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Differences in Expert Witness Knowledge: Do Mock Jurors Notice and Does it Matter?

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### Abstract

The knowledge of experts presumably affects their credibility and the degree to which the trier of fact will agree with them. However, specific effects of demonstrated knowledge are largely unknown. This experiment manipulated a forensic expert's level of knowledge in a mock trial paradigm. We tested the relation between low versus high expert knowledge on mock juror perceptions of expert credibility, on agreement with the expert, and on sentencing. We also tested expert gender as a potential moderator. Knowledge effects were statistically significant; however, these differences carried little practical utility in predicting mock jurors' ultimate decisions. Contrary to hypotheses that high knowledge would yield increased credibility and agreement, knowledge manipulations only influenced perceived expert likeability. The low-knowledge expert was perceived as more likeable than his or her high knowledge counterpart, a paradoxical finding. No significant differences across expert gender were found. Implications for conceptualizing expert witness knowledge, credibility, and their potential effects on juror decision-making are discussed.

*Keywords:* expert witness, testimony, credibility, knowledge, likeability, expertise

Differences in expert witness knowledge: Do mock jurors notice and does it matter?

Knowledge and competence are characteristics that serve a key role in human interactions. Interpersonal effectiveness and positive impression management are affected by perceptions of intellectual ability, knowledge, and skill. Knowledge may be communicated through self-proclamation, assertiveness, substantive content, or experience.<sup>1-4</sup> An expert's acquired knowledge and competence may serve an important role in a courtroom, where lives and livelihoods may hang in the balance. After all, knowledge relates initially to whether a particular professional will be retained to testify.<sup>5</sup> The rules of evidence explicitly identify knowledge, experience, training, education, or skill as the practical foundations upon which the witness is deemed an "expert" and permitted to testify by the courts.<sup>6</sup>

Unlike other credibility influences such as confidence or trustworthiness,<sup>7</sup> expert knowledge is mandated by the court as part of the rules of evidence governing acceptance of a witness as an expert. Thus, an expert witness's knowledge is doubly subjected to scrutiny by the court and the trier of fact. As suggested by previous research, the court's sanction of a witness as "expert" likely serves as a heuristic to triers of fact in their evaluations of experts' credibility in many cases.<sup>8-11</sup> Conversely, a witness's expert status has the potential to backfire and create distrust in the form of skepticism of a hired gun or feelings of comparative inferiority on the part of the trier of fact.<sup>12-13</sup> The effects of expert qualifications and displays of knowledge during testimony are largely unknown.

### **Expert Witness Credibility in the Courtroom**

An expert witness's credibility has the potential to influence jurors' consideration of their testimony. Both expert knowledge and credibility have been shown to influence disputing parties and third-party decision-makers. Expert witness credibility has been instrumental in

verdicts and sentencing recommendations in both criminal trials and civil proceedings with mock, potential, and real jurors.<sup>14-16</sup>

**Constructing Expert Witness Credibility.** The Witness Credibility Model<sup>7</sup> is a framework that conceptualizes witness credibility as a composite of four factors: confidence, likeability, knowledge, and trustworthiness. The four-factor Witness Credibility Model is effectively captured by the Witness Credibility Scale (WCS).<sup>7</sup> A number of studies have used the WCS and validated its usefulness in evaluating perceptions of expert witnesses<sup>7,10,17-23</sup> Across these investigations, the WCS has held its conceptual strength and demonstrated adequate internal consistency and reliability.

### **Knowledge in the Courtroom Setting**

**Expert Qualification.** Due to the potential influence of expert witness testimony, “experts” must be qualified as such by the courts. In a survey of judges, jurors, lawyers, and experts in civil trials, Champagne, Shuman, and Whitaker<sup>24</sup> found knowledge and expertise to be the most desired characteristics in an expert witness. Moreover, perceptions of knowledge were closely linked to impressive educational credentials and reputation as a leading expert in the field.<sup>24</sup> Legal requirements generally define expertise as acquired through relevant experience, training, knowledge, education, or skill.<sup>6</sup> Expert knowledge may be demonstrated through degrees obtained, positions held, particular populations evaluated or treated, professional certifications or licensure, board certification, membership in professional organizations, professional publications, prior court experience as an expert, and honors/awards.<sup>25</sup> Thus, the qualification process becomes almost synonymous with credentialing.<sup>4</sup>

Commons, Gutheil, and Hilliard<sup>26</sup> suggest that the way expert witnesses are presented to jurors via expert qualifications could affect how jurors view the expert, and by extension,

perhaps how the jurors evaluate the testimony. Hurwitz, Miron, and Johnson<sup>27</sup> conducted a language and content analysis of actual trial transcripts. They concluded jurors perceived expert witnesses as more credible if the experts presented content related to their credentials or experience (i.e., expertise) and objectivity (i.e., trustworthiness) during expert qualification.

