Expert Witness Confidence and Juror Personality: Their Impact on Credibility and Persuasion in the Courtroom

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The present study was conducted to investigate the relationship between both expert witness confidence and juror personality with expert witness credibility, as well as expert witness credibility with juror sentencing outcome. Participants were presented with one of three randomly assigned filmed scenarios depicting various levels of manipulated witness confidence. They then completed a sentencing outcome item, the Witness Credibility Scale, and the Goldberg Five-Factor Markers. Expert witness confidence had a significant main effect on ratings of credibility, with moderate levels of manipulated confidence yielding the highest credibility. Juror extroversion was positively related to perceptions of expert witness credibility. Finally, juror ratings of expert witness credibility, as well as two subcomponents, predicted juror sentencing outcome.

Court testimony may cause many experts to be apprehensive for a variety of reasons. For instance, lawyers may pressure expert witnesses through intrusive or aggressive questioning in cross-examinations,[1,2] and defendants occasionally threaten vindictive litigation.[3] Such prior experiences may diminish expert witness confidence and, as a consequence, negatively affect their credibility. One method of bolstering expert confidence is witness preparation. Boccaccini and Brodsky[4] noted that witness preparation instructs the witness on how to communicate honestly and effectively to inform and persuade jury members, as well as to boost witness confidence. Witness confidence by itself has been hypothesized to increase perceived witness accuracy and believability.[5]

In the present study, we examined behaviors reflecting expert witness confidence as predictors of perceived expert witness credibility. Juror individual difference factors may alter perceptions of expert witness credibility. Thus, we also assessed the association between juror personality and perceptions of expert credibility. The expert testimony literature will benefit from the present study in several ways. First, examining constellations of witness behaviors connoting confidence will add to the existing knowledge base for verbal and nonverbal targets of witness preparation. Second, extant work in the testimony area lacks assessment of the impact of a comprehensive framework of juror personality traits. Accomplishing such an analysis will facilitate understanding of how person-related characteristics influence perceptions of credibility.

We begin with a review of the literature on defining expert witness credibility. Then, we focus on defining confidence and associated behaviors in the context of expert testimony. We next establish a basis to investigate the effect of juror personality on perceptions of credibility. Finally, we look at studies that link credibility and jury decision-making to provide a rationale for testing the impact of expert credibility on sentencing outcome.

Expert Witness Credibility

A decision to utilize expert testimony includes a consideration of the likely impact of that testimony on the trial process and verdict.[6] Research on expert

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credibility in the courtroom is one means of investigating the impact of testimony.[7] Credibility is a multifaceted construct comprising numerous components including, but not limited to, believability,[8,9] credentials,[10] and likability.[8] Williams and McShane[7] succinctly defined credibility as the degree of trust potential jurors ascribe to the expert. In a broader scope, Boccaccini and Brodsky[4] assessed the role of locality of practice, work experience, testifying experience, and fee for testifying in the believability of expert witnesses in a survey of 488 adults. Expert witnesses were rated as most believable if they were from the same community as the participants, provided psychotherapy to clients, had previously testified for both the prosecution and the defense, and were not paid for their testimony. Gutheil[11] suggested that other components of effective or credible expert testimony include use of visual presentations (i.e., charts), adjustment of language to the level of understanding of the jury, use of an appropriate narrative style, and avoidance of direct criticism of opposing expert witness testimony.

Research on source credibility has taken place apart from the field of witness testimony. McCroskey[12] developed an early measure of source credibility that was subsequently revised[13] to include components such as good will, competence, and trustworthiness. Research utilizing this measure in business- and relationship-related work has shown credibility to be inversely related to verbal aggressiveness and communication apprehension.[14] Other early conceptualizations of credibility included components such as competence, dynamism, and objectivity.[15,16]

Studies of source credibility (outside the courtroom) indicated that persons who employ slow rates of speech are viewed as more calm, composed, trustworthy, and honest by evaluators in comparison to those who utilize rapidly paced speech.[17] Speakers who used rapid speech were seen as more dynamic and extroverted, but these qualities did not reflect a high degree of credibility. Overall, our definition of witness credibility drew on theoretical[12,13] and research perspectives on source credibility.[8–10] We now turn to the nature of confidence.

Confidence: Definition and Associated Characteristics

Expert witness confidence has often been noted to influence jurors.[18,19] It is important to distinguish low confidence from anxious behaviors, however, to avoid confounding interpretations of expert witness performance. We define confidence as the degree of demonstrable self-assurance expert witnesses have in their general ability on the stand. This conception is similar to the definition given by Slovenko[19] of witness confidence with the additional element of behavioral specification of levels of confidence.

