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The Influence of Gender and Language Complexity on the Credibility of Expert Witness Testimony

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Abstract

With the increased use in expert witness testimony in civil trials, the decisions that jury members have made based on those testimonies have become very controversial. Previous research indicates that when a testimony is particularly complex, mock jurors will rely on cues outside the content of the testimony in order to determine the credibility of the witness. Research shows that there are different cues that are associated with higher credibility the expert. Common cues include the gender, occupation, and level of language complexity of the expert witness. This study used these three different cues as the independent variables, with two factors in each variable (female vs. male, complex language vs. simple, and nurse vs. surgeon). There were 80 undergraduate students who served as mock jurors that read through an expert witness testimony in a medical malpractice trial and determined the credibility of the testimony through two different measures. The results supported the hypothesis that females would be seen as more credible when they were using the gender matched simple language in the male dominated field. Other unexpected results were found, however, they support the overall notion that there are cues outside of the content of the testimony used to evaluate expert witness credibility.
The Influence of Gender and Language Complexity on the Credibility of Expert Witness 
Testimony

Throughout history, jury decisions have been surrounded with scrutiny and controversy. The fact that a group of civilian-peers makes decisions about the guilt, innocence, and fate of a stranger is, indeed, thought-provoking and calls for the highest level of concern and attention to the process. With regard to the process within the courtroom, there are many salient factors that can influence decisions made by the jury including the skill of the attorneys, the value and clarity of the evidence, and the credibility of the witnesses. Other, less salient, implicit factors of the expert testimony have been shown to influence jury decisions, include gender of the witness, race, and the subject matter (McKimmie, Newton, Schuller, & Terry, 2013). When the subject is particularly complex, attorneys will often times have expert witness in the subject to testify their opinion on the evidence and explain it to the jury.

An important question remains, can jurors be counted on to fully attend and listen to the attorneys and testimonies, to accurately comprehend and understand what is presented to them, and to make a thoughtful, unbiased, and rational decision? Unfortunately, the answer to this question is still being debated, and relatively recent research suggests that there are numerous factors that tend to influence juror perception. The purpose of the current project was to investigate the factors surrounding expert witness testimony and their impact on juror decision-making due to the increasing frequency of use of expert witnesses in trials. For example, researchers found that in 529 trials, 86% of these trials used expert testimony, with an average of four experts per trial (Gross & Syverud, 1991, as cited by Cooper, Bennett, & Sukel, 1996). In previous research, it was found that 97% of personal injury or death cases, an expert witness testified either for the plaintiff or the defendant (Cooper et al., 1996).
**Complex Testimony**

When investigating the credibility of these expert witnesses in the eyes of the jury, many factors contribute to the juror’s ability to understand the testimony. Previous research has questioned whether or not mock jurors can understand a testimony when it is particularly complex. The evidence presented by both the attorney’s and the experts can be difficult, especially when it involves highly technical or medical terminology that is not necessarily understood by the general public. The results of the research suggest that jurors are generally able to understand complex testimonies, however, there are cues used by jurors that go beyond the testimony content that are used to determine credibility of that witness (Cooper et al., 1996; Schuller, Terry, & McKimmie, 2005). Some of these cues include gender of the expert and the level of language of complexity used by the expert. (McKimmie et al., 2013). The demonstrated influence of these variables on perceptions of expert witness credibility would be of considerable significance to those who work in or who find themselves otherwise involved with the legal field. This research may identify factors that influence juror perceptions of witness credibility and, in turn, influence the jury to decide a guilty or innocent verdict in a trial.

**Witness Gender and Complexity of Language**

There is reason to expect that the variables of expert witness gender and complexity of language used are related based on previous research in this area. For example, McKimmie et al. (2013) tested whether a male or female expert witness would be more convincing when using simple or complex language. In this study, participants were tested under a high cognitive load and were given a price-fixing case in a male oriented domain to read and consider. This study made use of a distraction task in order to cause the participants to draw upon heuristic cues when reading the trial transcript. They expected to find that language complexity would only affect
credibility when the processing load of the participant was high rather than low. These researchers found that participants were more convinced when the female witness used simple language. They were least persuaded by the female expert when she used complex language. Both of these results were only when the cognitive load for the participant was high. However, no difference was found between the male experts in damages awarded suggesting that language complexity was not used as a heuristic cue. This may be because there is a general tendency to evaluate male experts as more credible in a legal setting or a male dominated field (Mckimmie et al., 2013). The results of this study indicate that a female’s expert credibility is more often subject to additional cues such as language complexity or gender. The present study attempts to further these findings by assessing the credibility in fields that are either male dominated or female dominated. It is important to understand the effects of these cues in order to receive a fair, unbiased decision by the members of the jury.

Gender Stereotypes and Expectations of Profession

Results of previous studies also indicate that expert witnesses are more credible when the gender of the witness matched jurors’ (stereotypical) expectations of a professional who is most likely to be employed within that area (McKimmie, Newton, Terry, & Schuller, 2004; Schuller, Terry, & McKimmie, 2001). For example, Schuller et al. (2001) compared juror’s evaluations of male and female expert witnesses in the context of a female-dominated career (i.e., women’s clothing industry) or a male-dominated career (i.e., construction industry). However, it was found that there is a more pronounced difference when the case involved a male-dominated domain. Again, this indicates the importance of gender within the courtroom and how both jury members and attorneys should be aware of this factor. The results of this study suggested enhanced support for the witness when the gender of the expert “matched” the stereotypical
gender-dominated career area (i.e., male witness for a construction-based case and female witness for a clothing industry case). Further research, as the present study suggests, is needed to look at the interaction between gender congruency and language complexity of an expert witness. This is especially important because of the previously noted common use of complex, technical testimony in civil cases.