**Knowledge on the Stand.** In the credentialing procedures for an expert witness, the court treats each of the five characteristics outlined in the Federal Rules of Evidence – experience, education, training, skill, and knowledge – as independently representative of expertise.<sup>6</sup> However, research has shown that experience does not necessarily equate with improved accuracy or knowledge.<sup>28-30</sup> Thus, to be viewed as “expert” by the trier of fact (and not just by the rules of evidence), expert witnesses should demonstrate mastery of their craft – conveying their knowledge through testimony.<sup>24</sup> As Champagne and colleagues<sup>24</sup> reported, jurors especially appreciate experts who can make testimony understandable to the lay person and communicate technical information simply and clearly by avoiding or explaining any jargon. Scholars have described how triers-of-fact may benefit from knowledge woven into a comprehensive story of the evidence.<sup>31-32</sup> Testimony should accordingly be consistent with commonsense understandings of physical evidence and the testimony of other witnesses.<sup>32</sup> Research has also explored jurors’ sensitivity to differences in the quality and presentation style of research cited by expert witnesses, as well as the presence or absence of an expert.<sup>33</sup> However, to our knowledge, no study has experimentally isolated and manipulated level or degree of expert knowledge on the stand to test its influence on decision-making.

Two of the four Witness Credibility Scale factors, likeability<sup>10,17</sup> and confidence,<sup>18,20,23</sup> have been experimentally manipulated and studied in relation to the Witness Credibility Model (see Table 1). The main effect of knowledge on expert credibility has yet to receive similar

empirical attention. Neal et al.<sup>10</sup> studied expert witness knowledge, but only as it interacted with likeability. That is, the researchers did not isolate knowledge in that study; rather, they varied knowledge and likeability at the same time and studied their interactions rather than their main effects.

[Insert Table 1 about here]

Neal et al.<sup>10</sup> found that likeability and knowledge did interact in the expert witness role, with higher levels of likeability and knowledge being associated with higher credibility. However, they were not able to discern to what degree expert knowledge on its own affected perceptions of credibility.

### **Gender as a Moderator of Perceived Knowledge**

Prior research has found inconsistencies in whether expert gender moderates perceptions of expert witness credibility. For example, studies have found differential effects based on the experts' gender, either in favor of men<sup>10, 34</sup> or in favor of women.<sup>22,35</sup> Other studies have uncovered complex interactions in the ways in which male and female experts are perceived. For example, Neal et al.<sup>10</sup> found that experts who met threshold expectations of likeability and knowledge were not perceived differently based on their gender; however, when they were not likeable or particularly knowledgeable, male experts were perceived significantly more positively and were more persuasive than female experts. We included expert gender as an independent variable in the present study to explore further the relation between expert gender and credibility.

### **The Current Study**

Perceptions of expert witness credibility may vary as a function of knowledge presentation. For example, some experts may not deem it necessary to discuss their specialized

knowledge once qualified. Others may present displays of their knowledge judiciously and throughout their testimony in an effort to emphasize their expertise. Studying how various demonstrations of expert knowledge influences juror decision-making is a step toward understanding the effectiveness of expert testimony.

The current study focused specifically on the main effect of expert witness knowledge. We sought to examine juror perceptions of expert credibility and varying degrees of expert knowledge. We manipulated expert knowledge as the independent variable (high versus low knowledge) while holding other WCS constructs constant. We expected to find a difference between high and low knowledge manipulations of the expert on the following dependent variables: (a) the three other components of credibility; trustworthiness, likeability, and confidence, and (b) sentencing recommendations, as well as agreement with the expert's opinion on likelihood of future violence. We specifically hypothesized that the very knowledgeable expert (compared to the less knowledgeable counterpart) would be rated significantly higher on credibility outcomes and yield more mock juror agreement with the expert regarding likelihood of defendant future violence and sentencing recommendations. Drawing on the inconsistent findings regarding the effects of expert witness gender on perceptions of credibility in prior research, we explored gender effects in the current study. That is, given the potential interaction of expert gender and knowledge on credibility,<sup>10</sup> we included expert gender as a second independent variable.

## **Method**

### **Study Design and Operational Definitions**

This study was a 2 (high vs. low knowledge) x 2 (male vs. female expert witness) between-subjects factorial design. Thus, the independent variables were knowledge (high vs.

low) and gender (male vs. female). We defined expert knowledge as, “the degree to which an expert is perceived to be well-informed, competent, or perceptive and to possess or exhibit intelligence, insight, understanding, or expertise.”<sup>10</sup> A literature review identified components associated with high knowledge, as displayed in Table 2. This conceptualization has been supported in previous work in which the interactions between knowledge and likeability were examined.<sup>10</sup>

[Insert Table 2 about here]

Our operational definition of knowledge included substantive content and clarity of testimony, credentials, relevant experience, self-proclaimed expertise, assertiveness, and familiarity with the case. The specific manipulated conceptions of high and low knowledge, again drawing on Neal et al.<sup>10</sup> are detailed in Table 1.

### **Participants**

Undergraduate psychology students at a large public university participated for course credit ( $N = 155$ ). The U.S. Supreme Court decided in *Witherspoon vs. Illinois* that jurors who sit on capital murder trials must be “death qualified,” that is, willing and able to consider capital punishment as a sentencing option.<sup>36</sup> Because our stimulus material was based on the sentencing phase of a capital murder trial, those mock jurors who indicated absolute opposition to the death penalty were excluded from our analyses ( $n = 13$ ), and six mock jurors were removed due to missing data, reducing the total sample size from 155 to 136. Mock jurors ineligible due to the *Witherspoon* criteria were distributed equally across the study conditions and reflected the overall demographic makeup of eligible participants. The gender composition of the sample was 81% female and ranged in age from 18 to 43 years ( $M = 18.76$ ,  $SD = 2.54$ ). The sample was 79% Caucasian, 13% African-American, and 8% from other racial or ethnic backgrounds.