Our working assumption is that expert witnesses with low confidence exhibit verbal and nonverbal cues characteristic of nervousness. While low confidence and high anxiety may evoke similar behaviors, we distinguish the two by asserting that anxiety or nervousness is one emotional result of having low confidence in one's ability to testify. In other words, the belief (confidence) precedes both the emotion (anxiety) and behavior (cues of nervousness). Examples of such cues include a quivering voice and fixed eye contact. While expert witnesses with medium or high confidence in their findings may be anxious about testifying, it is proposed that such witnesses may exude few external cues of anxiety or nervousness due to their assurance in their professional or scientific abilities. In sum, anxious verbal and nonverbal cues are seen as symptomatic only of low-confidence expert witnesses.

Speech pattern may affect the perception of confidence. For example, O'Barr[20] distinguished powerful from powerless speech as they relate to confidence; powerful speech is seen as a function of social status and reflects high confidence, while powerless speech conveys lower social status and low confidence. O'Barr found that mock jurors rated both male and female witnesses who used powerful speech as more convincing, truthful, competent, intelligent, and trustworthy than their powerless counterparts. Another differentiation in speech patterns on the stand can be seen in formal speech versus hypercorrect speech. According to O'Barr, formal speech is analogous to styles reflected in medium confidence levels and includes usage of lay terminology, people's names, and easily understandable vocabulary. Hypercorrect speech styles, on the other hand, refer to people in impersonal ways (i.e., "the client"), use technical terminology, and pedantic word choice. Mock-jurors rated expert witnesses as more convincing, competent, qualified, and intelligent when they used a formal speech style in comparison to a hypercorrect style.[20] Drawing on these findings, we utilized characteristics of the hypercorrect style in the

high-confidence condition, because impersonal language may be interpreted as highly confident or arrogant, whereas formal speech facets were used to reflect medium confidence.

Thomas and McFayden[21] stated that people express levels of confidence equal to the degree of assurance they have in their knowledge or beliefs. According to this perspective, highly confident expert witnesses may indicate that they are "absolutely certain" about their findings and act accordingly, whereas a moderately confident expert who is "reasonably certain" may give fewer cues of confidence. There are mixed results from studies and observers of the effects of expert witness confidence. A preliminary study found that moderate levels of confidence have a greater effect on mock jurors' decision-making processes than do higher or lower levels of confidence.[22] In contrast, judges and lawyers have been reported to prefer experts who are highly confident and make definitive conclusions.[23] From these studies, we can see that speech patterns and content of speech are associated with confidence.

Results on the association between confidence and credibility have been equivocal concerning what degree of confidence is most credible. The Confidence Heuristic Model[24–27] explains the relationship between confidence and perceiver judgment. This perspective holds that receivers of information make quick, surface judgments when presented with a large amount of information. In the case of judgments of expert or eye witness confidence, receivers judge the most confident communicators as being most accurate and/or credible.[28] In relation to self-rated judgments of confidence, Pulford and Colman[25] reported findings supporting the confidence heuristic in a sample of 56 participants who had to identify potential perpetrators of crimes. Participants with higher self-reported confidence in their identification of a suspect as perpetrator consistently persuaded their partners to arrest their suspects. The confidence heuristic model may indeed lend support to rating high expert confidence as the most credible.

Empirical studies show a strong relationship between confidence and persuasion.[21,29] For instance, an early study that tested such a hypothesis yielded a curvilinear relationship between experimental conditions of low, moderate, and high confidence with persuasion,[30] such that the greatest persuasion was found for messengers with a moderate level of confidence. These studies provide a basis to

hypothesize that juror perceptions of credibility will show a curvilinear relationship as a function of witness confidence, with the highest ratings of credibility being associated with medium expert confidence. Given the contradictory evidence between confidence-persuasion literature and the confidence-heuristic work, we sought in the present study to investigate which perspective was supported in the context of expert witness confidence and credibility.

The present study features two confidence constructs. The first, referred to from here on as manipulated confidence, comprises the behaviorally manipulated levels of confidence based on this section of the literature review. The second, referred to as perceived confidence, consists of the subscale from the Witness Credibility Scale on which mock jurors rate the expert. We make this distinction for the sake of conceptual clarification. Also, statistical analyses involving both manipulated confidence and total credibility were run with and without the perceived-confidence subscale, to avoid conceptual confounds.

Juror Personality Traits as Predictors of Decision-making

Juror personality traits may influence their evaluation of evidence. Previous research on juror decision-making has particularly focused on juror demographic variables such as sex, education, and occupation, in combination with traits of the expert such as credentials, physical appearance, and communicative ability.[10] Other factors that influence juror perceptions of evidence include age of the witness[31] and prior jury experience.[32]

While demographic and experiential factors have been investigated, in-depth constellations of personality traits have largely been ignored in the literature. The five-factor model (FFM)[33] is a commonly accepted conception of personality structure. The five factors are neuroticism, extroversion, openness to experience, agreeableness, and conscientiousness.[34] Each of the five domains comprises six subcomponents, or facets, that make up the respective unique qualities. General descriptions of each domain, including several facets from each domain, are as follows[33]:

> Neuroticism involves the degree of emotional stability in forms such as impulsivity, depression, anger, and anxiety.

