# The Impact of Gender–Role Congruence on the Persuasiveness of Expert Testimony

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*Previous research has examined the impact of the match between expert witness gender and the gender-orientation of the case, suggesting that traditional gender-role stereotyping was influencing mock jurors' decisions. Manipulations of the orientation of the domain of the case focus on the knowledge area of the case itself, rather than the actual knowledge of the expert. This reveals little about the impact of the association between the role of the expert and the expert's gender. The present study investigated whether perceivers make use of gender stereotypes as a shortcut for decisions when presented with the testimony of an expert witness. It was predicted that participants would award a higher amount of damages to the plaintiff when the plaintiff's expert's gender matched their role compared to when it did not match. It was also predicted that participants' evaluation of the plaintiff's expert witness's testimony and the expert would be more positive in the gender-role congruent condition. As expected, the female expert's testimony was viewed more positively when occupying a female-oriented role compared to a male-oriented role, and that the expertise of the female expert was evaluated more favourably in the female-oriented role compared to the male-oriented role. Despite the impact of gender stereotypes in biasing the evaluation of expert testimony on several dimensions, this had no apparent impact on award decisions.*

## I The Impact of Gender–Role Congruence on the Persuasiveness of Expert Testimony

It is generally assumed that jurors are both rational and informed arbiters of fairness,[1] and that jurors have an adequate comprehension of the legal procedures

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[1] Edie Greene et al, *Wrightsman's Psychology and the Legal System* (Thompson Wadsworth, 6th ed, 2007) 282.

and duties relevant to their role as decision-makers.[2] Research conducted over the past three decades, however, has suggested that just like individuals in everyday life, jurors in the courtroom are influenced by heuristics, which are cognitive shortcuts for making decisions. In particular, such research suggests a tendency for individuals to rely upon heuristics when making decisions about complex, ambiguous or personally irrelevant information.[3] Research has also shown that stereotypes, which can act as heuristics via their pre-existing evaluations of stereotyped targets, can influence jurors' decision-making processes within the context of novel ideas and situations.[4]

Expert witnesses provide a potentially valuable way for courts to educate jurors about things outside their everyday experience,[5] although due to the complexity of such expert testimony, jurors often struggle to understand it.[6] Thus, is it not surprising that research has shown that a variety of stereotypes influence the evaluation of experts and their testimony. Stereotypes about an expert's gender have a consistent effect on how they are evaluated,[7] and these findings have often been explained in terms of role congruity theory — the idea that people are evaluated more positively when they occupy roles consistent with expectations for people of their gender.[8] Despite this, much of this research has focussed on features of the expert or the case itself, rather than the role occupied by the expert. The current research set out to directly test the possible effect of the match between an expert's gender and the role they occupy on how mock jurors perceive the expert and the expert's testimony.

Expert gender is one of a range of extra-legal factors that have been shown to influence how perceivers view an expert's testimony. Mock jurors' perceptions

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2 Reid Hastie et al, 'A Study of Juror and Jury Judgments in Civil Cases: Deciding Liability for Punitive Damages' (1998) 22(3) *Law and Human Behavior* 287.

3 Martin J Bourgeois et al, 'Effects of Technicality and Access to Trial Transcripts on Verdicts and Information Processing in a Civil Trial' (1993) 19(2) *Personality and Social Psychology Bulletin* 220; Joel Cooper et al, 'Complex Scientific Testimony: How Do Jurors Make Decisions?' (1996) 20(4) *Law and Human Behavior* 379.

4 Galen V Bodenhausen and Meryl Lichtenstein, 'Social Stereotypes and Information-Processing Strategies: The Impact of Task Complexity' (1987) 52(5) *Journal of Personality and Social Psychology* 871.

5 Tess M Gemberling and Robert J Cramer, 'Expert Testimony on Sensitive Myth-Ridden Topics: Ethics and Recommendations for Psychological Professionals' (2014) 45(2) *Professional Psychology: Research and Practice* 120.

6 Ian Freckelton et al, *Expert Evidence and Criminal Jury Trials* (Oxford University Press, 2016) 93.

7 Blake M McKimmie et al, 'Jurors' Responses to Expert Witness Testimony: The Effects of Gender Stereotypes' (2004) 7(2) *Group Processes and Intergroup Relations* 131; Regina A Schuller et al, 'The Impact of an Expert's Gender on Jurors' Decisions' (2001) 25 *Law and Psychology Review* 59.

8 Alice H Eagly and Steven J Karau, 'Role Congruity Theory of Prejudice Toward Female Leaders' (2002) 109(3) *Psychological Review* 573.

of expert testimony are influenced by presentational format,[9] the expert's credentials,[10] the expert's likeability[11] and confidence,[12] the match between the expert's gender and the content domain of the case,[13] and even the match between the expert's gender and his or her style of language.[14] Moreover, expert gender has also been shown to exert an overall influence on perceivers' evaluations of an expert's credibility,[15] and to moderate evaluations of how experts perform under cross examination.[16] One way to understand how these extra-legal factors influence mock jurors' perceptions is by considering models of persuasion.

### A *Dual Process Models of Persuasion*

A jury trial can be thought of as a series of persuasive messages directed at the jury. Jurors' capacity for thinking carefully about that information will be reduced when they are under cognitive demand (ie they are being asked to think about a large amount of information or complex and/or contradictory information).[17] Jurors may be able to rely on stereotypes, such as those based on an expert's gender, to help them conserve some of their cognitive resources. These stereotypes may act as heuristics by offering a quick and easy decision rule for evaluating otherwise complex expert testimony, thus reducing the amount of information to which the juror must attend. Such a possibility is at the core of dual

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9 Regina A Schuller and Janice Cripps, 'Expert Evidence Pertaining to Battered Women: The Impact of Gender of Expert and Timing of Testimony' (1998) 22(1) *Law and Human Behavior* 17.