## **Stimuli**

We developed four separate videos to match each of the experimental conditions (i.e., male expert witness – high knowledge; male expert witness – low knowledge; female expert witness – high knowledge; female expert witness – low knowledge), which were approximately five minutes each. Real expert witnesses testified in this mock scenario (rather than actors). When the video opened, the judge described to the mock jurors that the hearing represented the capital sentencing phase for Mr. Jones, a defendant who was already found guilty of first degree murder. The judge explained that the only task before the jurors was to decide whether Mr. Jones should be sentenced to death or to life in prison. The judge explained the standard for burden of proof before the expert testified. In each video, the expert witness testified under both direct and cross-examination about his or her evaluation of Mr. Jones' likelihood of future violence. In all conditions, the expert testified to the substantial likelihood of the defendant re-offending. The video script was adapted from a jury sentencing proceeding used in previous studies.<sup>9-10,17,22</sup> The script was modified to reflect the knowledge manipulations described above and included either a male or female expert matched for age, race, and clothing.

## **Procedure and Materials**

Prior to beginning the study, Institutional Review Board approval was obtained for research with human subjects. Information about the study procedures and details regarding informed consent were provided to participants and then they viewed a randomly assigned video condition. After watching the video, all participants individually completed the following questionnaires.

**Witness Credibility Scale.** The Witness Credibility Scale (WCS) was used to assess the credibility of the expert.<sup>7</sup> The scale contains 20 bi-polar adjectives on a 1 to 10-point Likert scale

(e.g., *unkind* to *kind*; *dishonest* to *honest*; *shaken* to *poised*; etc.). Higher scores indicate higher credibility ratings. The WCS generates an overall credibility rating ( $\alpha = .96$  in this study) with higher scores indicating higher credibility. The WCS also yields a multidimensional measure of expert credibility defined by four subordinate domains: trustworthiness ( $\alpha = .95$ ), confidence ( $\alpha = .92$ ), likeability ( $\alpha = .90$ ), and knowledge ( $\alpha = .93$ ). Given the present study's interest in how expert knowledge may relate to operational, potentially changeable facets of credibility (e.g., likeability, confidence), expert credibility was assessed at the facet level (i.e., trustworthiness, confidence, and likeability) instead of at the global level (overall credibility) in this study.

**Future Violence Likelihood Rating.** Participants were asked to rate the likelihood that the defendant would commit future acts of violence from 1-100%. These ratings reflected how “believable” the participant found the expert because the expert opined the defendant was likely to commit future violent acts. Thus, this outcome reflects mock jurors' evaluations of the defendant's future violence likelihood and mock jurors' agreement with the expert.

**Sentencing Rating.** On Likert-type scales from “*extremely likely*” to “*extremely unlikely*” participants rated their likelihood of sentencing the defendant to each of the two available sentencing options: life in prison without parole (LWOP) or the death penalty. To create a single continuous sentencing variable, these two Likert-type ratings were converted to standardized *Z* scores. Then, the death penalty *Z*-scores were multiplied by -1 and the LWOP *Z*-scores were multiplied by +1. Finally, the two sets of *Z*-scores were summed together to create a single continuous sentencing variable that conveys both direction and strength. That is, the more negative the score, the more likely the participant would have assigned the death penalty (representing agreement with the expert). The more positive the score, the more likely the participant would have assigned LWOP (disagreement with the expert).

**Demographics.** A demographic questionnaire elicited participants' age, gender, and degree of death penalty support.

**Manipulation Checks.** The Knowledge subscale of the Witness Credibility Scale was used as a manipulation check. This subscale is comprised of five items, including queries about the expert being logical, informed, wise, educated, and scientific (again,  $\alpha = .93$  in this sample).<sup>7</sup> In addition, we included one question about the attractiveness of the expert witness.

Target attractiveness can influence person perception such that greater attraction is positively associated with more favorable judgments.<sup>37-38</sup> Given that our primary dependent variables in this study are credibility assessments, prior to data collection we matched the relative attractiveness of our experts used as stimuli in this study. Results suggested that attractiveness would not covary with our independent variables (e.g., gender) in the study. We included the attractiveness question in the main study as a manipulation check.

## Results

### Manipulation Check

**Knowledge.** The “knowledge” manipulation check indicated our manipulation of knowledge was successful for each expert; that is, the high knowledge expert was perceived as more knowledgeable than the low knowledge expert,  $F(1, 135) = 6.31, p = .013$  (high knowledge  $M = 39.83, SD = 8.53$  vs. low knowledge  $M = 35.97, SD = 9.33$ ). Because knowledge was rated on a 10-point scale with five items per construct, the possible range in ratings was from 5 to 50. Thus, both experts were rated as relatively knowledgeable. As expected, we found one expert was significantly less knowledgeable than the other, with a medium effect ( $\eta^2 = .042$ ).