Extroversion assesses the degree to which a person seeks external stimulation and comprises facets such as positive emotions, excitement seeking, and gregariousness.

Openness to experience examines imagination or intellectual acumen, and includes openness to ideas, fantasy, and esthetics.

Agreeableness describes a person's interactional disposition in ways such as level of altruism, warmth, and sympathy.

Conscientiousness incorporates self-control in forms including being organized, determined, and disciplined.

Research applications of the FFM have included investigations of personality stability, relationship to affective states (e.g., depression, anxiety), and delineation of other personality factors (e.g., spirituality).[33,35,36]

Juror personality traits may influence perceptions, and there are a few investigations of five-factor traits in relation to juror belief patterns.[37–39] However, juror personality research has focused predominantly on constructs such as dogmatism and authoritarianism,[40] both of which emphasize closed-minded, rigid thinking (directly opposed to the FFM factor of openness to experience). Narby et al.[41] conducted a meta-analysis of studies that measured juror verdict preferences and two forms of authoritarianism: traditional and legal. Both forms of authoritarianism were consistently associated with juror verdicts across 20 studies.

Research on the five-factor traits has shown an association between extroversion and alteration of decisions after group deliberation, favoring the plaintiff in civil trial outcomes.[38,42–44] This body of literature also suggests jurors high in openness are less influenced by fellow jurors, and those high in conscientiousness are more influenced by their peers.[42] One study that examined the FFM domains and credibility focused solely on openness. This study found that openness was positively associated with persuasion in a sample of 200 university students in India.[45] In other words, students higher in openness to ideas were more likely to be persuaded by information presented to them. This finding contradicts how general openness relates to persuasion from other jurors, but is possibly accounted for because of the narrow definition of openness used in the study.

Expert Witness Testimony and Jury Sentencing

The sentencing phase of capital murder cases, a context in which expert witnesses commonly testify, has drawn interest to the link between expert witness testimony and juror sentencing recommendations.[46] Jurors often take into account the opinion of an expert mental health witness on factors such as the causes of violence by the defendant and the likelihood of future violence.[47] Williams and McShane[7] reported that credibility of psychological testimony has a significant effect on death sentence recommendations. In this case, expert testimony about the defendant's insanity was considered by potential jurors, and, overall, the likelihood of death sentences decreased compared with prior ratings.

The Present Study

The available literature lacks sufficient information on expert witness confidence and associated behaviors as they relate to perceptions of credibility. Moreover, this investigation offers one of the first looks at juror personality as it relates to expert testimony. With these goals in mind, the hypotheses were:

H1: Highest ratings of expert witness credibility are expected in the medium manipulated confidence condition.

H2: Juror personality accounts for significant variability in witness credibility.

H3: Expert witness credibility is positively related to congruent juror sentencing decisions; that is, higher ratings of expert credibility are associated with greater agreement by mock jurors.

Method

Manipulation and Pilot Study

A script of courtroom sentencing testimony originally developed by Krauss and Sales[48] to study actuarial versus clinical testimony was adapted for the current study. Additional research employing these scripts has been conducted by Krauss and Lee.[49] The script portrays forensic expert witnesses testifying about their evaluation of a convicted murderer during the sentencing phase, describing the high likelihood that the defendant will commit future violent acts. The video presents a prosecution expert testifying that a defendant convicted of murder is likely to commit future violent acts.

Three versions of the script were used to portray the three levels of manipulated confidence. Two male witnesses were videotaped at the three different levels of confidence. The actors were extensively trained using repeated practice, video tape review, and pilot studies to ensure consistency and accuracy of portrayed levels of confidence.

As a manipulation check, a confidence item on a 10-point Likert scale was analyzed to ensure that the varying manipulation levels conveyed the desired ratings of levels of confidence. It read: "How confident would you rate the witness?" Participants rated on a scale of 1 (low confidence) to 10 (very high confidence). Also, an open-ended question asking participants about aspects of the testimony on which they based their determination of perceived confidence, as well as an adjective checklist adapted from the Evaluation of Others Questionnaire,[50] was included to detect the presence of other constructs. The manipulation was successful in that desired differential ratings of confidence were obtained. Also, participants' perceptions of what the study was about were concluded not to have influenced their judgments of the expert witnesses.

A pilot study was conducted to verify that the different scenarios represented different levels of manipulated confidence. A 2 × 3 multifactor analysis of variance (ANOVA) was conducted to test the effect of actor and manipulated confidence level on the mock juror's ratings of perceived confidence. There was a significant main effect of manipulated confidence level on the rating of perceived confidence ($F(2,79) = 98.31$, $p < .001$). Least significant difference (LSD) *post hoc* comparisons revealed significant mean differences between each level of manipulated confidence with every other level ($p < .001$ for all comparisons). Based on these results, we concluded that the manipulated levels of confidence accurately reflected differing levels of perceived confidence. The interaction between actor and manipulated confidence level was not significant ($F(2,79) = 1.63$, $p = .205$). This finding indicates that the particular actor observed made no difference in mock juror ratings of perceived confidence at each level of the manipulation.