10 Cooper et al (n 3).

11 Stanley L Brodsky et al, 'Credibility in the Courtroom: How Likeable Should an Expert Witness Be?' (2009) 37(4) *Journal of the American Academy of Psychiatry and the Law* 525; Tess MS Neal et al, 'Warmth and Competence on the Witness Stand: Implications for the Credibility of Male and Female Expert Witnesses' (2012) 40(4) *Journal of the American Academy of Psychiatry and the Law* 488.

12 Robert J Cramer et al, 'Expert Witness Confidence and Juror Personality: Their Impact on Credibility and Persuasion in the Courtroom' (2009) 37(1) *Journal of the American Academy of Psychiatry and the Law* 63.

13 McKimmie et al (n 7); Schuller et al (n 7).

14 Blake M McKimmie et al, 'It's Not What She Says, It's How She Says It: The Influence of Language Complexity and Cognitive Load on the Persuasiveness of Expert Testimony' (2013) 20(4) *Psychiatry Psychology and Law* 578.

15 Tess MS Neal and Stanley L Brodsky, 'Expert Witness Credibility as a Function of Eye Contact Behavior and Gender' (2008) 35(12) *Criminal Justice and Behavior* 1515.

16 Bridget A Larson and Stanley L Brodsky, 'When Cross-Examination Offends: How Men and Women Assess Intrusive Questioning of Male and Female Expert Witnesses' (2010) 40(4) *Journal of Applied Social Psychology* 811.

17 Galen V Bodenhausen, 'Stereotypes as Judgmental Heuristics: Evidence of Circadian Variations in Discrimination' (1990) 1(5) *Psychological Science* 319.

processing models of persuasion, such as the elaboration-likelihood model[18] and the heuristic-systematic model.[19] Broadly stated, these models suggest that under some conditions, individuals engage in rapid, heuristically based inferential processing, whereas in others, the information presented is processed more deliberately and systematically.

To account for this contrast in style of thinking, Petty and Cacioppo[20] proposed the elaboration-likelihood model of persuasion, which analyses cognitive responses to persuasive communications. This model describes the conditions under which heuristics will influence judgements and proposes that there are two distinct routes to persuasion. Like the heuristic-systematic model,[21] this model distinguishes *central routes* to persuasion, which involve a detailed processing of information and argument, from *peripheral routes* based upon superficial cues irrelevant to the merits of the argument at hand. For detailed or deliberative processing to occur, the elaboration-likelihood model argues that decision-makers need a sufficient level of ability and motivation to engage in effortful thinking. As research has shown, however, jurors' motivation and ability to think carefully about evidence may be impaired when evidence becomes complex and lengthy.[22] Hence, even if the ability to process complex evidence is high, decisions may be influenced by peripheral cues if the level of motivation is inadequate. In a similar manner to the elaboration-likelihood model, Chaiken's[23] heuristic-systematic model assumes that heuristic processing predominates when motivation or capacity for effortful processing is low, such as when the issue is perceived as being inconsequential, or when time disallows extensive information processing. According to both models, therefore, the judgements of people with low capacity or low motivation are influenced very little by the quality of a message's persuasive argument, but rather are influenced to a greater degree by heuristic cues such as source credibility, attractiveness, likeability and message duration.

Within a legal context, dual processing models of persuasion have been applied to understanding how participants make decisions in mock jury studies.[24]

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18 Richard E Petty and John T Cacioppo, 'The Elaboration Likelihood Model of Persuasion' (1986) 19 *Advances in Experimental Social Psychology* 123.

19 Shelly Chaiken, 'Heuristic Versus Systematic Information Processing and the Use of Source versus Message Cues in Persuasion' (1980) 39(5) *Journal of Personality and Social Psychology* 752.

20 Petty and Cacioppo (n 18).

21 Chaiken (n 19).

22 Richard E Petty and John T Cacioppo, 'Personal Involvement as a Determinant of Argument-Based Persuasion' (1981) 41(5) *Journal of Personality and Social Psychology* 847.

23 Chaiken (n 19).

24 Joel Cooper and Isaac M Neuhaus, 'The "Hired Gun" Effect: Assessing the Effect of Pay, Frequency of Testifying and Credentials on the Perception of Expert Testimony' (2000) 24 *Law and Human*

Often, in cases where the evidence was complex or lengthy, or where judicial instruction was limited, the ability of mock jurors to arrive at a decision based on the facts of the case was impaired.

### B *Stereotypes and Jurors*

Stereotypes provide ready interpretations and explanations about the variety of people and events we encounter each day by organising and integrating social information.[25] When perceivers simplify their social world by using stereotypes, their understanding of people and events may no longer be accurate.[26] Specifically, stereotypes exaggerate the reality of our perceptions by sharpening the differences between social groups and softening the differences within social groups.[27] Stereotypes also influence where attention is directed,[28] what information is retrieved,[29] and how information is interpreted.[30] Given that stereotypes tend to comprise more affective responses toward a group than factual ideas about the group,[31] the potential for systematic bias arising from stereotypic beliefs about specific social groups and identities seems an inevitable risk during jury trials.

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*Behavior* 149; Irwin A Horowitz et al, 'Effects of Trial Complexity on Decision Making' (1996) 81(6) *Journal of Applied Psychology* 757.