**Attractiveness.** In order to ensure the potential covariate of attractiveness was independent of the manipulations in this study,<sup>39</sup> we initially matched the female and male expert

on attractiveness prior to manipulations being tested. We then tested this manipulation check in our study sample using the following question about each expert: How physically attractive did you find this expert witness on a 10-point likert scale (“not at all attractive” to “extremely attractive”). However, a significant difference in attractiveness emerged,  $F(1, 135) = 4.65, p = 0.033, \eta^2 = .034$ . The female expert was rated as significantly more attractive ( $M = 5.01, SD = 1.78$ ) than the male counterpart ( $M = 4.31, SD = 2.01$ ) (a small to medium effect). Thus, attractiveness was an unexpected confound that may diminish some portion of the effect of the gender and/or knowledge (the portion associated with attractiveness) on outcomes.

There is debate in the literature on how to address confounds in MANCOVA analysis.<sup>40</sup> One key determinant on whether ANCOVA can be implemented when a covariate and independent variables are confounded (as in our study), is whether the covariate arose by chance, or whether it is more likely that a meaningful difference between groups on the covariate is systematically delineated by the independent variable.<sup>41-45</sup> MANCOVA is generally appropriate for random assignment designs if the covariate arose by chance because the analysis would be removing only “noise variance from group, not anything substantive about group.”<sup>40,43</sup> In our study, attractiveness is likely to have differed between the male and female expert due to chance. We have no reason to believe that the gender of the expert is the factor influencing the difference in attractiveness, or that this difference would generalize to all female experts. While it can be difficult to substantiate causal relationships between a covariate and an independent variable,<sup>46</sup> it is widely accepted that attractiveness is a dimension independent of gender.<sup>47-48</sup> Men and women vary in attractiveness and these variables should not be conflated. Thus, our MANCOVA that included attractiveness as a covariate was used in the primary analysis to allow the variance introduced by this unexpected covariate to be reduced.

## Main Analyses

For our primary analyses, we conducted a Multivariate Analysis of Covariance (MANCOVA) with our two independent variables (knowledge condition: high vs. low and expert gender: male vs. female) on our dependent variables. We included five dependent variables: three credibility dimensions to examine witness credibility at the facet level (trustworthiness, confidence, and likeability), a continuous sentencing variable, and ratings of the defendant's future violence likelihood (i.e., agreement with the expert's opinion). We included expert witness attractiveness as a covariate. Because participant age, gender, or race did not moderate any of the effects in the initial model, we did not include them in our final models.

Tests of multivariate normality, multicollinearity, and homogeneity of variance-covariance matrices revealed no significant issues.<sup>39,49</sup> Due to significant violations of Levene's test of equality of variance (for both sentencing and likeability), we set a conservative alpha level of .025 for these outcomes and used *Pillai's Trace* to examine test statistics.<sup>39</sup> Finally, the sample size requirement for MANCOVA procedures (at least 20 participants per cell<sup>48</sup>) was met, with the sample distributed relatively evenly across conditions. Adjusted means and descriptive information by condition are provided in Table 3.

[Insert Table 3 about here.]

The MANCOVA results indicated significant multivariate main effects emerged for the knowledge conditions, *Pillai's Trace* = 0.146,  $F(6, 127) = 4.34$ ,  $p < .001$ ,  $\eta_p^2 = 0.146$ . There was no significant main effect of expert gender, *Pillai's Trace* = 0.79,  $F(6, 127) = 2.19$ ,  $p = .059$ ,  $\eta_p^2 = 0.79$ , indicating that expert witness gender was not systematically related to any of our dependent variables. The interaction between the expert's knowledge and gender was not

systematically related to any of our dependent variables, *Pillai's Trace* = 0.02,  $F(6, 125) = 0.572$ ,  $p = .720$ ,  $\eta_p^2 = 0.02$ .

**Follow-Up Analysis to the MANCOVA.** We initially conducted a discriminant function analysis (DFA) to identify how the dependent variables discriminated the high versus low knowledge groups. Essentially, DFA flips the approach to understanding the relationship between knowledge (the independent variable, or IV) and the dependent variables (DVs) used in the MANCOVA. Should a “dependent variable” explain a portion of the separation between high and low knowledge groups (i.e., if the DV can help explain the differences in the IV), it is likely that the significant main effect of the MANCOVA is attributable to the relationship between the IV conditions (knowledge in this case) and the particular dependent variable.<sup>50</sup> In this case, our discriminant analysis revealed one discriminant function that explained 100% of the variance, canonical  $R^2 = .15$  (small effect size).

The discriminant function showed that the differences in knowledge could be explained in terms of one underlying dimension, *Wilks's Lambda* = 0.85,  $X^2(5) = 21.96$ ,  $p < .001$ . The correlations between outcomes and the discriminant function<sup>50-52</sup> revealed that likeability loaded highly onto the discriminant function ( $r = .53$ ), followed by sentencing recommendation ( $r = .26$ ), followed by confidence ( $r = -.20$ ), then chance of committing future acts of violence (agreement with expert) ( $r = -.17$ ), then finally by the low loading of trustworthiness ( $r = -.04$ ). Indeed, the DFA results indicate that knowledge is being discriminated between low and high knowledge (based on the unstandardized canonical discriminant functions evaluated at group means). While likeability tended to contribute the most to group separation of high versus low knowledge, the difference between knowledge groups may well be related to sentencing recommendation and to a lesser extent, agreement with the expert and perceptions of expert

witness confidence. However, expert trustworthiness does not appear to systematically relate to group separation of knowledge.