Both lines of research highlight the evident impact of expert witness characteristics on juror perceptions of credibility and evaluation – a link that has practical significance in the context of a legal trial. Expert witness gender tends to be an important factor in juror perceptions. The complexity of language used by the witness further impacts credibility as does the congruency between the expert witness gender and their professional career field. To date, however, no known study has compared the variables of witness gender (male or female), type of language used (simple or complex), and stereotypical gender-dominated career (nurse or surgeon).

There is reason to believe that there are gender stereotypes that influence the perception of individuals who hold careers in the medical field. In particular, previous research suggests that 93% of female nursing students agree that nursing was more appropriate for women than men. This was because of the inborn nature of compassion that females are believed to have (Bartfay & Bartfay, 2007, as cited in Clow, Ricciardelli, & Bartfay, 2014). Men and women are thought to have specific characteristics that allow them to succeed in certain career paths (Eagley, 1987; Eagly & Steffen, 1984, as cited in Clow et al., 2014). In the courtroom, these stereotypes and gender roles come into play when they are portrayed as experts in a specific field. The current study is looking specifically at the nurse versus surgeon gender stereotypes. Because previous research suggests that people are more accepting of women in female dominated roles, such as
nursing, it is possible that this may have implications on the credibility of an expert witness (Decker, 1986, as cited in Clow et al., 2014). Gender congruency in previous expert witness studies demonstrates the possibility that participants will think that experts who are in careers that are gender congruent will be seen as more credible (Schuller et al., 2001).

**Purpose and Hypotheses**

The purpose of the current study was to explore participant perceptions of expert witness credibility as a function of witness gender, complexity of language used by the witness, and profession of the witness within the context of a medical malpractice case. Participants read a transcript from a medical malpractice trial that resulted in the death of a patient. Participants were randomly assigned to one of eight possible conditions in which the expert witness character alternated between a male and female and between a nurse or a surgeon, and the level of language complexity used will alternate between simple and complex (i.e., male-surgeon-complex language; male-surgeon-simple language; female-surgeon-complex language; female-surgeon-simple language; male-nurse-complex language; male-nurse-simple language; female-nurse-complex language; female-nurse-simple language).

In this study, it was hypothesized that surgeons would be seen as more credible than nurses as expert witnesses. There was also an expected difference between males and females within the two professions. Male surgeons were expected to be more credible than female surgeons, and female nurses were expected to be more credible than male nurses. In the current study, the female dominated role was the nurse and the male dominated role was the surgeon. This is supported by the fact that in the Yale Journal of Biology and Medicine, Freishlag suggests while the rate of women attending medical school is on the rise, surgeons continue to be predominantly male. The amount of females in the total number of surgeons is roughly one-third.
(Freischlag, 2008). The current study will be exploring the influence of gender congruency in these male and female dominated domains.

As the findings in Schuller et al. (2005) suggest, females using simple language were expected to be more credible than females using complex language in the surgeon condition. Because previous research suggests that language complexity is only a heuristic cue in male dominated career fields, no specific hypothesis was made about the influence of language complexity on credibility in the female dominated (nurse) career field. Although it is important to note that because simple language is seen as more feminine, having a gender “matched” occupation and a more feminine language type may increase the witness credibility. Other variable combinations will be explored; however, no specific hypotheses will be made.

Based on previous research by Schuller et al. (2005), I was not expecting the participant gender to have any effect of the results of the present study. While I asked participants to reveal gender and other demographic information, the present study explored the findings with no expectation of any significant results between males and female participants. Lastly, it was hypothesized that the male surgeon using complex language would have the highest credibility and female nurses using simple language would have the second highest credibility rating.

Findings from this study may inform attorneys, judges, and jurors and make them aware of potential biases that may affect the way a testimony is perceived. Jurors should make thoughtful and rational decisions about the trial that are free from bias, and if they are being influenced by factors outside of the content of the trial (such as characteristics of the witness), then this could greatly affect the lives of the individuals on trial and ultimately justice.

Method

Participants
The participants of this study consisted of 80 undergraduate psychology students at Bellarmine University. There were 16 males and 64 females. Participants also consisted of 21 freshman, 12 sophomores, 30 juniors, and 17 seniors. All participants voluntarily chose to participate in this study by signing the informed consent form that was presented to them prior to the materials of the present study. Participant selection was limited to those who were enrolled in the particular psychology classes that were invited to participate in the current study. This study was reviewed by Bellarmine University’s Institutional Review Board.

**Design**

The design of this study was a 2 x 2 x 2 factorial design. Thus, the three independent variables were witness gender (male or female), complexity of language (simple and complex), and witness profession (nurse or surgeon). The dependent variable for this study was the credibility rating of the expert witness.

**Independent Variables.** The three independent variables were manipulated by altering the trial transcript. Having three independent variables with two levels each, there were eight versions of the transcript (male surgeons using complex language, male surgeons using simple language, female surgeons using complex language, etc.). Please see the figure (Appendix A) illustrating the study design.

