

William & Mary Law Review

Volume 55 (2013-2014)
Issue 3 *The Civil Jury as a Political Institution*
Symposium

Article 7

March 2014

Embedded Experts on Real Juries: A Delicate Balance

Shari Seidman Diamond

Mary R. Rose

Beth Murphy

Follow this and additional works at: <https://scholarship.law.wm.edu/wmlr>



Part of the [Civil Procedure Commons](#), and the [Constitutional Law Commons](#)

Repository Citation

Shari Seidman Diamond, Mary R. Rose, and Beth Murphy, *Embedded Experts on Real Juries: A Delicate Balance*, 55 Wm. & Mary L. Rev. 885 (2014), <https://scholarship.law.wm.edu/wmlr/vol55/iss3/7>

Copyright c 2014 by the authors. This article is brought to you by the William & Mary Law School Scholarship Repository.
<https://scholarship.law.wm.edu/wmlr>

EMBEDDED EXPERTS ON REAL JURIES:
A DELICATE BALANCE[†]

SHARI SEIDMAN DIAMOND,* MARY R. ROSE** &
BETH MURPHY***

ABSTRACT

“Experts” appear in the modern American courtroom on the jury as well as in the witness box, posing a dilemma for the legal system by offering a potentially valuable resource and an uncontrolled source of influence. Courts give ambiguous guidance to jurors on how they should handle their expertise in the deliberation room. On the one hand, jurors are told that they should “decide what the facts are from the evidence presented here in court.” By direct implication, then, jurors should not use outside information to evaluate the evidence. Jurors are also told, however, that they should “consider all of the evidence in the light of reason, common sense, and experience.” And indeed, all decision makers, including jurors, are unavoidably influenced by their own backgrounds and experiences as they evaluate evidence and reach decisions.

In this Article we examine the actual and desirable behavior during deliberations of jurors with specialized expertise. We draw on three sources to assess how often citizens with specialized knowledge serve as jurors, how they behave when they do, and how legal

[†] This research was supported by early research grants from the State Justice Institute (Grant SJI-97-N-247), the National Science Foundation (Grant SBR9818806), and continued funding from the American Bar Foundation and Northwestern University Law School. The videotaping project was made possible by the interest of the Arizona judiciary in examining juries with an eye toward optimizing the jury trial. For more detail on the background of the study, see Diamond et al., *infra* note 61.

* Howard J. Trienens Professor of Law and Professor of Psychology, Northwestern University School of Law and Research Professor, American Bar Foundation.

** Associate Professor of Sociology, University of Texas at Austin.

*** Research Social Scientist, American Bar Foundation.

professionals view the appropriateness of the contributions juror-experts may make. Our sources include: (1) a survey of 167 experienced trial attorneys who reported on their recent trial experience with juror "experts"; (2) the actual deliberations of jurors in fifty civil trials from the Arizona Jury Project, which revealed how real jurors use their expertise in the jury room; and (3) a survey of 128 judges and attorneys who evaluated examples of "expert" juror behavior.

Some scholars suggest that jurors with specialized expertise should be excused for cause. In light of our findings, we conclude that such drastic intervention is unwarranted and would inappropriately undermine the increasing heterogeneity on the jury that the elimination of occupational exemptions has worked to promote. We instead advocate a tempered response to the growing presence of juror expertise in the jury room.

TABLE OF CONTENTS

INTRODUCTION 888

I. STANDARD LEGAL CONTROLS ON SPECIALIZED JUROR KNOWLEDGE 892

II. SPECIALIZED JUROR KNOWLEDGE IN THE MODERN JURY TRIAL 898

 A. *Trial Attorney Survey* 899

 B. *The Arizona Jury Project* 902

 1. *The Background of the Project* 902

 2. *Selection of Jurors and Cases* 903

 3. *Data Collection and the Final Sample* 903

 4. *The Data* 904

 a. *The Trials* 904

 b. *Data from the Deliberations* 904

 c. *Post-trial Questionnaires* 905

 5. *Jurors and Their Expertise* 905

III. HOW SHOULD JURORS HANDLE SPECIALIZED KNOWLEDGE? 926

IV. WHAT (IF ANYTHING) SHOULD BE DONE ABOUT JUROR-EXPERTS? 929

“[W]hile the jury may leaven its deliberations with its wisdom and experience, in doing so it must not bring extra facts into the jury room.”

—Judge Irving Goldberg¹

INTRODUCTION

Juries have become increasingly representative over time. No longer are juries the exclusive domain of white male property-owners deemed (by a court official) to be of good character.² Although the modern jury is not fully representative of the community, changes in eligibility requirements and methods of summoning jurors have made the modern jury far more heterogeneous than it has ever been.³ Much of the recent push for juries representing a cross-section of the community has focused on removing racial and gender restrictions, albeit with mixed success,⁴ but jury reform efforts have also led to the elimination of most occupational exemptions.⁵ If jury service is viewed as a responsibility and opportunity that all able-bodied citizens should share, it is hard to justify excluding citizens from service based on occupation. Consistent with this view, jurors with specialized occupational expertise are now eligible to appear on the jury as well as in the witness box

1. *United States v. McKinney*, 429 F.2d 1019, 1023 (5th Cir. 1970).