To further understand these data, we conducted planned comparisons using univariate analyses with a Bonferroni correction of  $p = .01$ . In concert with the DFA, likeability was the only WCM facet to be systematically and significantly related to knowledge condition,  $F(1,130) = 5.57, p = .020, \eta_p^2 = .041$ . Of surprise to us, the highly knowledgeable expert was rated as significantly *less* likeable ( $M = 35.62, SD = 8.46$ ) than the less knowledgeable expert ( $M = 39.58, SD = 8.26$ ). No other significant effects of knowledge on the remaining WCM facets (i.e., confidence or trustworthiness), sentencing recommendations, future violence predictions (agreement with expert), or gender interactions emerged.

**Supplemental Analysis.** We conducted these supplemental analyses to examine the variable of attractiveness in more depth. Even though the influence of attractiveness was deemed a nonsystematic covariate in the present study, it is still possible that by entering the covariate into the model, “the covariate will in effect get credit for any relationship of their shared variance [with the independent variable] that is also shared with the dependent variable.”<sup>40</sup> The result may be a diminished estimate of the relationship between the gender and the dependent variables. This is of particular concern in the present study because the multivariate main effect of expert gender approaches statistical significance at  $p = .059$  when attractiveness is included in the model.

Attractiveness did in fact exert a significant multivariate main effect in the overall model, *Pillai's Trace* = 0.087,  $F(6, 127) = 2.44, p = .038, \eta_p^2 = 0.087$ . When attractiveness was removed from the analysis, a significant multivariate main effect for expert witness gender emerged, *Pillai's Trace* = 0.98,  $F(5, 128) = 2.77, p = .021, \eta_p^2 = 0.98$ , and the significant main effect for

knowledge condition remained, *Pillai's Trace* = .15,  $F(5, 128) = 4.52$ ,  $p < .001$ ,  $\eta_p^2 = .15$ . The interaction between the expert's knowledge and gender was not systematically related to any of our dependent variables when attractiveness was removed from the model, *Pillai's Trace* = 0.02,  $F(5, 128) = .607$ ,  $p = .694$ ,  $\eta_p^2 = 0.02$ .

These results indicate that a portion of the effect of gender on the dependent variables may in fact have been removed in the main analyses (the portion of the effect that covaried with attractiveness).<sup>39</sup> However, as noted above, this effect is more likely to be explained by gender's covaried relationship with attractiveness in our particular stimuli. Thus, the implication is that exploring the potential effect of gender (as possibly mediated by attractiveness) was not theoretically supported.

### Discussion

This study experimentally manipulated level of knowledge in an expert forensic mental health professional's testimony on the stand in a mock trial paradigm. We sought to test the relation between lower versus higher degrees of demonstrated expert knowledge and juror perceptions of expert credibility, agreement with the expert, and sentencing decisions. We also tested for potential moderating effects of expert gender. Our knowledge manipulations were successful from an empirical standpoint – operationally defining high versus low demonstrated expert knowledge.

We hypothesized that high knowledge would yield increased credibility as well as increased agreement with the expert. While knowledge did exert an effect on one facet of credibility (i.e., likeability), it did so in a manner counter to our predictions. Knowledge influenced perceptions of expert likeability such that the lower knowledge expert was paradoxically perceived as more likeable than his or her higher knowledge counterpart. The

second piece of our hypotheses that predicted a positive relationship between knowledge and agreement with the expert was not evidenced in this study. In other words, it appears that our defined levels of very knowledgeable versus less knowledgeable did not influence mock jurors' ultimate opinions of the defendant's future violence risk (agreement with the expert), or sentencing. Thus, knowledge manipulations influenced perceptions of some facets of credibility, yet carried little predictive utility in understanding mock jurors' ultimate decisions. Our results do not necessarily imply that an expert's knowledge has little effect on perceptions of credibility and subsequent juror decisions. Instead, let us examine alternative explanations for our findings.

It is plausible that this study evidenced a ceiling effect – likely to exist in actual testimony – where the peripheral cue of being an “expert” extended a blanket influence of knowledge. Recall that differences between the low and high knowledge expert were statistically significant and yielded a medium effect. However, both experts were perceived as relatively knowledgeable. Moreover, knowledge levels did not contribute to credibility outcomes except for in regards to expert likeability. Mock jurors also did not differentiate between very knowledgeable and less knowledgeable experts for agreement ratings and sentencing. These findings collectively suggest that mock jurors may have relied on the courts' discretion in allowing only qualified people with specialized knowledge to take the role of expert.<sup>6</sup> That is, jurors may make an assumption that the expert is knowledgeable without critically evaluating the foundation of his or her knowledge. These results align with previous research that suggests the primary persuasive influence in expert testimony is the witness's status as an “expert.” Research has shown that jurors may not sufficiently evaluate the foundational research of expert opinions and that they may defer to the clinical opinion of the expert over an opinion rooted in actuarial evidence.<sup>9, 53-55</sup> The current study adds to the literature. Even when

knowledge is varied (high versus low), there does not appear to be a critical evaluation of the witness perhaps due to the witness's qualification as an expert. Thus, differential decision-making that could otherwise result from differences in expert knowledge may also not be elicited.