25 Susan T Fiske and Shelly E Taylor, *Social Cognition: Topics in Social Psychology* (Random House, 1984) 143.

26 Blake M McKimmie et al, 'Stereotypical and Counterstereotypical Defendants: Who Is He and What Was the Case Against Her?' (2013) 19(3) *Psychology Public Policy and Law* 343; Jeffrey W Sherman et al, 'Stereotype Efficiency Reconsidered: Encoding Flexibility under Cognitive Load' (1998) 75(3) *Journal of Personality and Social Psychology* 589.

27 Henri Tajfel et al, 'Content of Stereotypes and the Inference of Similarity between Members of Stereotyped Groups' (1964) 22(3) *Acta Psychologica* 191.

28 Galen V Bodenhausen, 'Stereotypic Biases in Social Decision Making and Memory: Testing Process Models of Stereotype Use' (1988) 55(5) *Journal of Personality and Social Psychology* 726; Claudia E Cohen, 'Person Categories and Social Perception: Testing Some Boundaries of the Processing Effect of Prior Knowledge' (1981) 40(3) *Journal of Personality and Social Psychology* 441.

29 Reid Hastie and Purohit A Kumar, 'Person Memory: Personality Traits as Organizing Principles in Memory for Behaviors' (1979) 37(1) *Journal of Personality and Social Psychology* 25.

30 Mahzarin R Banaji et al, 'Implicit Stereotyping in Person Judgment' (1993) 65(2) *Journal of Personality and Social Psychology* 272.

31 Charles Stangor et al, 'Affective and Cognitive Determinants of Prejudice' (1991) 9(4) *Social Cognition* 359.

### C *Gender Roles and Stereotypes*

As one of the most basic and important social categories, the centrality of gender derives from its dichotomous and visibly identifiable nature.[32] According to social-role theory,[33] gender-related expectations about behaviour are derived from the differential distribution of men and women into social and occupational roles. Such stereotypic beliefs may be exaggerated through the portrayal of occupational roles represented in the media. For instance, television programmes commonly depict men pursuing careers of high status, in contrast to women who are largely confined to domestic and low-status roles.[34] Role congruity theory extends the idea of socially derived roles. According to this perspective, men and women are evaluated in their roles in terms of how congruent their gender role is with their role in society.[35] The potential for discrimination arises when a perceiver has a stereotype about how men or women are meant to behave, and those expectations are inconsistent with the role-congruent behaviours enacted by a person. In such a conflict, the perceiver will evaluate the person performing the behaviours more negatively because, although congruent with their role, the behaviours are incongruent with their gender stereotype. For example, a female CEO displaying typical leadership behaviours of assertiveness may be perceived more negatively than a man performing the exact same behaviours. In a jury trial where an expert presents evidence, a female expert may be evaluated more negatively if she occupies a professional role that might be stereotypically associated with men (eg a surgeon).

Research has demonstrated that the responses of mock jurors to expert testimony are influenced by the expert's fees, credentials and frequency of testimony,[36] as well as the format of the testimony presented.[37] Cooper and colleagues,[38] for instance, found that when exposed to complex expert testimony,

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32 Sandra L Bem, 'Gender Schema Theory: A Cognitive account of Sex Typing' (1981) 88(4) *Psychological Review* 354.

33 Alice H Eagly, *Sex Differences in Social Behaviour: A Social Role Interpretation* (Lawrence Erlbaum Associates, 1987) 8.

34 Kevin Durkin, 'Television and Sex-Role Acquisition 1: Content' (1985) 24(2) *British Journal of Social Psychology* 101; Teresa L Thompson and Eugenia Zerbinos, 'Gender Roles in Animated Cartoons: Has the Picture Changed in 20 years?' (1995) 32(9–10) *Sex Roles* 651; Dawn E England et al, 'Gender Role Portrayal and the Disney Princesses' (2011) 64(7–8) *Sex Roles* 555; Carmela Mazzella et al, 'Sex Role Stereotyping in Australian Television Advertisements' (1992) 26(7–8) *Sex Roles* 243.

35 Eagly and Karau (n 8).

36 Cooper et al (n 3); Cooper and Neuhaus (n 24).

37 Nancy Brekke and Eugene Borgida, 'Expert Psychological Testimony in Rape Trials: A Social-Cognitive Analysis' (1988) 55(3) *Journal of Personality and Social Psychology* 372; Schuller and Cripps (n 9).

38 Cooper et al (n 3).

decisions of mock jurors were significantly influenced by the credentials of the experts. Compared to the testimony of an expert witness whose credentials were less prestigious, the testimony of a well-credentialed expert was rated as more convincing, despite the testimony of each witness being identical.

The results of these studies suggest that when lacking the ability or motivation to scrutinise the content of expert witness testimony, individuals may revert to heuristic cues to assess the validity of the message. Along these lines, Schuller and colleagues[39] investigated whether people used the gender of an expert witness as a heuristic cue to evaluate the evidence presented by the expert. They expected this effect to be most pronounced when testimony presentation was complex. The gender of the expert and the complexity of the expert's testimony (low or high) were varied within a simulated civil trial involving an antitrust price-fixing agreement. As expected, the male expert was more persuasive than the female expert, but only when the testimony presented was complex.

In terms of source characteristics, the degree to which the expert's gender can activate stereotypes, which may influence perceptions of their testimony, has also been examined. McKimmie and colleagues investigated whether the evaluation of expert testimony was influenced by the congruency between the gender of the expert and the gender-orientation of the domain of the case (ie male-oriented automobile service business or female-oriented cosmetics sales business).[40] As hypothesised, the impact of the expert measured in terms of damages awarded was greater within the gender-congruent conditions than the incongruent conditions. Consequently, when an expert testified in a domain that was stereotypically consistent with their gender, the expert's testimony was more persuasive and had greater impact upon mock jurors' decisions.