2. See Neil Guzy, *Citizen Participation in Juries*, in *THE SOCIAL HISTORY OF CRIME AND PUNISHMENT IN AMERICA: AN ENCYCLOPEDIA* 255, 255 (Wilbur R. Miller ed. 2012) (describing the “key man” system of jury selection, whereby judicial commissioners chose white property-owning males believed to possess “the appropriate intellect and character”).

3. See GREGORY E. MIZE, PAULA HANNAFORD-AGOR & NICOLE L. WATERS, NATIONAL CENTER FOR STATE COURTS, *THE STATE-OF-THE-STATES SURVEY OF JURY IMPROVEMENT EFFORTS: A COMPENDIUM REPORT* (2007), available at <http://www.ncsc-jurystudies.org/~media/Microsites/Files/CJS/SOS/SOSCompendiumFinal.ashx>; Mary R. Rose, *Access to Juries: Some Puzzles Regarding Race and Jury Participation*, 12 *SOC. CRIME, LAW & DEVIANCE* 119, 121-22 (2009); see also NAT'L CTR. FOR STATE COURTS, *HOW THE PUBLIC VIEWS THE STATE COURTS: A 1999 NATIONAL SURVEY* (1999). This report was presented at the National Conference on Public Trust and Confidence in the Justice System on May 14, 1999, in Washington, D.C.

4. See Mary R. Rose & Jeffrey B. Abramson, *Data, Race, and the Courts: Some Lessons on Empiricism from Jury Representation Cases*, 2011 *MICH. ST. L. REV.* 911, 915; Rose, *supra* note 3, at 122.

5. See Joanna Sobol, *Hardship Excuses and Occupational Exemptions: The Impairment of the “Fair Cross-Section of the Community”*, 69 *S. CAL. L. REV.* 155, 164-65 (1995).

and, as the data we present reveal, they are appearing not only in jury venires but also on juries.⁶ These jurors create a dilemma for the legal system, offering a potentially valuable resource and an uncontrolled source of influence.

Other changes in the trial intersect with the potential for specialized juror expertise. Evidence in the modern American jury trial increasingly includes scientific, technical, or other specialized knowledge.⁷ The trial court plays the role of gatekeeper when a party proposes to have an expert testify, vetting the expert's credentials and the nature of the testimony being offered.⁸ Experts permitted to appear as witnesses answer only legally relevant questions posed in open court and are subject to cross-examination by opposing counsel.⁹ Jurors often receive a special instruction on how to evaluate expert testimony.¹⁰ Yet not all nonlegal expertise that enters the jury room may come from the witness stand. Nor may all legal expertise come from the judge. Until recently, most states excluded from jury service individuals in particular occupations (e.g., physicians, lawyers, clergy),¹¹ but that has changed.¹² In

6. See *infra* Part II; see, e.g., Alexandra Stevenson, *Jury of 7 Women and 5 Men Chosen for Martoma Trial*, N.Y. TIMES DEALBOOK (Jan. 9, 2014, 4:33 PM), <http://dealbook.nytimes.com/2014/01/09/jury-of-7-women-and-5-men-chosen-for-martoma-trial> (reporting that the jury selected for the insider-trading trial of a former hedge fund manager included “an insurance underwriter,” a law-school graduate employed by an accounting firm, and “an employment and labor lawyer”).

7. See Damian Schofield & Ken Fowle, *Technology Corner: Visualising Forensic Data: Evidence (Part 1)*, 8 J. DIGITAL FORENSICS, SECURITY & L. 73 (2013).

8. For example, under Federal Rule of Evidence 702, the party offering the expert must show that the expert has “scientific, technical, or other specialized knowledge [that] will assist the trier of fact to understand the evidence or to determine a fact in issue.” FED. R. EVID. 702. Further, the testimony offered must be “based upon sufficient facts or data,” and must be “the product of reliable principles and methods.” *Id.* Finally, the expert must have “applied the principles and methods reliably to the facts of the case.” *Id.*

9. See FED. R. EVID. 402, 611.

10. See, e.g., STATE BAR ARIZ., REVISED ARIZONA JURY INSTRUCTIONS (CIVIL) 8 (5TH ED. 2013) [hereinafter ARIZONA JURY INSTRUCTIONS] (“A witness qualified as an expert by education or experience may state opinions on matters in that witness’s field of expertise, and may also state reasons for those opinions. Expert opinion testimony should be judged just as any other testimony. You are not bound by it. You may accept it or reject it, in whole or in part, and you should give it as much credibility and weight as you think it deserves, considering the witness’s qualifications and experience, the reasons given for the opinions, and all the other evidence in the case.”).