However, low knowledge did increase the expert's likeability, which suggests the presence of additional social-cognitive processes at work. The negative relation that emerged between expert knowledge condition and perceived likeability implies that aspects of higher versus lower knowledge demonstrations may influence expert likeability. While we are cautious to speculate about such underlying processes not directly examined in this study, it is possible, for example, learning about an expert's qualifications may create psychological distance between the expert and the mock juror. Social psychology research supports the competence-liking paradox; that is, the person with the most knowledge is often *not* the most liked.<sup>56-57</sup> In court, and in life, however, it would seem beneficial to like the more knowledgeable person as they may increase our chances of being correct and competent. Nevertheless, likeability for a knowledge expert comes at a cost to the juror because he or she may pale in comparison to the all-knowing expert. Perceptions of similarity and mutual liking decrease when a superior person is a factor.<sup>56</sup> In fact, the "pratfall effect" would suggest competence with some degree of fallibility is perhaps the most liked combination<sup>58</sup> and suggests a juror's gender and self-esteem may play into this phenomena.<sup>59-60</sup> Another possibility is that the highly knowledgeable experts were disliked because of character cues elicited from the high knowledge content (e.g., perceived narcissism). Thus, it is plausible that differences in knowledge (e.g., perceived narcissism in very knowledgeable experts) are more or less interpreted as differences in likeability (e.g., less likeable). In other words, experts may benefit from Baldoni's recommendation to "Never act like the smartest guy in the room."<sup>61</sup>

When it comes to credibility, mock jurors may defer to the court and view very knowledgeable and lesser knowledgeable experts as “knowledgeable” due to their expert status. Thus, while it may seem that differences in knowledge have little influence on credibility determinations, differences in demonstrations of knowledge (e.g., high versus low knowledge presentations on the stand) may elicit psychological and peripheral cues to an expert’s likeability. The possible evaluative, social, and cognitive influences that could be responsible for the negative knowledge-likeability link found in this and other research<sup>10</sup> deserves future empirical attention, particularly given the potential influence of expert likeability on mock juror decision-making.<sup>17</sup>

Overall, the degree to which jurors are sensitive to differences in an expert’s knowledge is not clear. Perhaps a continuum of perceived knowledge exists and exerts a meaningful influence on credibility. More likely, however, jurors reach a knowledge threshold for the “expert” once deemed such by the courts, consistent with heuristic models of jurors’ evidence interpretation.<sup>62-63</sup> Thus, perhaps the relative quality of the witness’s expertise lacks a significant, observable influence on decision-making. This finding dovetails with prior witness credibility research. Despite manipulations influencing overall credibility, the components of credibility often lack direct or explicitly observable influence on individual jurors’ explicit decision-making.<sup>10,17</sup>

The finding that differences in knowledge may affect the expert’s perceived credibility but that expert differences did not translate into differences in jurors’ ultimate decisions is potentially good news. The decision of the triers of fact is supposed to be based on the content of testimony, the substance of a case, and the strength of evidence.<sup>64</sup> These findings add to the body of research showing that other variables affect the decision maker, but only incrementally. That is, a variable like expert witness knowledge is but one of many pieces of information decision-makers must integrate in formulating a decision. Experts and trial consultants may still

benefit from recognizing that in “close” cases, or cases in which opposing experts testify, expert knowledge may exert a substantive influence. In such instances, it might be beneficial to keep in mind that displays of knowledge may not always work in your favor, at least to the extent that they diminish one’s likeability.<sup>17</sup>

### **Effects of Expert Witness Gender**

We found that expert gender had no effect on perceptions of credibility or mock juror decisions. Further, no statistically significant interactions regarding expert gender emerged in the present study. These results are encouraging: they suggest that jurors may not be using gender of expert as a peripheral cue to assess expert knowledge or credibility.

### **Implications for Testifying Experts and Attorneys Selecting Experts**

We constructed large differences in how knowledgeable the experts were in the “high” vs. “low” condition in this study. However, the mock jurors did not pick up on the differences in the experts to the degree that we expected. These findings suggest that in uncontested cases or cases where the evidence is overwhelmingly strong for one side, the expert’s basic credentials, accomplishments, or demonstrated knowledge may not make much of a difference to jurors. Experts and attorneys in such cases may not have to fret about relatively unaccomplished experts; so long as they meet a threshold level of perceived knowledge, various credentials may not matter. For example, it may make no difference whether the expert attended an Ivy-League vs. a less-known institution, is or is not board certified, or has published in scientific journals or not.

What this research cannot speak to is whether differences in experts’ knowledge would make a difference to judges, for example, in bench trials. Judges are probably more sophisticated about discerning relative degrees of expert knowledge. Furthermore, because our

participants were only exposed to one expert, the results cannot speak to whether judges or jurors would notice relative differences in experts' knowledge if there were opposing experts in a single case. While a meta-analysis found similar effects between unopposed and opposed expert testimony on juror decision-making,<sup>65</sup> other studies have revealed particular contexts in which opposing testimony may have a uniquely strengthened effect.<sup>13</sup> Perhaps if the "high" and "low" experts were compared side-by-side, their differences would become more salient and a stronger effect would have been found.