**Dependent Variables.** Participants were asked to provide an assessment of the testimony and trial immediately following the reading of the testimony. The dependent variable chosen to be measure in the present study was the credibility of the expert witness perceived by the participant. The credibility was assessed by (1) a question asking participants to award the plaintiff a dollar amount, and (2) a question asking participants to rate the credibility of the witness on a scale from 1 to 5.
Materials

An expert witness testimony from a medical malpractice trial was developed by the researchers for the purposes of this study. In the trial, it is questioned whether or not the death of a patient was the fault of this doctor. The plaintiff in each condition was the deceased patient’s husband and the defendant was the surgeon or nurse who was present in the surgical procedure in question. In this trial, the patient had a surgery performed in the abdomen area of their body, and fifteen months after completion of the surgery the patient died. A sponge was left inside the patient after surgery was completed and there is a question of whether the death of the patient is at the fault of the doctor or if it is because of the patient’s existing intestinal problems. An excerpt of expert witness testimony in this trial was written up for this study. The participants were asked to read through this expert witness testimony and of these testimonies, there were two different language complexity levels used: complex and simple. In the complex language testimony, more medical terminology was used (i.e. colectomy, laparotomy, gastrointestinal perforation, etc). In the simple language testimony, common knowledge words were used to discuss the surgery (i.e. large intestine, belly, digestive system). The expert was also one of two professions, a nurse or a surgeon. There were also two different conditions based on the gender of the witness (male or female) which was differentiated by the name of the witness: Elizabeth Smith (female) and John Smith (male). Other words indicating the gender were also used such as Ma’am or Sir. With the language type, witness profession, and witness sex that created 8 different conditions that were randomly handed out to the participants. (Complex Male Surgeon, Complex Female Surgeon, Simple Male Surgeon, Simple female surgeon, Complex male nurse, complex female nurse, simple male nurse, and simple female nurse.) Please see Appendix B for a copy of the expert witness testimony materials used in this study.
A series of questions were asked along with the excerpt of the testimony. First, they were asked to award an amount of damages to the plaintiff based on what the expert testified. They were told that the plaintiff asked for $500,000, however, they were free to award any amount of money. Participants were then asked to rate the extent to which they thought the expert was credible, 1 meaning they didn’t believe them at all (“I disagree that they were credible.”) and 5 meaning they believed every word they said (“I agree that they were credible”). The participants were then asked to complete demographic questions about their gender, academic classification, and age. Please see Appendix C for a sample of the questionnaire that was presented to participants.

Procedure

Potential participants were first presented with the informed consent. They were instructed to read through and evaluate whether or not they wanted to participate in the study. Those who elected to participate signed the informed consent which was collected by the researcher. They were then presented with the expert witness testimony and survey. The researcher instructed the participants to read through the testimony and answer the questions that followed. If any questions made them feel uncomfortable, they were instructed not to answer them. When the participants completed with the questions, they were to raise their hand so that the researcher could collect their survey. The instructor collected all the surveys and the participants were able to leave when they were finished.

Results
Descriptive statistics were calculated for money awarded. The range of money awarded to the plaintiff was $0 to $1,000,000.00. The mean of this distribution was $426,562.00 ($SD = $143,715.59). Descriptive statistics were also calculated for witness credibility. The range of the distribution was 2.00-5.00 and the mean was 4.400 ($SD = .74).

A Pearson correlation coefficient was calculated to examine the relationship between the money awarded to the plaintiff and the witness credibility score. A positive correlation was found, $r(78) = .262, p = .009$ (1-tailed), indicating a significant linear relationship between the two variables. Those who gave a higher money award to the plaintiff also gave the witness a higher credibility score.

Descriptive statistics were calculated for the monetary award variable for each independent variable group (language complexity x witness profession x witness sex) and were placed in order from the greatest to least. These data can be found in Table 1. As expected, the largest monetary award was achieved when the witness was a male surgeon using complex language. In fact, the money awarded by the participants in this condition (male surgeon with complex language) was significantly higher than the monetary awards in all other conditions combined, $t(78) = 2.00, p = .024$, one-tailed.

A 2 (language complexity) x 2 (witness profession) x 2 (witness sex) between-subjects factorial multivariate analysis of variance (MANOVA) was conducted on the two dependent variables (monetary award and ratings of witness credibility) to address the remaining hypotheses. A significant three-way interaction between language complexity, witness sex, and witness profession was found, $F(2,71) = 5.18, p = .008, \eta^2_p = .127$. No main effects or possible two-way interactions were significant (all $F$’s < 1.42, all $p$’s > .25). The results of the between-subjects effects indicate the significant three-way interaction held for the monetary award
variable, $F(1,72) = 9.59, p = .003$, but not for the witness credibility rating, $F(1,72) = .00, p = 1.00$. Thus, the following analyses will investigate the three-way interaction for the monetary award variable. See Figure 1 for a summary of these data.

To investigate this three-way interaction between language complexity, witness profession, and witness sex, I conducted two follow-up factorial ANOVAs (one for the simple language testimony condition and the complex language testimony condition) comparing the influence of witness profession and witness sex on monetary award. The results of these two factorial ANOVAs are summarized separately for the simple language testimony condition and the complex language testimony condition.