McKimmie et al's study examined the impact of the match between the expert's gender and the gender-orientation of the case, and proposed that gender-domain match effects were based on traditional gender-role stereotyping along the lines of role congruity theory. Manipulations of case domain orientation focus on the knowledge area of the case itself rather than the knowledge of the expert who is presented in the same role in both case domains. As such, previous research reveals little about the impact of the match between the role of the expert and the expert's gender, nor about the normative expectations about behaviour of individuals occupying certain positions. Drawing from research that suggests that differences exist in the evaluation of performance of men and women, such

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39 Regina A Schuller et al, 'The Impact of Expert Testimony on Jurors' Decisions: Gender of the Expert and Testimony Complexity' (2005) 35 *Journal of Applied Social Psychology* 1266.

40 McKimmie et al (n 7).

that men are viewed more positively in traditionally male-oriented roles while women are viewed more positively in female-oriented roles,[41] gender-role congruency may be a significant determinant of the persuasiveness of an expert witness's testimony.

The present study examined the impact of an expert's testimony on jury decision-making processes as a function of the expert's gender and the gender orientation of the role they occupy. Drawing from research on dual processing models of social persuasion[42] and gender stereotypes,[43] the impact of expert testimony upon participants was tested in a civil court simulation involving a negligence claim. The matter involved a female personal assistant who had incurred significant throat injuries as a consequence of being struck by an unfastened ladder falling from a truck. The owners of the vehicle had been found liable in negligence and the plaintiff was claiming damages for loss of income and pain and suffering. This involved the presentation of testimony from either a male or female expert witness occupying either a male-oriented role (surgeon) or a female-oriented role (speech therapist). Following the evidence, participants were requested to award an amount of damages to the plaintiff, as well as to evaluate the experts and their testimony on a number of dimensions.

## D *Predictions*

It was predicted that within the gender-role congruent conditions, participants' evaluations of the plaintiff expert and the expert's testimony would be more positive when the expert's gender was congruent with the role they occupied than when the expert's gender was incongruent with his or her role. In addition, it was predicted that the ratings of the plaintiff's expert would predict the recommended damages to be awarded to the plaintiff.[44]

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41 Eagly and Karau (n 8); Peter Glick et al, 'What Mediates Sex Discrimination in Hiring Decisions?' (1988) 55(2) *Journal of Personality and Social Psychology* 178.

42 Chaiken (n 19); Petty and Cacioppo (n 18).

43 Eagly and Karau (n 8).

44 Although jurors rarely recommend personal injury awards in Australia and non-pecuniary losses are prescribed by legislation in Australian jurisdictions, jurors do make such awards in other jurisdictions and such recommendations are common outcome measures in studies examining how expert testimony is perceived.

## II METHOD

### A *Pilot Study*

A pilot study was designed to select two occupations for the main study: one that was seen as stereotypically female in orientation, and another that was seen as equally stereotypic, but in the male domain. Twenty-seven undergraduates participated for partial course credit. Participants read a brief outline describing a product liability case in which a national radio presenter (the plaintiff) injured his throat by consuming tinned soup containing a foreign chemical agent. The outline included a statement that a previous trial had found the defendant company legally responsible and that the purpose of the current trial was to decide upon damages to be awarded to the plaintiff.[45] Participants were informed that they would be asked their opinions about different types of expert witnesses who could potentially testify in this trial regarding the length of time that would be required for the plaintiff's rehabilitation.

#### 1 *Expert Witness Judgements*

To determine the most effective manipulation of the gender domain of the expert witness, a variety of medical occupations were investigated in a pilot study. These occupations were occupational therapist, physiotherapist, speech therapist, chiropractor, osteopath, general practitioner, ear nose and throat specialist, voice coach, rehabilitation nurse, and surgeon. All participants rated each of the 10 occupation domains on the following four dimensions: likelihood of an expert in this occupation being male; likelihood of an expert in this occupation being female; level of status of an expert in this occupation; and level of expertise of an expert in this occupation. A 9-point scale was used for these ratings, with higher scores indicating stronger endorsement.

#### 2 *Level of Expertise*

The criteria for selecting the two types of experts for the main study was that the experts would be clearly seen as being of one type of gender (either male or female, but not both), and that the experts would be viewed as being equivalent in terms of both status and level of expertise (see Table 1 in the Appendix for means). A series of within-groups analyses of variance ('ANOVAs') found that

[45] Participants were instructed that there were two trials. This would not occur in practice in Australia, although the judge might order two hearings (usually at the request of the parties). More commonly, the assessment of damages would be delivered at the same time as the judgment on liability; however for the purposes of the study, these two decisions were separated.

participants thought it was more likely that a speech therapist was a woman ($M$ = 6.78, $SD$ = 1.81) than a man ($M$ = 3.56, $SD$ = 1.63), $F(1, 26) = 26.16$, $p < .001$, and that it was more likely that a surgeon was a man ($M$ = 7.11, $SD$ = 1.34) compared to a woman ($M$ = 3.67, $SD$ = 1.27), $F(1, 26) = 73.92$, $p < .001$. There were no significant differences between ratings of the level of expertise of the speech therapist and surgeon, $F(1, 26) = 0.06$, $p < .89$. There was, however, a significant difference between ratings of the status of a speech therapist and a surgeon, $F(1, 26) = 125.81$, $p < .001$. The occupation of surgeon was rated as having higher status ($M$ = 8.63, $SD$ = 0.69) compared to the occupation of speech therapy ($M$ = 5.30, $SD$ = 1.35). Despite the difference between those two occupations in status ratings, they were the most equivalent in terms of the first occupation (speech therapist) being seen as more likely to be occupied by a woman and the second by a man (surgeon), and had similar ratings for level of expertise. As such, they were chosen for the main study.