The study was approved by the University of Alabama Institutional Review Board for the Protection of Human Subjects.

Materials

Demographics

Participants completed a demographic form inquiring about their age, sex, ethnicity, religious orientation, major/intended major in school, attitudes toward the death penalty, and previous experience serving on a jury. Religious orientation included options to identify oneself as Catholic, Protestant, Christian (other), Jewish, Agnostic, Atheist, or Other. Christian (other) was added to distinguish the variety of southern Christian denominations (e.g., Southern Baptist) from other predominant categories such as Catholicism and Protestantism.

Manipulated Expert Witness Confidence

Levels of manipulated confidence were portrayed through scripted videotapes. The altered verbal and nonverbal components of each level of confidence are described below. Three levels were assessed: low, medium, and high confidence.

> Low confidence: 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.

> Medium confidence: 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.

> High confidence: 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.

Personality Traits

Personality traits were measured with the Goldberg Five-Factor Markers (GFFM).[51,52] This brief measure is based on a personality inventory NEO-PI-R[34] and measures five personality domains: neuroticism/emotional stability (N), extroversion (E), openness to experience (O), agreeableness (A), and conscientiousness (C). The GFFM consists of 50 questions scored on a 1–5 Likert scale. Cronbach α reliabilities have been reported as follows: .86 for N,

.87 for E, .84 for O, .82 for A, and .79 for C.[51,52] Internal consistencies for the present investigation were similar: .77 for N, .87 for E, .74 for O, .78 for A, and .79 for C.

Expert Witness Credibility

Expert credibility was assessed with the Witness Credibility Scale.[8] The scale contains 20 items, each rated on a 10-point Likert scale. Prior factor analyses yielded four separate, robust domains: confidence, likability, trustworthiness, and knowledge.[8] The α coefficients have been reported for each subscale and are as follows: confidence (.88), likability (.86), trustworthiness (.93), and knowledge (.86). The subscale internal consistencies in this investigation were .96 for confidence, .94 for likability, .96 for trustworthiness, and .96 for knowledge. The four subscales are totaled for an overall credibility score. Griffin et al.[8] reported $\alpha = .95$ for the total score. For overall credibility in the present investigation, $\alpha = .97$. For the purposes of the present study, expert witness credibility was defined by all four factors of the scale, as well as the overall total credibility score.

Juror Sentencing

Juror recommendation of the death penalty was assessed with a 10-point Likert-scale. The question read: "Based upon the expert witness's testimony, how likely are you to recommend a death sentence?"

Procedure

Participants watched a randomly assigned condition of expert witness testimony and then completed the witness credibility scale,[8] sentencing recommendation item, and GFFM.[51,52]

Data Analysis

All assumptions of equality of variances, normality, and independence were satisfied with one minor exception addressed in the analysis discussion. In analyses in which control variables were used, the control set included: the juror's sex, jury duty experience, ethnicity, and support for the death penalty. Furthermore, analyses involving both expert confidence and credibility were conducted once with and once without the confidence items of the witness credibility scale. In this way, the potential confound of overlapping of manipulated expert witness confidence and that subscale of the credibility scale was addressed.

Results

Participants

Participants consisted of 317 undergraduates from introductory psychology courses at a large university in the southeastern United States. They were offered research credit in their courses for participation. Of the 317 participants, those satisfying the death qualification criteria established in Witherspoon v. Illinois[53] were eliminated from the analyses, to reflect an externally valid jury pool. In other words, mock jurors who were completely against assigning the death penalty were eliminated from the data analyses. Demographic data for those participants are reported below.

Of the original pool of 317 participants, 299 were death-eligible. Of those, 96 were male, 201 were female, and 2 did not identify their sex. The mean age was 18.97 years (SD = 2.64), with a range of 17 to 52 years. There were 94 participants in the low-confidence group, 101 in the medium-confidence group, and 104 in the high-confidence group. Participants reported their ethnicity as follows: Caucasian, 249 (83%); African-American, 36 (12%); Hispanic, 9 (3%); Asian-American, 2; other, 2; and 1, unspecified. Participants reported their religious affiliation as follows: Catholic, 39; Protestant, 55; Christian (other), 172; Jewish, 4; Agnostic, 10; Atheist, 7; Other, 9; and unidentified, 3. Eight participants reported having jury duty experience; they were retained in the analyses.

Witness Confidence Analyses

The graph in Figure 1 depicts the relationship between manipulated expert witness confidence and total expert witness credibility. The one in Figure 2 displays the relationship between manipulated expert witness confidence and expert credibility subscales.

