemis is the goddess of:**
A. Agriculture
B. Wisdom
**C. Hunters**
D. Love

**19. How many people are in the U.S. electoral college?**
A. 100
B. 435
C. 535
**D. 538**

**20. Which Constitutional Amendment gave women the right to vote?**
A. The 13th Amendment
B. The 14th Amendment
**C. The 19th Amendment**
D. The 22nd Amendment

**21. What is the oldest city in the U.S.?**
**A. Saint Augustine**
B. Jamestown
C. Santa Fe
D. Jamestown

**22. Which U.S. president is NOT on multiple forms of currency?**
A. George Washington
B. Abraham Lincoln

**C. Alexander Hamilton**
D. Thomas Jefferson

**23. Which internal organ in the human body is the largest?**
**A. Liver**
B. Brain
C. Lungs
D. Heart

**24. What is the song that has been covered the most times?**
A. *Hallelujah* by Leonard Cohen
**B. *Yesterday* by the Beatles**
C. *Cry Me A River* by Julie London
D. *Amazing Grace* by John Newton

**25. During which month is the Earth closest to the sun?**
**A. January**
B. December
C. June
D. July

**26. What is the capital of Australia?**
A. Brisbane
B. Sydney
**C. Canberra**
D. Melbourne

**27. Which of the following is not a Noble Gas?**
A. Helium
B. Neon
**C. Bromine**
D. Xenon

**28. Which of the following flags does not have the colors red, white, and blue?**
A. Chile
**B. Lebanon**
C. France
D. Thailand

**29. Which actress has won the most Oscars?**
**A. Katharine Hepburn**
B. Meryl Streep
C. Cate Blanchett
D. Ingrid Bergman

**30. What is Dr. Seuss' real name?**
A. Thomas Green
B. Thomas Giefer
C. Theodore Getzler
**D. Theodor Geisel**

**31. Which of these countries was NOT a colony of Britain?**
A. Australia
**B. Greenland**
C. Egypt
D. India

**32. Who wrote Don Quixote?**
A. Miguel de Cervantes
**B. Gabriel García Márquez**
C. Jorge Luis Borges
D. Pablo Nerudo

**33. In the Shakespeare play *Romeo and Juliet*, what is Romeo's last name?**
A. Benvolio
B. Capulet
**C. Montague**
D. Mercutio

**34. What building is on the back of the one hundred dollar bill?**
**A. Independence Hall**
B. Jefferson Memorial
C. U.S. Treasury Building
D. The White House

**35. The average human body has how many pints of blood?**
**A. 8**
B. 9
C. 10
D. 11

**36. In what year did the Spanish Civil War end?**
A. 1936
**B. 1939**
C. 1941
D. 1945

**37. Which fingernail grows the fastest?**
A. Pointer
**B. Middle**

C. Ring
D. Thumb

**38. Who discovered penicillin?**
**A. Alexander Fleming**
B. Rosalind Franklin
C. James Chadwick
D. Zacharias Janssen

**39. Where is the smallest bone in the human body located?**
A. Nose
B. Finger
C. Toe
**D. Ear**

**40. How many children does Queen Elizabeth II have?**
A. 0
B. 2
**C. 4**
D. 9

**41. Which ocean is the largest?**
**A. Pacific**
B. Atlantic
C. Indian
D. Arctic

**42. Who did Madonna marry?**
A. Ralph Fiennes
B. Russell Crowe
C. Edward Norton
**D. Sean Penn**

**43. Ascorbic Acid is another name for which vitamin?**
A. Vitamin A
B. Vitamin B
**C. Vitamin C**
D. Vitamin K

**44. Which singing voice is the highest pitch?**
A. Tenor
**B. Soprano**
C. Alto
D. Baritone

**45. Where do the Canary Islands get their name from?**
A. Birds
B. Lizards
C. Cats
**D. Dogs**

**46. What does HTML stand for?**
**A. HyperText Markup Language**
B. HyperText Markup Labeling
C. HyperText Markup Link
D. HyperText Markup Localhost

**47. What is the capital of Missouri?**
A. Kansas City
B. St. Louis
**C. Jefferson City**
D. Springfield

**48. What is the oldest soft drink in the U.S.?**
A. Coca-cola
B. Pepsi
**C. Dr. Pepper**
D. Birch Beer

**49. Which of the following is the oldest baseball stadium?**
**A. Fenway Park**
B. Wrigley Field
C. Dodger Stadium
D. Yankee Stadium

**50. What year did the Civil War begin?**
**A. 1861**
B. 1897
C. 1914
D. 1939

**APPENDIX B.** Script Read to Participants

"We gave a Sona poll of 50 questions (show the questions to the participants to glance at so they can see how tricky some of the questions are) and gathered students' scores. The participants did not have to turn in their bubble sheets and they self-reported their scores. One student self-reported that he got 85% correct and ripped out the bubble sheet and threw it away. He told us that he is in a fraternity."