## B *Main Study*

### 1 *Participants and Design*

Participants were 82 undergraduates (73 women and 9 men) who received course credit for their voluntary involvement in the experiment. Data collection stopped at the end of semester, although this resulted in a somewhat underpowered design.[46] The mean age of participants was 24.27 years ($SD$ = 8.81). Participants were randomly assigned to one of the four conditions comprising the between-subjects manipulations of expert gender (male, female) and expert role gender-orientation (male-oriented surgeon role, female-oriented speech therapist role).

### 2 *Materials and Procedure*

After providing consent, participants were informed that the study involved reading a court transcript presented via computer with associated photos of the courtroom, followed by the completion of a short questionnaire. Throughout the course of the experiment, participants were asked to assume the role of jurors, and to make their decisions accordingly. During the study participants worked individually, and not together as a jury at any stage. On average, between three and six participants were tested during each session, and with several sessions held each week the course of testing lasted almost six weeks. The duration of the

[46] To check the power of the study to reliably detect an effect, we conducted a power analysis using G*Power 3.1. This analysis estimated that the power for a medium effect ($f$ = .25, $\alpha$ = .05, numerator df = 1, groups = 4) was 0.61. See Franz Faul et al, 'Statistical Power Analyses using G*Power 3.1: Tests for Correlation and Regression Analyses' (2009) 41(4) *Behavior Research Methods* 1149.

study was approximately 30 minutes, with the presentation taking approximately 20 minutes to view, and the questionnaire taking approximately 10 minutes to complete.

Images of those involved in the trial were displayed using PowerPoint software, with the transcript presented via speech bubbles containing the content of the court dialogue. The transcript outlined a civil negligence claim based broadly on a case developed by Diamond and Casper,[47] and modified by McKimmie et al.[48] The matter involved a female personal assistant who had incurred significant throat injuries as a consequence of being struck by an unfastened ladder falling from a moving truck. The owners of the vehicle, Southside Painting Company, had been found guilty of negligence due to a failure to ensure that adequate safety standards were in place concerning the transport of tools and equipment on their vehicles. The plaintiff was suing the defendant company for damages resulting from loss of income (ie due to her inability to work), and for pain and suffering. Accordingly, the role of the participants, as mock jurors, in this trial was to determine an appropriate amount of monetary damages to award the plaintiff to compensate her for her losses and the pain and suffering incurred.

During the case, expert witnesses testified on behalf of both the plaintiff and the defendant in regard to the extent of the plaintiff's injuries. These assessments were made based on a Video Strobe Voice Evaluation, a medical procedure that involves the examination of the patient's throat and vocal chords. Throughout all four conditions, the defence presented their own expert witness. The expert witness was a male ear, nose and throat specialist. The defendant's expert claimed that the plaintiff required a maximum of four months to recover from the injuries sustained. Consequently, the defence contended the damages awarded should not exceed $40,000, comprising $20,500 in loss of earning capacity with an additional $19,500 as compensation for pain and suffering. In contrast, the plaintiff's expert witness deemed the necessary period of recovery to be at least 14 months. On this basis, the plaintiff requested an award amount of $191,500, reflecting a loss of $79,500 in earning capacity, in addition to a further $112,000 for pain and suffering.

### *(a) Manipulation of Gender Orientation of the Expert's Role*

The roles for the experts in the case were selected based on the pilot study. The gender orientation of the expert's role was manipulated by varying which occupation the plaintiff's expert was described as having. The role of speech

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47 Shari S Diamond and Jonathan D Casper, 'Blindfolding the Jury to Verdict Consequence: Damages, Experts, and the Civil Jury' (1992) 26(3) *Law and Society Review* 513.

48 McKimmie et al (n 7).

therapist was used as the female-oriented role, and the role of surgeon was used as the male-oriented role.

### *(b) Manipulation of Expert Gender*

The plaintiff expert's gender was manipulated by using images of each witness and male or female-oriented names, Dr James Willis and Dr Judy Willis. The photographs were composites of faces selected from the A-FACE database[49] and images of volunteers appropriately dressed in male or female business attire. Body and face combinations were constructed for the expert (male or female) and other actors in the courtroom simulation. In order to avoid the confounding influence of other factors that might be triggered by differences in the visual appearance of the expert, the male and female face for the expert were matched on characteristics such as perceived likeability, attractiveness and trustworthiness.

### *(c) Post-Presentation Questionnaire*

Following presentation of the case via computer, participants were asked to answer several items assessing their perceptions of the case and the expert. To assess evaluations of the case, participants were asked to indicate the amount of monetary damages they felt was appropriate to award the plaintiff, as well as rating the confidence with which they made this decision, from 1, 'not at all confident', to 9, 'completely confident'. In addition, participants rated the convincingness of both the plaintiff and defendant's case from 1, 'not at all convincing', to 9, 'completely convincing'.

The next measures were designed to measure participants' evaluations of the plaintiff's expert witness, and their testimony. Participants evaluated the testimony of the plaintiff's expert witness on five 9-point semantic differentials. For example, participants indicated whether the testimony of each expert was 'easy to understand–difficult to understand', 'poorly presented–well-presented and persuasive–unpersuasive'. Together, these items formed a composite scale for the evaluation of the plaintiff's expert testimony, with a satisfactory level of reliability demonstrated ($\alpha$ = .66). A similar set of items assessed participants' evaluations of the defence's expert's testimony ($\alpha$ = .68).