**Simple Language Testimony**

For the simple language testimony condition, a 2 (witness sex) x 2 (witness profession) factorial ANOVA was conducted on the participants judgments regarding monetary award in the case presented. A significant interaction was found between witness sex and witness profession, $F(1,36) = 6.24, p = .02, \eta^2_p = .15$. There were no significant main effects (both $F$’s < .34, both $p$’s > .56). See Table 2. To further explore the significant interaction in the simple language testimony condition, a series of independent t-tests were conducted comparing the monetary award amounts by witness sex and profession.

**By Witness Sex.**

**Male Witnesses.** An independent-samples t test comparing the mean damages awarded to male surgeons and male nurses using simple language found a significant difference between the means of the two groups ($t(18)= 2.809, p = .012$, two-tailed). The mean monetary award of the male nurse using simple language was significantly lower ($M = $355,000.00, SD = $6,324.55) than the mean of the male surgeon using simple language ($M = $480,000.00, SD =...
$125,720.15). So, the participants awarded a lower monetary award to the male nurses than the male surgeons in the simple language testimony condition.

**Female Witnesses.** An independent-samples t test comparing the mean damages awarded to female surgeons and female nurses when using simple language. No significant difference was found ($t(18)= -1.14, p > .05$). The mean monetary award of the female nurse using simple language ($M = $357,500.00, $SD = $184,861.06$) was not significantly different than the mean of the female surgeon using simple language ($M = $435,000.00, $SD = 108,140.85$). So, the participants did not award significantly different amounts of money to the female nurses and female surgeons in the simple language testimony.

**By Witness Profession.**

**Nurse Profession.** An independent-samples t test comparing the mean damages awarded to female nurses and male nurses using simple language found a marginally significant difference between the means of the two groups ($t(18)= 1.98, p = .063$, two-tailed). The mean of the female nurse using simple language type tended to be lower ($M = $357,500.00, $SD = $184,861.06$) than the mean of the male nurse using simple language ($M = $480,000.00, $SD = $63,245.55$).

**Surgeon Profession.** An independent-samples t test comparing the mean damages awarded to female surgeons and male surgeons using simple language found a marginally significant difference between the means of the two groups ($t(18)= .1526, p = .07$, one-tailed). The mean of the male surgeon using simple language type was marginally lower ($M = $355,000.00, $SD = $125,720.15$) than the mean of the female surgeon using simple language ($M = $435,000.00, $SD = $108,140.85$).

**Complex Language Testimony**
The 2 (witness sex) x 2 (witness profession) factorial ANOVA for the complex language testimony, yielded a marginally significant interaction effect for witness sex and witness profession, $F(1,36) = 3.69, p = .063$. No significant main effects were found (both $F$’s < 2.90, both $p$’s > .097). See Table 3. I chose to explore this marginally significant interaction, because I had specific hypotheses regarding the complex language condition. A series of independent samples t-tests were conducted on the monetary award for the two different professions, controlling for witness sex.

**By Witness Sex.**

**Male Witnesses.** An independent-samples $t$ test comparing the mean damages awarded male surgeons and male nurses when using the complex language type. No significant difference was found $t(18)$ = -.690, $p = .25$, one-tailed. The mean of the male nurse using complex language ($M = $460,000.00, $SD = $84,327.40) was not significantly different than the mean of the male surgeon using complex language ($M = $510,000.00, $SD = $213,177.06). So, although the mean awards were in the hypothesized direction, participants did not award statistically different amounts to male surgeons and male nurses in the complex language testimony condition.

**Female Witnesses.** An independent-samples $t$ test comparing the mean damages awarded to female surgeons and female nurses using complex language found a significant difference between the means of the two groups ($t(18)$ = 2.269, $p = .016$, one-tailed). The mean of the female surgeon using complex language type was significantly lower ($M = $345,000.00, $SD = $160,641.08) than the mean of the female nurse using complex language ($M = $470,000.00, $SD = $67,494.86). So, participants awarded more money to the female nurses than the female surgeons in the complex language testimony.

**By Witness Profession.**
**Nurse Profession.** An independent-samples *t* test comparing the mean damages awarded female nurses and male nurses when using the simple language type. No significant difference was found *t*(18) = -.293, *p* > .05. The mean of the female nurse using complex language (M= $470,000.00, SD = $67,494.86) was not significantly different than the mean of the male nurse using complex language (M = $460,000.00, SD = $84,327.40). So, there was not a significant difference in the amount of money awarded to the plaintiff when the witness was a male nurse or a female nurse in the complex language condition.

**Surgeon Profession.** An independent-samples *t* test comparing the mean damages awarded to female surgeons and male surgeons using complex language found a significant difference between the means of the two groups (*t*(18) = 1.955, *p* = .03, one-tailed). As hypothesized, the mean of the female surgeon using complex language type was significantly lower (M = $345,000.00, SD = $160,641.08) than the mean of the male surgeon using complex language (M = $510,000.00, SD = $213,177.03). So, participants awarded more money to the plaintiff when the witness was a male surgeon rather than a female surgeon in the complex language testimony condition.