1) Are you confident that he is telling the truth? YES or NO
2) What score do you think is more likely? [*record some numerical score value*]
3) Are you in a sorority or fraternity?
4) What is your major?

**APPENDIX C.** Percentages of "Truth" Broken Down by Condition, Participant Gender, and Participant Fraternal Status or Academic Major

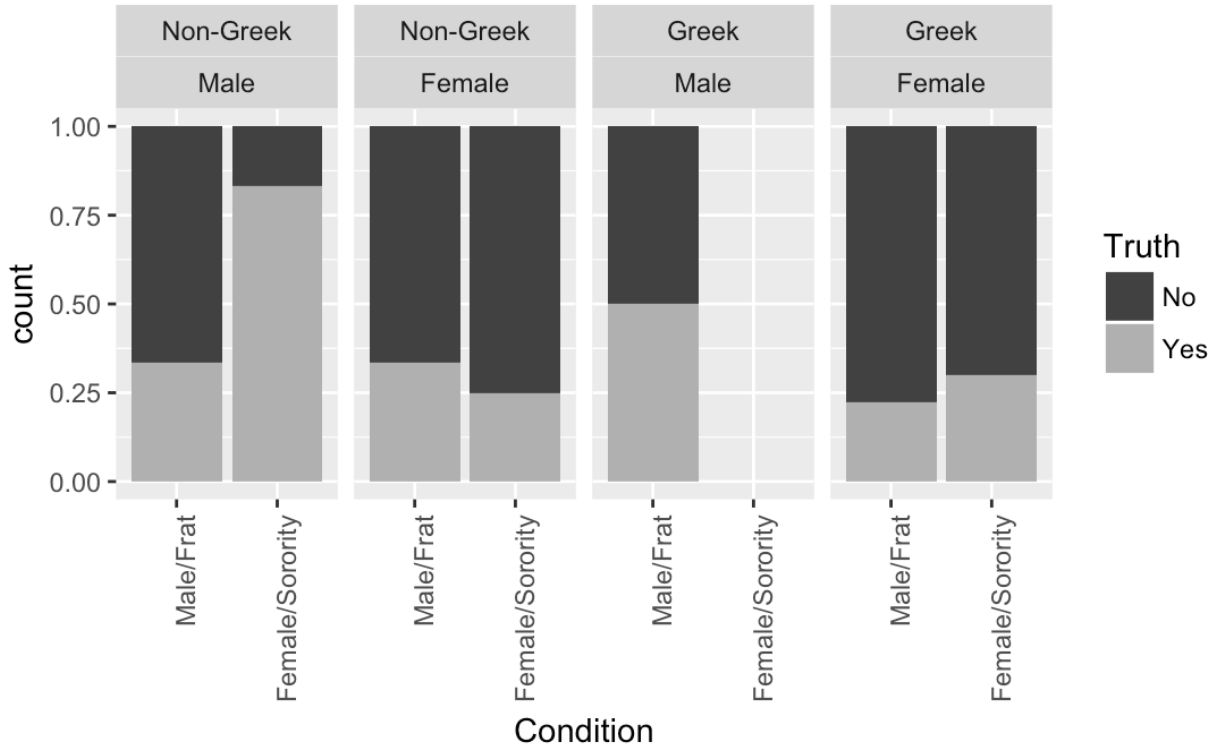


*Figure 3.* Conditions 1 and 2: Individual is a member of a fraternity or sorority

Figure 3 illustrates the percentages of responses to "truth" question (0=lying; 1=truth) split by the participant gender and fraternity or sorority membership for conditions 1 (individual from story is male Greek member) and 2 (individual from story is female Greek member). For example, the first set of bars is comparing the responses from male, non-fraternity participants when presented with conditions 1 and 2 and shows that non-fraternity males reported the female individual from the story to have a higher percentage of telling the truth compared to the male individual from the story.