The overall evaluations of the plaintiff's expert witness themselves were also assessed using eight 9-point semantic differentials, such as 'trustworthy-untrustworthy', 'incompetent–competent', 'credible–not credible' and 'qualified–unqualified'. As with the evaluative dimensions of the plaintiff's

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49 Blake M McKimmie and Kerry Chalmers, 'Academic Facial Attributes Catalogue' (Internet Database, 2002) <https://research.psy.uq.edu.au/tools/a-face/>.

expert's testimony, these eight items were combined to form a scale assessing the impressions of the plaintiff's expert. The reliability coefficient of the resulting scale indicated a sufficient level of internal consistency ($\alpha = .80$). A similar set of items assessing evaluations of the defence expert was also reliable ($\alpha = .78$). Participants were also asked to make an overall judgement about each expert's level of expertise on a 9-point scale from 1, 'very low', to 9, 'very high'.

Manipulation checks were also included in the questionnaire after the main dependent measures. To check the manipulation of expert gender, participants were asked to indicate whether the plaintiff's expert in the case they had read was either a male or a female. To check the manipulation of role gender-orientation, participants indicated the extent to which the professions of surgery and speech therapy were considered to be predominantly male-based or predominantly female-based on a 9-point scale from 1, 'male-based', to 9, 'female-based'. Lastly, participants were debriefed, given credit for participation, and thanked for their involvement in the study.

## III Results

### A *Manipulation Checks*

The manipulation of expert gender was successful, as all participants correctly answered the question regarding the gender of the plaintiff's expert witness in the presentation of the court transcript they viewed. In order to determine whether the manipulation of expert role gender-orientation was successful, participants were asked questions regarding their perceptions of the gender-orientations of the professions of speech therapist and surgeon both in terms of being male-oriented and in terms of being female-oriented. These scores were analysed by a 2 (expert gender) by 2 (target profession) by 2 (expert role gender-orientation) mixed-models ANOVA with repeated measures on the last factor.[50] Consistent with the effective manipulation of expert role gender-orientation, there was a significant main effect of target profession, such that participants perceived speech therapy to be a more female-based profession ($M = 6.01$, $SD = 1.32$) than surgery ($M = 3.42$, $SD = 1.11$), $F(1, 77) = 171.66$, $p < .001$. Follow-up one-sample t-tests comparing these means against the scale mid-point indicated that speech therapy was viewed as being significantly female-based, $t(81) = 41.50$, $p < .001$, and surgery as being significantly male-based, $t(80) = 27.85$, $p < .001$. There was also a significant main effect of expert gender, with participants in the female

[50] By including measures of both the degree of male- and female-orientation for each of the two expert roles, we were able to test for the repeated measures factor of relative gender-role orientation of each expert role as the third factor in this design.

expert conditions viewing both professions as being significantly more female-oriented ($M$ = 5.01, $SD$ = 0.82) than participants in the male expert conditions ($M$ = 4.41, $SD$ = 0.76), $F(1, 77) = 12.15$, $p = .001$.

## B *Main Analyses*

Participants' evaluations of the plaintiff's expert, convincingness, expertise and testimony were analysed via a 2 (expert gender) by 2 (expert role gender-orientation) multiple analysis of variance ('MANOVA').[51] The same analysis was also conducted for the ratings associated with the defence's expert. The interaction between expert gender and expert role was significant at the multivariate level for participants' perceptions of the plaintiff's expert, $F(4, 75) = 3.51$, $p = .011$. There were no other significant multivariate effects, all $F$'s < .22. The interaction was primarily driven by the single item measure assessing the expert's expertise, $F(4, 78) = 3.94$, $p = .051$, $\eta^2 = .05$, and the evaluation of the expert's testimony, $F(4, 78) = 5.19$, $p = .025$, $\eta^2 = .06$. Simple effects for the measure of expertise indicated that while there were no differences for the male expert, $F(1, 78) = 0.44$, $p = .509$, $\eta^2 = .01$, there was a significant simple effect for the female expert, $F(1, 78) = 4.64$, $p = .030$, $\eta^2 = .06$, who was rated as having greater expertise in the female-gendered role compared to the male-gendered role (see Table 2 in the Appendix). Despite the significant univariate interaction for the measure assessing participants' evaluations of the prosecution expert's testimony, there were no significant simple effects — the difference between the two roles for the female expert was the greatest, $F(1, 78) = 3.26$, $p = .075$, $\eta^2 = .04$ (see Table 2 in the Appendix). A similar analysis for the defence expert indicated that there were no significant multivariate or univariate effects (all $F$'s < 0.66).

The next analysis attempted to predict a case-relevant outcome, namely, the amount of damages recommended by participants. Given that the evaluations of the two experts and their testimony were conceptually related, a correlational analysis was conducted first to ascertain whether these potential predictors should be combined into composite measures for each expert. As can be seen in Tables 3 and 4 in the Appendix to this article, there were moderate to high correlations between the ratings for each of the experts, and so a composite was formed for the measures assessing the ratings of the plaintiff expert ($\alpha = .82$) and the defence expert ($\alpha = .75$). Next, damages were regressed onto both of those composite ratings. The overall model was significant, $F(2, 79) = 14.08$, $p < .001$, $R^2 = .26$. Both of the composites were significant predictors of damage recommendations, with higher scores on the ratings of the plaintiff expert being

[51] In a multiple analysis of variance, multiple dependent measures are analysed at the same time, which allows more general effects to be detected.

associated with higher damage awards ($B$ = 14,123.49, $SE$ = 4,738.80, β = .29, $t$ = 2.98, $p$ = .004), and higher scores on the ratings of the defence expert being associated with lower damage awards ($B$ = -17,817.93, $SE$ = 4,568.60, β = -.38, $t$ = -3.90, $p$ < .001).