**Discussion**

The current study investigated the influence of gender and language complexity on expert witness testimony in both male and female dominated domains. This was done within the context of a medical malpractice trial with the occupation of the expert being a nurse (female dominated) vs. surgeon (male dominated). The results of this study suggest that language complexity and gender may be used as a factor in deciding a guilty or innocent verdict. We will begin by discussing the results of the simple testimony and how they compare with the expected results.
It was predicted that overall, surgeons would be seen as more credible than nurses. This was supported by the results of the male experts in the simple language condition. For example, the male nurse was awarded a significantly lower amount of damages than the male surgeon in the simple language condition. The hypothesis that female nurses would be seen as more credible was also not supported because no significant difference in monetary award was found between the female nurse and the female surgeon when they used simple language. Furthermore, some unexpected results were found when the female nurses were awarded a marginally lower amount of monetary damages than the male nurse. In previous research it was indicated that witnesses would receive enhanced support when the gender of the witness “matched” the stereotypical gender-dominated career area (Schuller et al., 2001). In this case we would have expected more damages awarded to the female nurse versus the male nurse because the nurse is typically female.

There was some evidence to support the hypothesis that females using simple language in a male dominated career would be seen as more credible than male witnesses using simple language in that same career field. Specifically, a marginally significant difference was found in the simple language condition between the mean amount of damages awarded to the male surgeon and the female surgeon, with the female surgeon being marginally higher. These results are in accordance with McKimmie et al. (2013).

The complex language condition revealed both expected and unexpected results. It was expected that male surgeons would be awarded a significantly greater amount of damages than male nurses based on the “matched” career domain and language complexity level. However, while the mean damages awarded were in the correct direction, there was no significant difference found between money awarded to male surgeons versus male nurses. While this
finding is not in accordance with Schuller et al. (2001), this may support the supposition that males are more credible in a legal setting. Because males would already be seen as more credible in the legal setting, whether or not they are “matched” with their gender congruent career field would not have an effect on their credibility. They would already been seen as more credible because they are males, in turn, language complexity or career field would not affect the results in this particular setting (McKimmie et al., 2013).

The hypothesis that female nurses would be seen as more credible than female surgeons was supported by the results of the female witnesses in the complex condition. This is most likely because of the fact that a female nurses are seen as more trustworthy because they are in a female dominated career field (Clow et al., 2014) Therefore, because they are already seen as more credible because they are “matched” with their career profession, language complexity may not be used as a cue to determine the level of credibility. However, more research is needed to confirm this finding in a female dominated career.

When damages awarded to male nurses and female nurses were compared in the complex condition, the hypothesis made was not supported. No significant differences were found between male nurses and female nurses. While it was predicted that female experts would be more credible than male experts in the nursing condition, the fact that there was no difference found may have been because of the previously stated finding that males are seen as more credible in a legal setting (McKimmie et al., 2013).

In accordance with McKimmie et al., (2013) findings, there was clear evidence to support the expectations that females would be seen as less credible than males when they use complex language in a male dominated field. Specifically, the participants awarded more money to the plaintiff when the witness was a male surgeon rather than a female surgeon in the complex
language testimony condition. Therefore, this provides further evidence that language complexity is used as a heuristic cue in the male dominated condition. However, more research needs to be conducted in conditions that did not alter the cognitive load as it was done in previous research (McKimmie et al., 2013).

It is evident that previous research is supported by the results in both the simple and complex condition particularly when female surgeons and male surgeons are compared. Females were slightly more credible than males in the simple condition and males were more credible in the complex condition. A potential explanation for the differences in this male dominated career field could be because levels of language complexity could be related to stereotypical gender biases. In Schuller (2013), participants found simple language to be considered feminine and complex language to seen as more masculine. In the current study, when stereotypical language complexity “matched” the gender of the expert in the male dominated condition, they were ultimately seen as more credible. This is an important factor for those involved in legal settings to be aware of because this did not always carry over for the female dominated (nursing condition).

Another possible explanation for this cited by Schuller et al. (2005) looks in to the possibility of what Wegener, Kerr, Fleming, and Petty (2001) describe as flexible correction. Flexible correction is when one tries to act unbiased in their evaluation of the female expert and in turn causes an overcorrection in the assessment. This is supported by results with the female nurse in the complex condition and the female surgeon in the simple condition both being rated slightly higher than their male counterparts. However, this was not supported.

It is clear from these findings that there is not a clear-cut analysis of how the expert’s gender, occupation, and level of language complexity interact. It is important to note, however,
that there seems to be some connection between females being seen as more credible when using simple language in a male dominated career and their credibility evaluation. Additional research is needed for female dominated career fields because there are somewhat inconsistent results. The inconsistency of these results, as mentioned previously, may be the fact that the legal setting is generally considered to be predominately male. This may cause some interaction and confusion when a female may “match” there career field (nurse), but is presented in a setting where males may already be seen as more credible (legal setting).

Limitations

It is important in this study, as with any study, to discuss the possible limitations to the external validity of these results. Most studies that involve a jury simulation face the issue that it is not a “real” trial. It is not clear whether or not these results of the current study would hold when actually applied in a real case with actual evidence being presented, and visualization of the people in the courtroom. Also, in this particular study, the participants were only given a transcript of the expert witness testimony. They were not given any other details of the trial such as testimonies of key witnesses or presentation of surgical evidence. In the present study, this was done in order to assess the perception of the expert witness without any other influential factors, however, this is not realistic to the legal setting which may limit the external validity of the study.