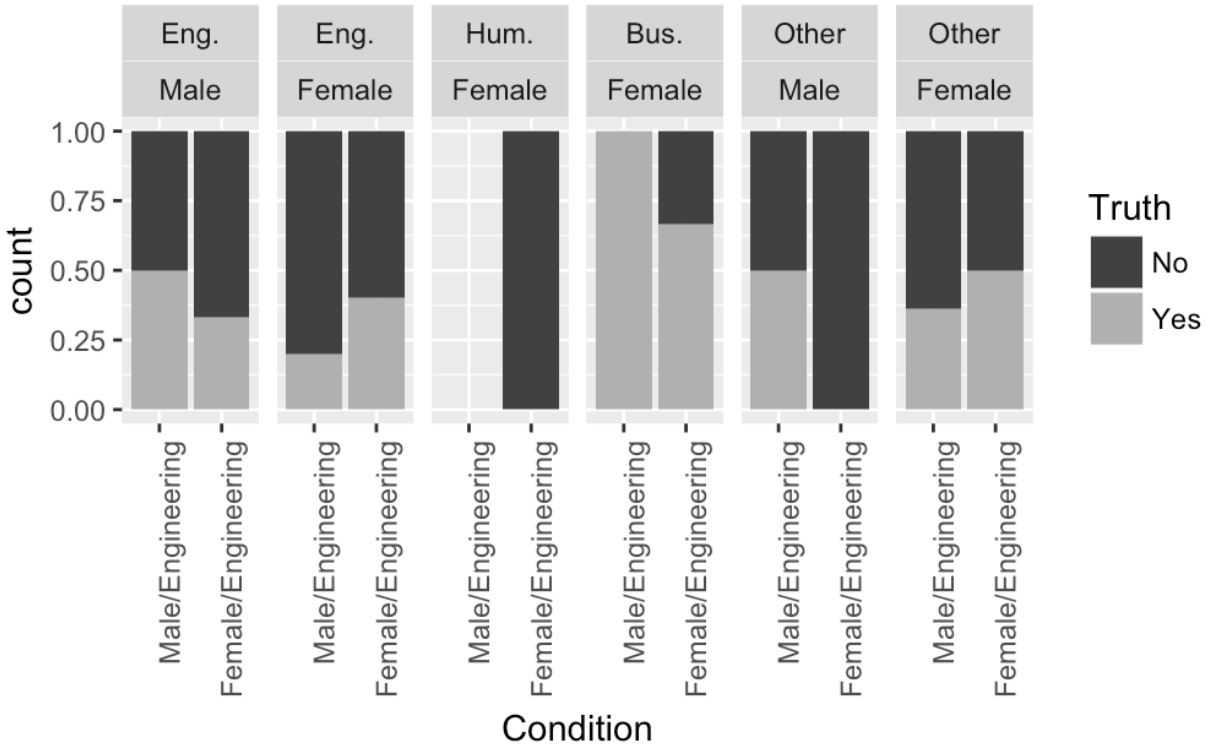


*Figure 4*. Conditions 3 and 4: Individual is an Engineering Major

Figure 4 illustrates the percentages of responses to "truth" question (0=lying; 1=truth) split by the participant gender and major for conditions 3 (individual from story is male engineering major) and 4 (individual from story is female engineering major). The majors are broken down into 4 categories: Eng. (Engineering), Hum. (Humanities), Bus. (Business), and Other. For example, the first set of bars is comparing the responses from male, engineering majors when presented with conditions 3 and 4.