## IV Discussion

It was expected that participants would evaluate the expert and the expert's testimony more positively when the expert's gender matched the gender-orientation of their role (ie the type of expert they were). While analysis of the set of ratings of the plaintiff expert and expert testimony suggested that, somewhat in support of the first prediction, there was an interaction between the expert's gender and the gender orientation of their role, this effect was primarily driven by perceptions that the expert had expertise and evaluations of the expert's testimony. Participants' perceptions of both experts involved in the case significantly predicted their recommended damage awards.

As expected, there was an interaction between the gender of the plaintiff expert and the gender-orientation of their role at the multivariate level across the different evaluations of the expert and the expert's testimony. This effect was largely due to differences on the measures assessing the perceived expertise of the plaintiff's expert, and the evaluation of the expert's testimony. The nature of the effect was somewhat consistent with predictions when considering the female expert. For this expert, participants thought that she had greater expertise when she occupied a female-oriented role compared to when she occupied a male-oriented role. There were no such differences for the male expert, which is consistent with prior research that has also found an asymmetry in how expert gender influences mock jurors' perceptions of experts.[52] In that prior research, the asymmetry was attributed to generally favourable evaluations of male experts regardless of how they gave their testimony, whereas in the current study, it was female experts occupying female-oriented roles who were perceived as having the highest expertise. Female experts in male-oriented roles received the lowest ratings of expertise (although this was not statistically lower). Such a pattern of responses is consistent with Eagly and Karau's[53] findings in relation to female leaders in the workplace — they are devalued when occupying traditionally male roles. It is also consistent with research on benevolent sexism,[54] which suggests

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52 McKimmie et al (n 14); Schuller et al (n 39).

53 Eagly and Karau (n 8).

54 Peter Glick and Susan T Fiske, 'The Ambivalent Sexism Inventory: Differentiating Hostile and Benevolent Sexism' (1996) 70(3) *Journal of Personality and Social Psychology* 491.

that women are particularly rewarded when acting in ways consistent with traditional gender stereotypes but punished when deviating from them. Other work suggests that men, but not women, in gender-incongruent roles actually experience a number of advantages in the workplace, and so an asymmetry in evaluations may reflect a difference in status between the two genders.[55] Interestingly, such an explanation does not fit with other findings that men tend to be seen as more deviant and are therefore evaluated more negatively when occupying female-oriented health practitioner roles.[56]

It is worth noting that participants' recommendations for damages awards did not vary as a function of expert role nor expert gender. Such a finding is at odds with prior studies that measured the impact of the expert witness via damages awards.[57] That earlier research focussed on the domain of the case itself, whereas the present study examined the way in which the role of the expert might influence how the expert was perceived by participants. It is possible that recommendations for damages may be more closely tied to perceptions about content domain knowledge inferred from the domain of the case and the expert's gender.

Another possible explanation for the lack of differences in damages awards is that the testimony in the case used for this study might not have been complex enough, as the effect of gendered stereotypes should be most marked when participants have difficulty understanding the content of the case.[58] While possible, if this were the case, then it would not be expected that evaluations of the expert would predict damages awards — recommendations for damages should have been based on the arguments put forward by each expert. The regression analyses suggest that this was not the case, however, and participants' ratings of both experts influenced the amount of damages they recommended.

A further explanation for why significant differences were observed on these evaluative measures, but not for damages awards, may be that the dimensions upon which the experts were evaluated were more easily associated with participants' stereotypic beliefs. Specifically, the adjectives used to measure the participants' evaluations of the expert testimony (eg objective, trustworthy, believable) may have more closely related to attributes characteristically used to describe gender stereotypes — males as aggressive and independent, for example,

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55 Marlies E Ott, 'Effects of the Male-Female Ratio at Work: Policewomen and Male Nurses' (1989) 13(1) *Psychology of Women Quarterly* 41.

56 Susan Hesselbart, 'When Doctors Win and Male Nurses Lose: A Study of Sex Role and Occupational Stereotypes' (1977) 4(1) *Sociology of Work and Occupations* 49.

57 McKimmie et al (n 7); Schuller et al (n 7).

58 Chaiken (n 19); Cooper et al (n 3); Petty and Cacioppo (n 18).

and females as sensitive and expressive.[59] Therefore, while the terms used to describe the perceived qualities of both gender stereotypes and social roles map onto the measures evaluating expert testimony, damages as a broad numerical measure had no such relative points of reference. On this point, Mott et al[60] found that mock jurors regarded the nomination of an amount to be the most difficult aspect of their role in the absence of directions.

As is typical of most studies examining the perceptions of mock jurors, the current study was low in ecological validity in that it relied on a fairly low fidelity representation of a trial, included students as participants, and examined individual and not group decisions. Bornstein's[61] review of mock jury simulation studies suggests that both the mode of simulation and the sample included are relatively inconsequential in terms of what can be inferred from simulation research. There appears to be little difference in simulation outcomes when comparing brief written simulations to more realistic live presentations of evidence. Likewise, it is difficult to identify systematic differences in how student samples respond compared to how community samples respond. This latter point is also made in a special issue of *Behavioral Sciences and the Law*.[62] The research on the effect of jury deliberation on individual jurors' decisions is less clear. The influence of peripheral cues may be increased by a diminished sense of responsibility such as social loafing,[63] or by the implicit endorsement of other jurors due to group polarisation.[64] Alternatively, deliberation may encourage the more effortful consideration of relevant case facts, and therefore the use of central modes of processing.[65]

Of perhaps more realistic concern is the low power of the current study and the modest effect sizes that were observed. Given this, perhaps the current study should be considered a preliminary investigation of the possible combined influence of expert role and expert gender. Not only that, but the majority of participants were women, and given the gendered nature of the stereotypes about

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59 David J Bergen and John E Williams, 'Sex Stereotypes in the United States Revisited: 1972–1988' (1991) 24(7–8) *Sex Roles* 413.