Other factors of this study are also potential limitations because of their differences to an actual trial in a courtroom. Jury members typically deliberate in groups rather than as individuals, and the current study lacks the impact of this group deliberation (Schuller et al., 2005). There is some evidence that group deliberation may decrease the effects of some biases (Kaplan & Miller, 1977, as cited in McKimmie et al, 2013). More recently, though, it has been
found that these group settings may increase the gender biases. As a result, there are drawbacks to using individual deliberation and group deliberation, and further research is needed to determine the exact implications of each deliberation type.

Furthermore, in a real trial, the jury will be able to actually watch the testimony of the experts. If the participants were to watch a visual representation of the trial (video), this may present the gender more powerfully through visual cues, rather than the use of wording the demonstrated gender used in the present study. The visual representation of a trial will also present other factors that may act as confounding variables when attempting to focus analysis on the interactions between gender, occupation, and level of language complexity. Chaiken, L.Iberman, and Eagly (1989) found that factors such as attractiveness of the witness have an impact on the persuasiveness of the testimony (as cited in McKimmie et al., 2013). This demonstrates, that while a video representation of a trial may be more realistic, it may make it hard to determine what factors are influencing the perception of the expert’s credibility most intensely.

This study was also limited to the undergraduate psychology students at Bellarmine University. While they varied in their year in school (freshman to senior), it may be difficult to apply these results to a regular adult population. Many of these students do not have the background or knowledge to fully understand the steps of a realistic trial. Jury deliberation is about attempting to be unbiased and relying solely on the evidence presented in the trial. While this is difficult in most legal cases for the jury to do, this may have been particularly difficult if the undergraduate students were confused on the actual process of being a jury member. However, most jury members are typical civilians that do not have significant knowledge in legal topics so it is also possible that this may have not been a significant factor. Schuller et al. (2001)
also mentioned that university students may also have knowledge that typical members of jury may not have. In this particular trial, those university students who have significant knowledge in medical terminology may have not found the complex testimony particularly difficult demonstrating another possible confounding variable.

Finally, there was a lack of male participants that participated in this study. There were only 16 male participants compared the 64 female participants that participated. While there was no significant differences found in the monetary damages awarded by male and female participants, it is possible that with a greater number of male participants there may have been a pronounced difference.

Research has been conducted in order to determine the impact of the common limitations the around found jury-simulation studies. Schuller et al. (2001) cited studies that determined that both video and written trial simulations produced similar results between the two trial mediums (Bomstein, 1999). It was also cited that there is support that using undergraduate participants yields similar results to typical jury members (Rose & Ogloff, 2001).

Future Research

With the various limitations that affect this study and the differentiated results found in this study, there are much potential for future research that should be explored. For example, the results demonstrate that there is a clear change in credibility of an expert witness when factors such as gender, occupation, and language complexity are manipulated. While the current study looked into a medical malpractice study, it may be beneficial to consider if these factors have implications in other professions. Furthermore, future research may want to concentrate on female dominated domains because of the lack of current research when males and females are only presented in a female dominated domain.
Although gender biases of the participants were not explored in this study, the implications of these biases and how they can affect the courtroom is important for attorneys to recognize. A study could use a test such as the Implicit Associations Test (IAT) to determine whether pre-existing biases affected whether or not females and males are seen as more or less credible in the legal setting. Although there were no differences between female and male participants found, there may be underlying differences in the biases that each of these participants have. Attorneys may be able to use results of a study like that incorporates this bias in the event of a jury selection. Having an unbiased jury would lead to a better chance of having an unbiased verdict and ultimately a correct verdict.

As previously stated, it would be useful to explore using a full trial presented through different mediums (i.e. video). The researcher may also want to consider incorporating more realistic trial settings such as a judge, evidence presentation, group jury deliberation, and multiple expert witnesses. All of these factors may play a role in the level of gender bias or the perceptions of the witnesses themselves. Overall, there are a multitude of factors to be considered by future researchers that should be explored in order to truly understand the often controversial legal system.

Although the results of this study are far from straight-forward, the most important implication that the present research has is the fact that gender, language complexity, and career congruency all factor into the perception of expert witnesses. The impact of each of these factors did not only happen in the male-dominated career field, as previous research suggests. There is evidence that a female expert in female-dominated career type is perceived differently when using complex language than a female in a male dominated career. The present study demonstrates that jurors may be inhibited from making thoughtful and rational decisions because
they are being influence by content outside of the trial (such as characteristics of the witness).
This calls for the need of future research to determine the implications of this content and how this content can be eliminated in the future in order to create a just legal system.
References


## Appendix A

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<th>Witness Gender</th>
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Appendix B

Example Complex Language Testimony Transcript for Surgeon Condition

(Note: The bolded text will be changed based on gender condition.)

The following expert witness testimony by a surgeon is part of a medical malpractice trial involving a patient who had a surgery done and died 15 months after the surgery was completed. A sponge was left inside the patient after surgery was completed, and there is a question of whether the death of the patient is at the fault of the hospital staff or if it is because of the patient’s existing intestinal problems.

Plaintiff: Patient's husband
Defendant: Dr. Jones

The Plaintiff is suing for damages of $500,000 suffered as a result of the death of his wife. Please assume the role of Jury member as you read through the testimony below.

Attorney: Good afternoon, [Ma'am OR Sir], could you please introduce yourself to the members of the jury?

Witness: Hello. Yes, my name is [Dr. Elizabeth Smith OR Dr. David Smith]

Attorney: What do you do for a living?

Witness: I am the Chief of General Surgery at the Indiana University Hospital.