ANOVA results showed a significant main effect of manipulated expert witness confidence on perceived total credibility ($F(2,296) = 163.15$, $p < .001$), with significant differences in perceived credibility between pairs of all three manipulated-confidence conditions. LSD post hoc analyses showed that the low-confidence condition was rated as significantly less credible than both the medium- and high-confidence conditions (both $p < .001$), and the medium-confidence condition was rated as significantly more credible than the high-confidence condition ($p = .013$). The same pattern was also found when
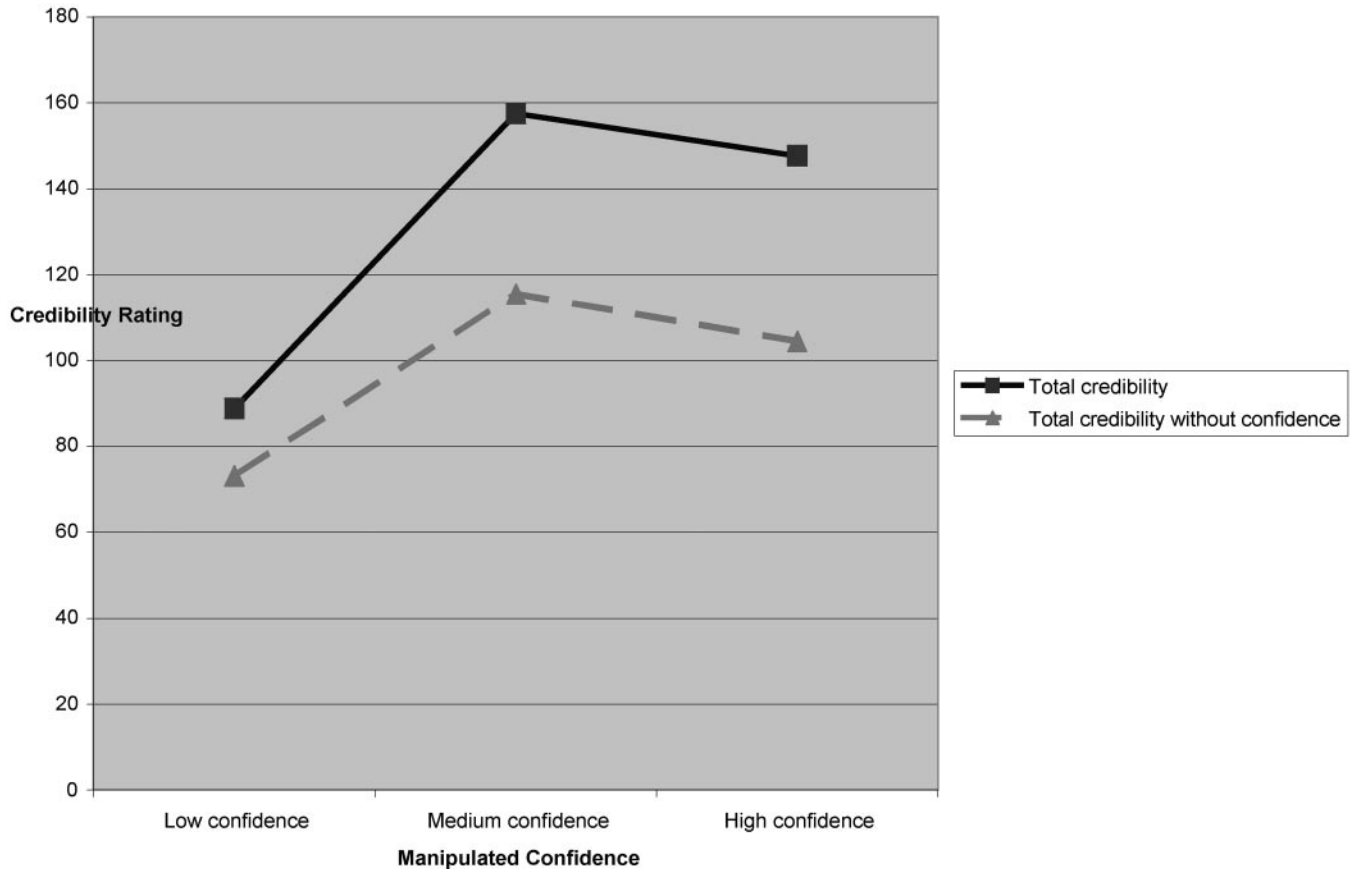
Figure 1. Manipulated confidence by perceived credibility.

the perceived-confidence subscale was removed from the measure of credibility.

Analyses yielded a significant main effect of manipulated expert witness confidence on perceived confidence ($F(2,296) = 463.50$, $p < .001$). Although differences were significant between the low-confidence witness and both the medium and high-confidence witnesses ($p < .001$ for both comparisons), the difference between the medium- and high-confidence witness on perceived confidence was not significant ($p = .297$).

Similar significant main effects of manipulated expert witness confidence were found on perceived likability ($F(2,296) = 14.05$, $p < .001$), on perceived trustworthiness ($F(2,296) = 74.10$, $p < .001$), and on perceived knowledge ($F(2,296) = 149.03$, $p < .001$). LSD *post hoc* tests revealed significant differences between the manipulated medium-confidence witness with both the low- and high-confidence witnesses on likability ($p < .001$ for both comparisons). LSD *post hoc* tests revealed significant differences in perceived trustworthiness and knowledge between

the low-confidence witness and both the medium- and high-confidence witnesses ($p < .001$ for all comparisons). There was also a significant difference in perceived trustworthiness between the medium- and high-confidence witnesses ($p = .003$).