### **Strengths, Limitations, and Future Directions**

The knowledge manipulations used in this study were developed by amalgamating conceptual components from a variety of prior research projects. This was the second study to employ these knowledge manipulations.<sup>(see 10)</sup> The current study was the first to test the unique effects of knowledge on mock jurors' determinations of witness credibility and decision-making. A strength of this design was the resultant ability to interpret direct causal relations from expert knowledge and gender to credibility and case-related decision-making. Additional strengths adding to ecological validity were the use of actual Ph.D. forensic psychologists as experts in the video-taped conditions and filming the stimulus video in a well-simulated environment.

However, to achieve the control needed to experimentally manipulate expert knowledge in this preliminary study, we did not fully capture some real-world elements of a capital trial. Limitations include the lack of voir dire or a deliberation and the use of a college student sample.<sup>66</sup> College students often provide a large, easily accessible population for the purposes of initial mock jury research.<sup>67</sup> While a review of jury simulation research concluded that the use of students as mock jurors is not necessarily a cause for concern,<sup>68</sup> recent research suggests some differences between college and community samples may exist.<sup>69-70</sup> Nevertheless, the use of a

college sample has been deemed no more problematic to generalizability than other common variables (e.g., trial context; jurisdiction).<sup>67</sup>

Other limitations of our sample include that it was largely Caucasian (79%), female (81%) and young (average age 19). While the characteristics of this sample do not reflect that of an average jury pool, the people in this sample were jury-eligible citizens and may serve in actual trials at some point. A replication of our results with a more diverse sample within a paradigm that further extends the realistic nature of the trial process would allay some validity concerns, increase the generalizability of the findings, and increase the confidence the field can place in these results. Analyses were also complicated because the particular female expert in this study was perceived as more attractive than the particular male expert; suggesting our MANCOVA results should be interpreted with caution. It is possible that the gender manipulation was somewhat weakened by the difference in attractiveness and thus, may have underestimated the relationship between gender and the dependent variables.<sup>40,42</sup> Future research should seek to avoid confounds due to attractiveness, possibly by including multiple male and female experts for comparison.

Studying witness knowledge in a capital proceeding potentially limits the generalizability of our findings to other court proceedings. Of course, this criticism isn't unique to capital proceedings. The same argument could be made for any other potential proceeding. Had we chosen to study expert knowledge in a civil commitment proceeding, for example, those findings would potentially only have been relevant for other civil commitment proceedings. We chose to study expert knowledge in a capital case for several reasons. First, because "death is different" and capital trials are among the most contentious cases, mock jurors' motivation to attend to the task and to the expert may have been maximized in this context. Second, lawyers and experts

may seek the most consultation given the resources devoted to a capital case and the high stakes (death versus life) partially contingent on testimony effectiveness.

Third, the other studies we have published that have experimentally manipulated elements of expert credibility all have used the same basic mock trial stimuli (i.e., see Table 1). To meaningfully compare the findings from the current study with the body of research that has developed on witness credibility, we wanted to hold constant as many details as possible, other than the credibility behaviors that have been manipulated across the various studies. Finally, most prior research on expert witness testimony varying clinical versus actuarial testimony effectiveness (related to expert witness knowledge) has been in capital sentencing paradigms, which allows us to build on this line of research.

We also note that the witness's self-proclaimed expertise (e.g., the expert's statement that "as far as I know I've never been wrong") may have introduced a confound of perceived arrogance coupled with high knowledge. To the extent that this confound was present and systematically affected perceived likeability, this aspect of the knowledge presentation may have influenced more than just perceived expertise by lessening expert likeability and hampering effects of the increased confidence in the highly knowledgeable expert. Future research should explore the relative influence of various types of high expert knowledge displays on the stand.

Overall, manipulations of high versus low expert knowledge did not affect credibility or significantly predict mock jurors' decisions in the hypothesized manner. In this discussion, we presented hypotheses about why these findings may have emerged, emphasizing support found for heuristic models' explanatory value in understanding how expert testimony may influence jurors' evaluation of an expert's credibility. Given its centrality to the courts' reliance on expert testimony, future research should seek to clarify the role of expert knowledge in juror

evaluations of expert evidence. In short, when answering the questions we originally set out to explore, it appears mock jurors do notice variations in expert witness knowledge; however, this difference may not necessarily carry weight when it comes down to influences on evidence interpretation and decision-making.

Table 1. Definitions and Examples of the Four Witness Credibility Model (WCM) Factors