60 Nicole L Mott, Valerie P Hans and Lindsay Simpson, 'What's Half a Lung Worth? Civil Jurors' Accounts of Their Award Decision Making' (2000) 24(4) *Law and Human Behavior* 401.

61 Brian H Bornstein, 'The Ecological Validity of Jury Simulations: Is the Jury Still Out?' (1999) 23(1) *Law and Human Behavior* 75.

62 William J Caprathe, 'Commentary: Participant Differences and Validity of Jury Studies' (2011) 29(3) *Behavioral Sciences and the Law* 328.

63 Steven J Karau and Kipling D Williams, 'Social Loafing: A Meta-Analytic Review and Theoretical Integration' (1993) 65(4) *Journal of Personality and Social Psychology* 681.

64 Martin F Kaplan and Charles E Miller, 'Judgments and Group Discussion: Effect of Presentation and Memory Factors on Polarization' (1977) 40(4) *Social Psychology Quarterly* 337.

65 Petty and Cacioppo (n 18).

the roles that the expert's occupied, it would be prudent for further research to not only include a higher proportion of men as participants, but also to potentially explore the possible effect of participant gender on how experts are perceived. Further work is needed to more robustly test the hypotheses of this study, and to examine a wider range of cases in which these stereotypes may play a role.

Freckelton et al's[66] study of multiple different types of actual jury cases involving experts across different jurisdictions did suggest that expert witness gender has an influence on jurors' perceptions. As such, there is considerable merit in pursuing the different possible ways that expert gender could bias decisions, and experimental simulations provide an appropriate context for identifying factors that might change how the expert is perceived. By understanding what these factors are and conducting further research on how to minimise the effect of these factors, we will be able to help jurors to better focus on the evidence presented by experts when making their decisions, thereby improving the quality and fairness of jury trials.

[66] Freckelton et al (n 6).

# APPENDIX

| Occupation | Likelihood of being male | Likelihood of being female | Level of status | Level of expertise |
|---|---|---|---|---|
| Speech therapist | 3.56 | 6.78 | 5.30 | 7.00 |
| | (1.62) | (1.80) | (1.35) | (1.59) |
| Surgeon | 7.11 | 3.67 | 8.63 | 7.15 |
| | (1.34) | (1.27) | (0.69) | (2.38) |
| Rehabilitation nurse | 2.89 | 7.33 | 4.48 | 6.11 |
| | (0.93) | (1.18) | (1.67) | (1.83) |
| ENT specialist | 7.07 | 3.78 | 7.85 | 8.26 |
| | (1.14) | (1.27) | (1.23) | (1.13) |

*Table 1 — Means (SD) for the occupations on ratings of likelihood of being male, being female, level of status and expertise*

| | Male expert | | Female expert | |
|---|---|---|---|---|
| | Male role | Female role | Male role | Female role |
| Damages (x $1,000) | 115.31 | 106.24 | 124.40 | 104.89 |
| | (47.93) | (43.16) | (41.73) | (38.91) |
| Plaintiff expert | | | | |
| Convincingness | 6.95 | 7.11 | 7.08 | 6.94 |
| | (1.43) | (1.24) | (0.83) | (1.35) |
| Expertise | 7.86 | 7.63 | 7.50 | 8.22* |
| | (1.06) | (1.07) | (1.29) | (0.73) |
| Evaluation of | 7.32 | 6.98 | 7.07 | 7.27 |
| expert | (1.04) | (1.11) | (0.88) | (1.22) |
| Evaluation of | 7.48 | 7.00 | 6.83 | 7.42 |
| testimony | (0.95) | (1.14) | (1.04) | (1.12) |
| Defence expert | | | | |
| Convincingness | 5.52 | 5.68 | 4.92 | 5.44 |
| | (1.89) | (1.29) | (1.44) | (1.29) |
| Expertise | 7.24 | 7.11 | 7.00 | 6.83 |
| | (1.37) | (0.81) | (6.83) | (1.34) |
| Evaluation of | 5.58 | 5.42 | 5.46 | 5.52 |
| expert | (1.09) | (0.74) | (0.99) | (0.66) |
| Evaluation of | 6.30 | 6.37 | 6.14 | 6.33 |
| testimony | (1.44) | (0.94) | (1.19) | (1.10) |
| *n* | 21 | 19 | 24 | 18 |

Note. *$p < .05$.

*Table 2 — Means (SD) for participants' evaluations of the plaintiff and defence experts*

| | Damages | Convincingness | Expertise | Evaluation |
|---|---|---|---|---|
| Damages | -- | | | |
| Convincingness | .50*** | -- | | |
| Expertise | .19 | .37*** | -- | |
| Evaluation of expert | .28** | .62*** | .52*** | -- |
| Evaluation of testimony | .13 | .59*** | .43*** | .68*** |

*$p < .05$; **$p < .01$; ***$p < .001$.

*Table 3 — Correlations between ratings for the plaintiff's expert and damages*

| | Damages | Convincingness | Expertise | Evaluation |
|---|---|---|---|---|
| Damages | -- | | | |
| Convincingness | -.44*** | -- | | |
| Expertise | -.19 | .29** | -- | |
| Evaluation of expert | -.37*** | .41*** | .40*** | -- |
| Evaluation of testimony | -.30** | .59*** | .44*** | .59*** |

*$p < .05$; **$p < .01$; ***$p < .001$.

*Table 4 — Correlations between ratings for the defence expert and damages*