Juror Personality Analyses

Set regressions were used to test the ability of the set of personality factors to predict subscales of perceived witness credibility, as well as total credibility with and without the confidence subscale. Cohen and colleagues stated that set regression is warranted when "there is some theoretical role shared by the variables in the set" (Ref. 54, p 169). Therefore, assessing personality as a set is justified because juror's individual personality traits do not exist apart from each other. However, they also noted that examination of individual tests of factors in a set is still warranted. Thus, each personality domain was also examined independently for predictive ability.

The personality set included measures of neuroticism, extroversion, openness, agreeableness, and
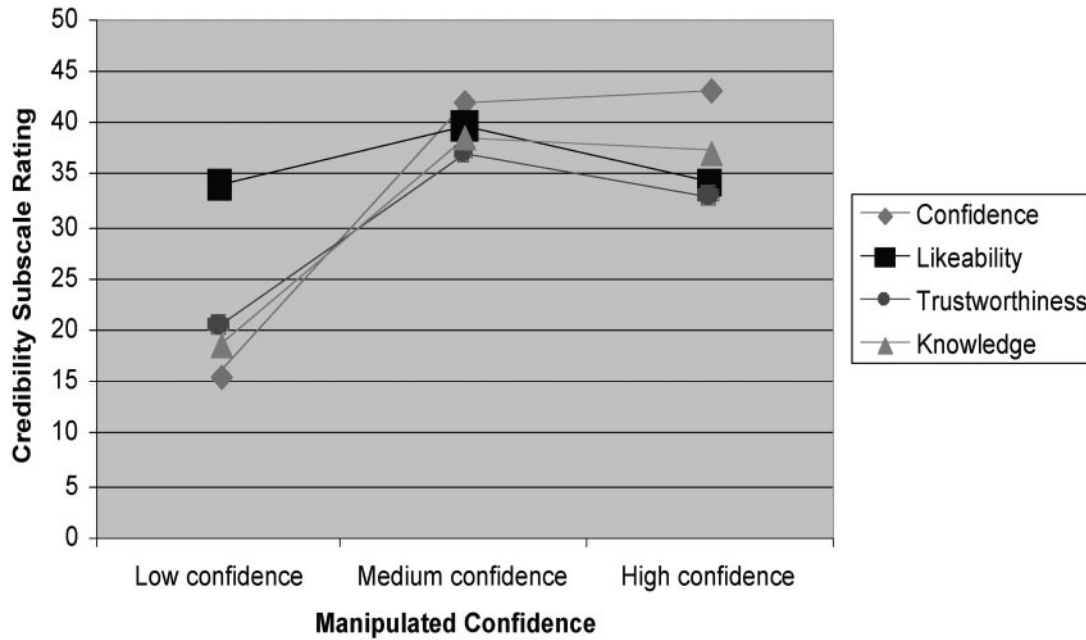
Figure 2. Manipulated confidence by perceived credibility subscales.

conscientiousness. These results are presented in Table 1. The personality set column represents the unique ability of the collection of personality variables to predict variance in each outcome above and beyond control variables.

Results for personality showed significant trends for both overall credibility ($p = .10$) and credibility without the perceived-confidence subscale ($p = .07$). These relationships were clarified by the fact that the personality set was significantly related to witness trustworthiness in particular ($p = .02$). Within the

Table 1 Juror Personality and Expert Witness Credibility Analyses

Dependent Variable	Personality Set ($F(5,282) = $)	Significant Personality Domains $t(282) = $)
Confidence	1.28 ($p = .27$) (R^2 change $= .02$)	None
Likability	1.01 ($p = .41$) (R^2 change $= .02$)	Extroversion (2.06, $p = .04$)
Trustworthiness	2.65 ($p = .02$) (R^2 change $= .04$)*	Extroversion (3.21, $p = .001$)
Knowledge	1.44 ($p = .21$) (R^2 change $= .03$)	Extroversion (2.45, $p = .02$)
Total credibility	1.85 ($p = .10$) (R^2 change $= .03$)†	Extroversion (2.67, $p = .008$)
Total credibility w/o confidence	2.05 ($p = .07$) (R^2 change $= .04$)†	Extroversion (3.00, $p = .003$)

The set of control variables was not significant in all analyses. All effect size values represent the impact of set two (personality variables).
*Significant set.
†Significant trend.

personality domains, only extroversion was a significant predictor of components of credibility. Extroversion was also associated with overall credibility and credibility without the perceived-confidence subscale.