WCM Factor <sup>7</sup>	Definition	Operational Definition
Likeability	The degree to which an expert is friendly, respectful, kind, well-mannered, and pleasant. <sup>10,17,23</sup>	<p><b>High Likeability.</b> Consistent use of “we” or “us” when discussing members of the scientific community or humanity as a whole, moderate levels of smiling, modest statements and conclusions (e.g., “relatively certain” or “we do not know everything there is to know in psychology”), consistent eye contact with lawyer and jury, and informal speech (i.e., low technical jargon and use of surnames of parties in the courtroom).<sup>10,17,23</sup></p> <p><b>Low Likeability.</b> No use of “we” or “us”, no smiling, excessive statements of certainty of conclusions, inconsistent eye contact, highly technical jargon and frequent formal references (e.g., “the client”, “the defendant”).<sup>10,17,23</sup></p>
Knowledge	The degree to which an expert is perceived to be well-informed, competent, or perceptive and to possess or exhibit intelligence, insight, understanding, or expertise. <sup>10, Current Study</sup>	<p><b>High knowledge:</b> Strong educational credentials (e.g., board certification, history of academic publication in case-relevant area of expertise [educated at Yale, American Board of Forensic Psychology certified, history of relevant publications]), solid relevant clinical and/or research experience [researches risk assessment, has conducted over 100 clinical risk assessments over 14 years], consistent clarity and substantive content of communication, moderate assertiveness (e.g., “as far as I know I've never been wrong” when queried about awareness of clinician error), self-proclaimed expertise (e.g., “In my expert opinion...”), and demonstrated familiarity with the case (e.g., multiple interviews with the defendant).<sup>10, Current Study</sup></p> <p><b>Low Knowledge:</b> No mention of educational credentials, minimal relevant experience (e.g., little experience or non-relevant experience [2 years as a psychotherapist, no previous risk assessment experience]), inconsistent clarity and substantive content of communication, low assertiveness (e.g., “no” when queried about awareness of clinician error), no self-proclaimed expertise, inadequate familiarity with the case (e.g., one short interview with the defendant the week the case went to trial).<sup>10, Current Study</sup></p>
Confidence	The degree of demonstrable self-assurance expert witnesses have in their general ability on the stand. <sup>24</sup>	<p><b>Low confidence:</b> Quivering tone of voice, dysfluencies in speech, vacillating pace of speech, corrections, breaks in the flow of words, postural awkwardness, fixed eye contact, saying “you know” to seek assurance, asking for repetition of questions, and signs of anxiety and nervousness.<sup>24</sup></p> <p><b>Medium confidence:</b> Moderate and stable tone of voice, clarity in speech, moderately paced speech, willingness to acknowledge a degree of certainty (“I am reasonably certain”), smooth narrative statements, good posture and straight back, comfort and poise, consistent eye contact, accurate hearing and appropriate responses.<sup>24</sup></p> <p><b>High confidence:</b> Loud and strong tone of voice, assertive speech and mannerisms, rapidly paced speech, always and all statements (“I am certain”), good posture/leaning forward, high fluency of speech.<sup>24</sup></p>
Trustworthiness	[Not yet defined as part of WCM].	[Has not yet been operationally defined within the WCM].

Table 2. Conceptual components of knowledge in previous research.

Characteristic	Citation
Substantive content of communication	Ware & Williams, 1975 <sup>3</sup>
Assertiveness	Kern, 1982 <sup>2</sup>
Clarity of communication	Champagne, Shuman, & Whitaker, 1991 <sup>25</sup>
Educational credentials	Champagne et al., 1991 <sup>25</sup>
Familiarity with the facts of the case	Champagne et al., 1991 <sup>25</sup>
Relating testimony content to physical evidence and other witnesses	Champagne et al., 1991 <sup>25</sup>
Sufficient experience relevant to the content of the communication	Brodsky, 1991 <sup>4</sup>
Testimony's consistency with common sense	Sundby, 1997 <sup>33</sup>
Degrees obtained, positions held, populations evaluated or treated, professional certifications or licensure, board certification, membership in professional organizations, professional publications, prior court experience as an expert, honors and awards, etc.	Melton, Petrila, Poythress & Slobogin, 2007 <sup>26</sup>
Self-proclaimed credentials	Lee, 2007 <sup>1</sup>

Table 3. Means (and Standard Deviations) defined by expert gender and knowledge.

	Dependent Variables					Manipulation Check
	WCS Trustworthiness	WCS Confidence	WCS Likeability	Future Violence Likelihood	Sentencing Decision	WCS Knowledge
High Knowledge ( <i>n</i> = 72)	36.39 (10.04)	39.18 (9.08)	35.43 (8.55)	77.08 (16.41)	-0.20 (1.57)	39.83 (8.53)
Male Expert ( <i>n</i> = 35)	35.97 (9.43)	39.74 (8.63)	36.83 (6.20)	75.29 (18.13)	-0.32 (1.82)	39.97 (7.62)
Female Expert ( <i>n</i> = 37)	36.78 (10.71)	38.65 (9.57)	34.11 (10.21)	78.78 (14.66)	-.08 (1.32)	39.69 (9.48)
Low Knowledge ( <i>n</i> = 64)	36.26 (8.27)	38.02 (7.65)	39.29 (8.15)	74.80 (16.08)	0.12 (1.52)	35.97(9.33)
Male Expert ( <i>n</i> = 32)	34.78 (9.30)	37.38 (7.98)	39.71 (8.96)	75.41 (16.12)	-0.29 (1.76)	34.41 (10.62)
Female Expert ( <i>n</i> = 32)	37.63 (7.08)	38.53 (7.49)	38.84 (7.51)	74.19 (16.28)	0.53 (1.13)	37.53 (7.70)
Combined Knowledge Male Expert	35.40 (9.32)	38.61 (8.35)	38.21 (7.72)	75.34 (17.07)	-0.31 (1.78)	37.31 (9.52)
Female Expert	37.21 (9.09)	38.64 (8.55)	36.36 (9.24)	76.65 (15.49)	-0.21 (1.26)	38.68 (8.67)

*Note:* WCS = Witness Credibility Scale factors. Future Violence Likelihood = jurors' ratings of the percent chance the defendant would commit future violence (agreement with the expert's opinion of a high likelihood). Sentencing decision = negative scores denote higher death penalty likelihood and positive scores denote higher LWOP likelihood.

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