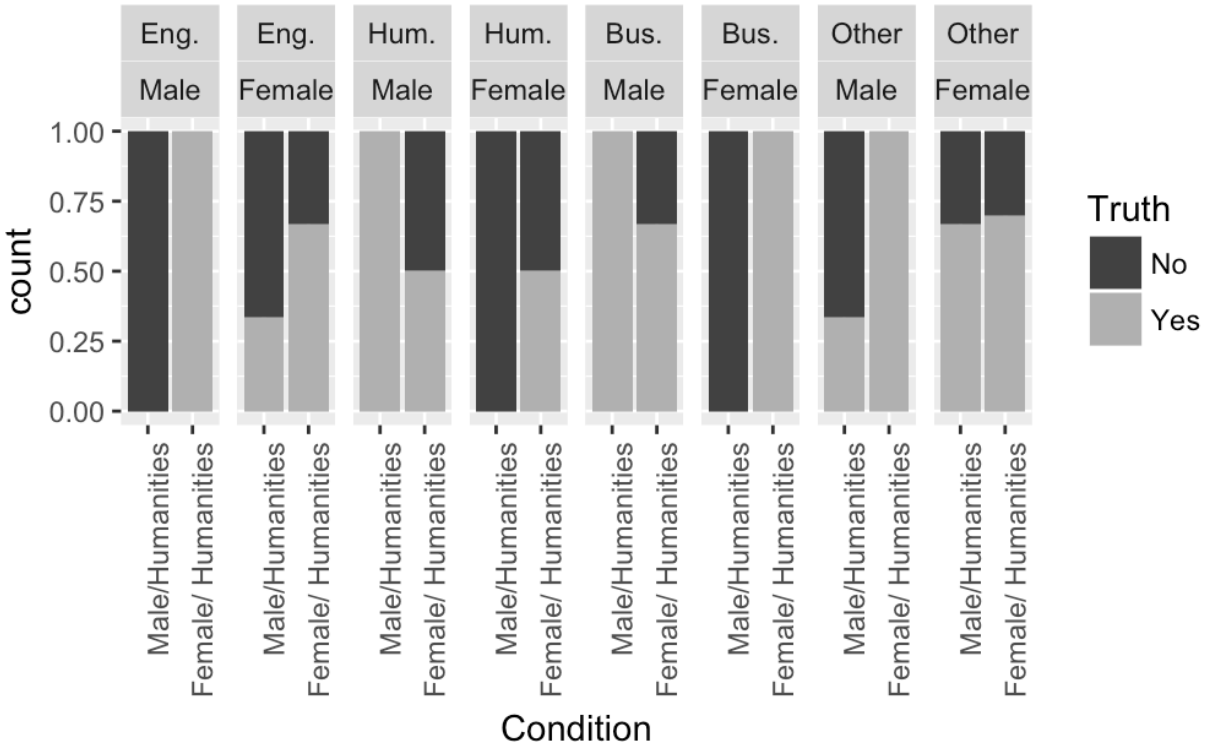


*Figure 5*. Conditions 5 and 6: Individual is a Humanities Major

Figure 5 illustrates the percentages of responses to "truth" question (0=lying; 1=truth) split by the participant gender and major for conditions 5 (individual from story is male humanities major) and 6 (individual from story is female humanities major). The majors are broken down into 4 categories: Eng. (Engineering), Hum. (Humanities), Bus. (Business), and Other. For example, the first set of bars is comparing the responses from male, engineering majors when presented with conditions 5 and 6.

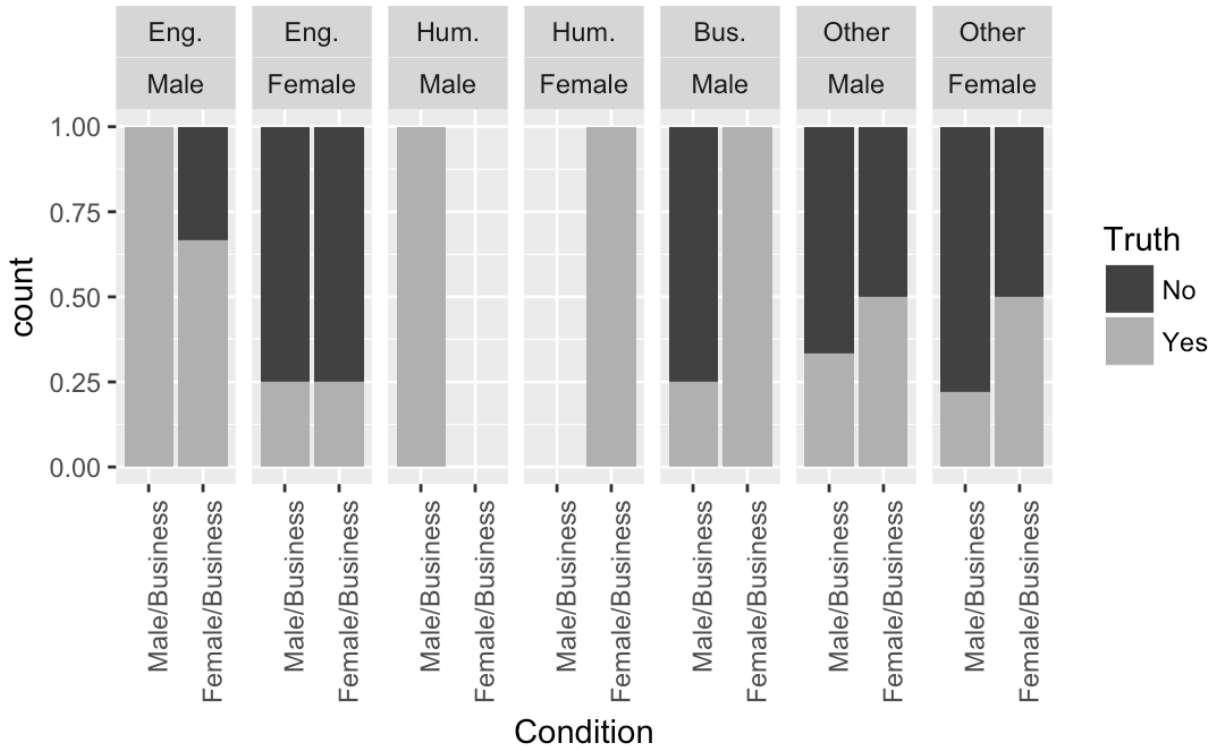


*Figure 6.* Conditions 7 and 8: Individual is a Business Major

Figure 6 illustrates the percentages of responses to "truth" question (0=lying; 1=truth) split by the participant gender and major for conditions 7 (individual from story is male business major) and 8 (individual from story is female business major). The majors are broken down into 4 categories: Eng. (Engineering), Hum. (Humanities), Bus. (Business), and Other. For example, the first set of bars is comparing the responses from male, engineering majors when presented with conditions 7 and 8.