Attorney: What experience do you have that allows you to make evaluations about this case?

Witness: I attended University of Chicago Medical School and then continued on to do my surgical residency at Indiana University Hospital where I eventually became the attending General Surgeon. I have over 20 years of experience as a General Surgeon and have performed over 200 colectomy surgeries.

Attorney: Can you explain why you are here today?

Witness: I am here to provide my expert opinion on whether or not this patient died as a result of the sponge left inside the body. I was not personally involved in this specific surgery, but I have performed many of them and can accurately understand whether or not this result was at the fault of that surgery team.

Attorney: Can you describe based on the case what happened to this patient?

Witness: The patient was receiving a colectomy by a surgical team led by Dr. Jones. During this 17 hour surgery there was a personnel shift change including the scrub nurses, doctors assisting on the surgery, etc. During that time the laparotomy sponge count was not relayed correctly between the two shifts of personnel. The surgery was completed without the correct sponge count. This mistake was later realized, and Dr. Jones ordered an x-ray from which the radiologist reported two ribbon like high density structures, consistent with the laparotomy sponges, found in the upper left quadrant of the patient’s abdomen. The misplaced sponge instigated a gastrointestinal perforation that lead to bacterial contamination of the abdominal cavity. The patient died later after two unsuccessful attempts to remove the sponge.

Attorney: Do you believe that this surgical team was at fault for this patient’s death?

Witness: The laparotomy sponge count was not properly communicated based on surgical protocol between shifts, which led to the perforation and ultimately abdominal contamination. This sequence of events could have been avoided if the laparotomy sponge had been removed properly during the initial surgery. Based on this information, I do believe that Dr. Jones and his surgery team are at fault for this patient’s death.

Attorney: Thank you, [Ma'am OR Sir]. I have no further questions.
Example Complex Language Testimony Transcript for Nurse Condition

(Note: The bolded text will be changed based on gender condition.)

The following expert witness testimony by a nurse is part of a medical malpractice trial involving a patient who had a surgery done and died 15 months after the surgery was completed. A sponge was left inside the patient after surgery was completed, and there is a question of whether the death of the patient is at the fault of the hospital staff or if it is because of the patient’s existing intestinal problems.

Plaintiff: Patient's husband
Defendant: Dr. Jones

The Plaintiff is suing for damages of $500,000 suffered as a result of the death of his wife. Please assume the role of Jury member as you read through the testimony below.

Attorney: Good afternoon, [Ma'am OR Sir], could you please introduce yourself to the members of the jury?

Witness: Hello. Yes, my name is [Elizabeth Smith OR David Smith]

Attorney: What do you do for a living?

Witness: I am a Registered Nurse at Indiana University Hospital.

Attorney: What experience do you have that allows you to make evaluations about this case?

Witness: I attended the University of Chicago’s Nursing Program and then continued my training at Indiana University Hospital where I eventually became the Head Nurse of General Surgery. I have over 20 years of experience as Head Nurse and have assisted with over 200 colectomy surgeries.

Attorney: Can you explain why you are here today?

Witness: I am here to provide my expert opinion on whether or not this patient died as a result of the sponge left inside the body. I was not personally involved in this specific surgery, but I have assisted with many of them and can accurately understand whether or not this result was at the fault of that surgery team.

Attorney: Can you describe based on the case what happened to this patient?

Witness: The patient was receiving a colectomy by a surgical team led by Dr. Jones. During this 17 hour surgery there was a personnel shift change including the scrub nurses, doctors assisting on the surgery, etc. During that time the laparotomy sponge count was not relayed correctly between the two shifts of personnel. The surgery was completed without the correct sponge count. This mistake was later realized, and Dr. Jones ordered an x-ray from which the radiologist reported two ribbon like high density structures, consistent with the laparotomy sponges, found in the upper left quadrant of the patient’s abdomen. The misplaced sponge instigated a gastrointestinal perforation that lead to bacterial contamination of the abdominal cavity. The patient died later after two unsuccessful attempts to remove the sponge.

Attorney: Do you believe that this surgical team was at fault for this patient’s death?

Witness: The laparotomy sponge count was not properly communicated based on surgical protocol between shifts, which led to the perforation and ultimately abdominal contamination. This sequence of events could have been avoided if the laparotomy sponge had been removed properly during the initial surgery. Based on this information, I do believe that Dr. Jones and his surgery team are at fault for this patient’s death.

Attorney: Thank you, [Ma’am OR Sir]. I have no further questions.
Example Simple Language Testimony Transcript for Surgeon Condition

(Note: The bolded text will be changed based on gender condition.)

The following expert witness testimony by a surgeon is part of a medical malpractice trial involving a patient who had a surgery done and died 15 months after the surgery was completed. A sponge was left inside the patient after surgery was completed, and there is a question of whether the death of the patient is at the fault of the hospital staff or if it is because of the patient’s existing intestinal problems.

Plaintiff: Patient's husband
Defendant: Dr. Jones

The Plaintiff is suing for damages of $500,000 suffered as a result of the death of his wife. Please assume the role of Jury member as you read through the testimony below.

Attorney: Good afternoon, [Ma'am OR Sir], could you please introduce yourself to the members of the jury?

Witness: Hello. Yes, my name is [Dr. Elizabeth Smith OR Dr. David Smith]

Attorney: What do you do for a living?

Witness: I am the Chief of General Surgery at the Indiana University Hospital.