Witness Credibility and Juror Sentencing Analyses

A set regression was used to assess the ability of witness credibility subscales (confidence, likability, trustworthiness, and knowledge) above and beyond control variables to predict variance in likelihood to assign the death penalty. The effect of the set of control variables on likelihood to assign the death penalty was significant ($F(8,287) = 3.73$, $p < .001$; $R^2 = 1.09$). Specifically, there was a significant positive main effect of juror support for the death penalty on likelihood of assigning the death penalty ($t(303) = 4.84$, $p < .001$). No other control variables were significant.

The effect of the set of witness credibility subscales above and beyond control variables on assigning the death penalty was significant ($F(4,283) = 77.34$, $p < .001$; R^2 change $= .47$). No effect of perceived witness confidence ($t(283) = .41$, $p = .68$) or perceived witness likability ($t(283) = -1.12$, $p = .23$) emerged. However, perceived witness trustworthiness ($t(283) = 3.63$, $p < .001$) and perceived witness knowledge ($t(283) = 4.84$, $p < .001$) were signifi-

cant positive main effects on the likelihood of assigning the death penalty.

A multiple regression analysis was conducted to assess the ability of control variables and total credibility to predict the variability in likelihood of assigning the death penalty. The overall model predicted a significant amount of variance in likelihood of assigning the death penalty ($F(9,286) = 35.72$, $p < .0011$ $R^2 = .53$). Support for the death penalty was a significant positive main effect on likelihood of assigning the death penalty ($t(286) = 7.32$, $p < .001$). No other control variable was significant. A significant positive main effect was found for total perceived witness credibility ($t(286) = 16.25$, $p < .001$).

We repeated the above analysis after removing the confidence subscale from the total credibility measure. The overall model predicted a significant amount of variance in likelihood of assigning the death penalty ($F(9,286) = 32.64$, $p < .001$; $R^2 = .51$). Again, both support for the death penalty ($t(286) = 6.78$, $p < .001$) and total perceived witness credibility ($t(286) = 15.64$, $p < .001$) were significant positive main effects on recommending the death penalty.

Discussion

Manipulated expert witness confidence showed a curvilinear association, and juror extroversion showed a positive association, with judgments of witness credibility. The influence of behaviors associated with expert confidence on receivers of information supports prior research and commentary.[19,21,29] Our findings add that credibility was lower for high-confidence expert witnesses than for their medium-confident counterparts, while credibility increased from the low- to the medium-confidence condition.

Why the curvilinear relationship between manipulated confidence and credibility? For a start, manipulated confidence was defined by verbal and nonverbal behaviors during testimony. During pilot analyses, some mock jurors indicated that they used posture, certainty of conclusions, and rate and flow of speech to define their perceptions of expert confidence. At higher levels of manipulated confidence, mock jurors may have interpreted rapid rates of speech as overly intense, unwillingness to admit uncertainty in conclusions as cocky, and forward-leaning posture as an excessive attempt to be persuasive. Aspects of credibility such as trustworthiness and be-

lievability suffered in high-confidence witnesses when compared with medium-confidence witnesses who admitted a degree of uncertainty and spoke at a moderate pace.

Our findings partially contradict those related to a confidence-heuristic model.[25,28] This theory posits that receivers of information judge credibility or accuracy based on the messenger's level of confidence, instead of processing a significant amount of information themselves. In other words, that there is a positive linear association between perceptions of confidence and credibility or accuracy. Although mock jurors in our study rated medium-confidence witnesses higher in perceived credibility than low-confidence witnesses, this increasing pattern did not hold true for the medium- compared with high-confidence witnesses in the present study. The differences between our findings in confidence-heuristic work may be due to our participants' making an intentional correction in the high-confidence condition. If the expert was seen as unwarrantedly confident, the participants may have lowered their ratings of credibility to compensate.

Personality as a whole seems only marginally related to perceptions of expert testimony as indicated by significant trends between juror personality and ratings of overall expert credibility. However, extroversion appeared to affect juror perceptions of expert witness testimony; those high on extroversion perceived expert witnesses as more credible. Why was extroversion the only five-factor trait that exerted significant influence on perceptions of expert witness credibility? Krishnamurthy[45] found openness to be positively related to being persuaded, but utilized a culturally diverse sample and a definition of openness limited to openness to modern ideas.

While some researchers have found juror extroversion to be important in group deliberations,[42,43] it has not been examined in credibility research. Costa and McCrae[34] characterized extroverts as gregarious and outgoing persons who seek out positive interaction with their environment. Our positive relationship between juror extroversion and judgments of expert witness credibility may be due to extroverts' seeking out positive emotions. If this is the case, extroverts may rate expert witnesses who are positive, friendly, and talkable more favorably because they provide positive emotions. Thus, extroverts identify expert witnesses as trustworthy, likable, knowledge-

able, and therefore credible, according to the theoretical definition of credibility.

The present results replicated one finding of Williams and McShane,[7] in the sense that overall expert witness trustworthiness was positively related to influence on juror sentencing recommendation. The present study extends the current literature based on an expanded definition of witness credibility to include trustworthiness, knowledge, confidence, and likability. Williams and McShane limited their definition of credibility to juror trust of a witness. Components of the broadly defined construct of perceived credibility—namely, trustworthiness and knowledge—impact life-and-death decision-making. In this scenario, it appears that jurors who find an expert both knowledgeable and trustworthy can comfortably assign the death penalty to a criminal defendant. It is plausible that these facets of credibility, as opposed to likability and confidence, alleviate the hesitation or uncertainty jurors have in agreeing with, or following the opinion of, the expert witness. Although Federal Rules of Evidence dictate that the expert refrains from giving an opinion on the ultimate legal issue (in this case sentencing outcome), the expert provided evidence that the defendant was a continuing danger to society and likely to recidivate. Jurors may have an internal conflict about assigning the death penalty because of this uncertainty about future dangerousness. However, they may be more willing to recommend the death penalty in instances in which the expert is perceived to possess sufficient knowledge and to convey an air of trust or integrity.

Implications of Present Findings

The present study necessitates a word about the constructs of confidence and credibility in the context of expert testimony. The significant associations and lack thereof in some instances clarify how these constructs function in expert testimony and jury decision-making. Expert confidence does not have a linear impact on credibility and decision-making. In other words, confidence does not equal credibility, which means, pragmatically speaking, that the most effective witness may not be the supremely confident witness. Also, we have identified a broad scope of behaviors associated with confidence. This finding, however, does not mean that the construct was completely assessed, nor does it illuminate which (if any) facets of behaviorally defined expert confidence are

the most influential. Finally, although expert credibility has shown four orthogonal factors in previous studies,[8] it appears that different portions of the construct of expert testimony actually relate to the sentencing recommendation. The validity of the four-factor definition of expert witness credibility, therefore, is somewhat limited if we consider all four equally important. Expert credibility, as theoretically and empirically defined by the present study, may in fact vary depending on the exact stage of trial or context of jury decision at hand.

Our findings have practical implications for both witness preparation and jury selection. In the present study, we looked at factors associated with expert witness confidence. Trial consultants can focus efforts of witness preparation not only toward accurate testimony, but also toward methods of bolstering confidence. Boccaccini and colleagues[55] have undertaken preliminary efforts in this area. The present study offers an evidence-based list of verbal and nonverbal factors that can be improved in witness preparation. These include, but are not limited to, a moderated, stable tone of voice; clarity in speech; moderately paced speech; willingness to acknowledge a degree of certainty; smooth narrative statements; good posture; poise; consistent eye contact; hearing accurately and responding appropriately; and indication of credentials and knowledge.

The present study also has implications for trial consultation. Trial consultants can advise legal counsel to incorporate questions tapping the construct of extroversion to assess jurors' potential to resist the impact of expert witness testimony. Example items would include questions regarding leadership, gregariousness, positive emotions, and social interactions.

A purpose of the present study was to arrive at a definition of confidence suitable for psycholegal research. Previous confidence scholars[11,19] have enumerated factors related to perceived confidence such as speech style, arrogance, and nervousness. We established working definitions of various levels of manipulated confidence cues based on flow and tone of speech, certainty of conclusions, posture, eye contact, and accurate responses to questions. Thus, the behavioral definition included both verbal and nonverbal components.

Limitations and Future Directions

Three areas of limitation to this study should be noted. First, participants were mostly from the

southeastern United States, of young average age, predominantly female, Caucasian, and Christian. Therefore, the conclusions drawn may be extended to more diverse populations only with caution. Second, the present study included only male expert witnesses for the prosecution testifying about future dangerousness. Although results may differ with female or expert witnesses for the defense, this parsimonious design was used to balance limits in generalizability with methodological simplicity. Previous empirical work also called into question whether jurors pay attention to expert opinions on future dangerousness.[56] Hence, the associations in the present study should be replicated in a different testimony context.

Also, a common concern in jury research is the use of mock jurors. Although we must acknowledge this limitation, psycholegal scholars have largely supported the use of mock jurors because of their similarities to real jurors [57] and the use of such research in many areas of legislative decision-making.[58] The high rate of death-qualified mock jurors also warrants comment in relation to generalizability. Our finding that approximately 299 of 317 (94.3%) were death-qualified jurors differs from rates of both actual juror samples and other mock juror samples (range from 64%–78%).[59–61] We suspect this finding to be a geographic artifact, given the political conservatism of the southeastern United States. Such a limitation certainly must be taken into account when drawing conclusions from this work.

Confidence research would benefit from employing a unified definition of confidence. Inquiry may be also undertaken into the notion of pseudoconfidence, or feigning confidence, to test how such a variation of genuineness relates to credibility. The present findings show that juror extroversion is an essential trait in many aspects of jury interaction. Further investigation of juror extroversion as it relates to other aspects of decision-making (e.g., prejudice/bias, guilt/innocence, other types of crimes) is warranted. Finally, future trial consultation research should seek to develop evidence-based witness confidence/efficacy scales, and evaluate cues of confidence in the context of witness preparation.

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