Attorney: What experience do you have that allows you to make evaluations about this case?

Witness: I attended University of Chicago Medical School and then continued on to do my surgical residency at Indiana University Hospital where I eventually became the attending General Surgeon. I have over 20 years of experience as a General Surgeon and have performed over 200 surgeries removing the large intestine.

Attorney: Can you explain why you are here today?

Witness: I am here to give my opinion on whether or not this patient died because of a surgery sponge left inside the body. I did not actually perform this surgery, but I have done many before and I can look at this surgery and give my opinion of who is at fault.

Attorney: Can you describe based on the case what happened to this patient?

Witness: The patient was having a surgery to remove their large intestine. The doctor performing the surgery was Dr. Jones. The surgery was kind of long and in the middle of the surgery new nurses and assistant doctors were brought in to give the other doctors a break. When the doctors and nurses switched out, they did not tell the new medical staff how many surgical sponges they had been using. They finished the surgery without counting the sponges correctly. Dr. Jones found out this mistake and had an x-ray done on the patient. The doctor operating the x-ray machine found two objects similar to sponges that in the belly area. The left over sponge caused an injury to the insides of the patient that caused more issues with contamination of the belly area. They tried a couple of times to remove the sponge but could not find it. The patient died a few months later.

Attorney: Do you believe that this surgical team was at fault for this patient's death?

Witness: The sponges weren’t counted right and that is something that Doctors are usually supposed to do. The sponge left over caused an injury to the belly area that caused contamination. All of this could have been avoided if the sponge was correctly removed during that first surgery. Based on this information, Dr. Jones’ team is at fault.

Attorney: Thank you, [Ma'am OR Sir]. I have no further questions.
Example Simple Language Testimony Transcript for Nurse Condition

(Note: The bolded text will be changed based on gender condition.)

The following expert witness testimony by a nurse is part of a medical malpractice trial involving a patient who had a surgery done and died 15 months after the surgery was completed. A sponge was left inside the patient after surgery was completed, and there is a question of whether the death of the patient is at the fault of the hospital staff or if it is because of the patient’s existing intestinal problems.

Plaintiff: Patient's husband
Defendant: Dr. Jones

The Plaintiff is suing for damages of $500,000 suffered as a result of the death of his wife. Please assume the role of Jury member as you read through the testimony below.

Attorney: Good afternoon, [Ma’am OR Sir], could you please introduce yourself to the members of the jury?

Witness: Hello. Yes, my name is [Elizabeth Smith OR David Smith]

Attorney: What do you do for a living?

Witness: I am a Registered Nurse at Indiana University Hospital.

Attorney: What experience do you have that allows you to make evaluations about this case?

Witness: I attended the University of Chicago’s Nursing Program and then continued my training at Indiana University Hospital where I eventually became the Head Nurse of General Surgery. I have over 20 years of experience as Head Nurse and have assisted with over 200 surgeries removing the large intestine.

Attorney: Can you explain why you are here today?

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Attorney: Can you describe based on the case what happened to this patient?

Witness: The patient was having a surgery to remove their large intestine. The doctor performing the surgery was Dr. Jones. The surgery was kind of long and in the middle of the surgery new nurses and assistant doctors were brought in to give the other doctors a break. When the doctors and nurses switched out, they did not tell the new medical staff how many surgical sponges they had been using. They finished the surgery without counting the sponges correctly. Dr. Jones found out this mistake and had an x-ray done on the patient. The doctor operating the x-ray machine found two objects similar to sponges that in the belly area. The left over sponge caused an injury to the insides of the patient that caused more issues with contamination of the belly area. They tried a couple of times to remove the sponge but could not find it. The patient died a few months later.

Attorney: Do you believe that this surgical team was at fault for this patient’s death?

Witness: The sponges weren’t counted right and that is something that Doctors are usually supposed to do. The sponge left over caused an injury to the belly area that caused contamination. All of this could have been avoided if the sponge was correctly removed during that first surgery. Based on this information, Dr. Jones’ team is at fault.

Attorney: Thank you, [Ma’am OR Sir]. I have no further questions.
Appendix C
Participant Questionnaire

1. *How much money should be awarded to the plaintiff?*

Based on the testimony of the expert witness, if the defendant (Dr. Jones) was found to be guilty, how much money in damages, if any, should be awarded to the plaintiff? (Remember, the plaintiff asked for $500,000 in damages.)

$_________________

2. *How credible was the witness?*

On a scale of 1 to 5, rate the extent to which you agree that the expert witness was credible. 1 meaning you didn’t believe them at all (“I disagree that they were credible.”) and 5 meaning you believed every word they said (“I agree that they were credible”):

1 2 3 4 5

Disagree Somewhat No opinion Somewhat Agree
disagree agree

3. With which gender do you most closely identify? (Please circle one.)

Male Female Other

4. What academic classification fits you best?

Freshman Sophomore Junior Senior

5. What is your age? _______________
Table 1

*Descriptive Statistics for Mean Monetary Award*

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Table 2

2 (witness sex) x 2 (witness profession) factorial ANOVA Results for Simple Language Type

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Note. There was significant interaction was found between witness sex and witness profession.
Table 3

2 (witness sex) x 2 (witness profession) factorial ANOVA Results for Complex Language Type

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Figure 1. Summary of the three-way interaction of witness sex, language complexity, and witness occupation