11. Sobol, *supra* note 5, at 165 n.38.

12. See AM. BAR ASS’N, PRINCIPLES FOR JURIES AND JURY TRIALS 54, 61 (2005), *available*

recent years, states have reduced their occupational exemptions; over half of all states now have no automatic exemptions.¹³ The result is that venires are more likely to include prospective jurors who have specialized expertise.

According to conventional wisdom, even if jurors with relevant occupational expertise appear in the venire, they are likely to be removed. If the judge does not excuse such jurors, the attorneys will use peremptory challenges during jury selection to remove all jurors whose backgrounds indicate particular expertise relevant to the case. Nurses will be excused from cases involving medical claims; engineers will be removed by peremptory challenge if one of the parties plans to introduce technical engineering testimony; attorneys will inevitably be excused. In fact, this picture turns out to be inaccurate. As we show in two studies reported below, the modern American jury frequently includes jurors with relevant occupational expertise. Moreover, some successful attorneys with extensive trial experience may actually welcome these embedded experts to serve on the juries they select.

Jurors typically receive no guidance on how their *own* expertise, as opposed to *witness* expertise, should be handled. On the one hand, jurors are told, “You will decide what the facts are from the evidence presented here in court.”¹⁴ By direct implication, jurors should not use outside information to evaluate the evidence. Jurors are also told, however, that they should “[c]onsider all of the evidence in the light of reason, common sense, and experience.”¹⁵

at http://www.americanbar.org/content/dam/aba/migrated/2011_build/american_jury/final_commentary_july_1205.authcheckdam.pdf (advocating the elimination of all automatic excuses or exemptions, noting that twenty-nine states and the District of Columbia have eliminated all automatic excuses or exemptions, and noting that such eliminations in New York increased first-time juror turnout from 33 percent to over 50 percent).

13. *Id.*; Shauna M. Strickland et al. eds., STATE COURT ORG., <http://www.ncsc.org/sco> (click “List of Tables”; select “Trial Juries: Exemptions, Terms of Service, and Payment”; select “Exemptions and Terms of Service”). For example, as of July 2006, Indiana eliminated all automatic exemptions. Previously, licensed dentists and veterinarians were excused, as well as members in active service of the armed forces, elected or appointed governmental officials, honorary military staff officers appointed by the governor, members of the board of school commissioners of the city of Indianapolis, and members of police or fire departments. Ind. Pub. L. No. 1-2005 § 216 (2005) (amending IND. CODE § 33-28-4-8).

14. ARIZONA JURY INSTRUCTIONS, *supra* note 10, at 5.

15. *Id.* at 7.

Indeed, all decision makers, including jurors, are unavoidably influenced by their own backgrounds and experiences as they evaluate evidence and reach decisions.¹⁶ Moreover, one valuable characteristic of the jury is the mixture of experiences that its members bring to the task of resolving conflicting and uncertain claims.¹⁷ What is less clear is the role that these embedded “juror-experts”¹⁸ should play in deliberations and how other jurors should consider the purported knowledge of these jurors who come to the trial with specialized expertise. In this Article we explore both the desirable range of behavior by jurors with specialized expertise and the actual behavior of jurors with specialized expertise during jury deliberations. Based on this investigation, we consider the appropriate response of the legal system to juror expertise.

We begin in Part I by reviewing the variety of approaches courts take when they learn that jurors have specialized knowledge that may impact jury deliberations. In Part II we present two studies that reveal how pervasive specialized juror knowledge has become in the modern jury trial and provide evidence tracking the behavior of these juror-experts during deliberations. In Part III we consider what behavior is desirable and attainable when embedded experts are seated on a jury. Finally, in Part IV we suggest an approach to

16. See Anne Locksely et al., *The Ambiguity of Recognition Memory Tests of Schema Theories*, 16 *COGNITIVE PSYCHOL.* 421 (1984); Charles G. Lord, Lee Ross & Mark R. Lepper, *Biased Assimilation and Attitude Polarization: The Effects of Prior Theories on Subsequently Considered Evidence*, 37 *J. PERSONALITY & SOC. PSYCHOL.* 2098 (1979); Vicki L. Smith & Christina A. Studebaker, *What Do You Expect?: The Influence of People's Prior Knowledge of Crime Categories on Fact-Finding*, 20 *LAW & HUM. BEHAV.* 517 (1996); Robert P. Vallone, Lee Ross & Mark R. Lepper, *The Hostile Media Phenomenon: Biased Perception and Perceptions of Media Bias in Coverage of the Beirut Massacre*, 49 *J. PERSONALITY & SOC. PSYCHOL.* 577 (1985).

17. See Samuel R. Sommers, *On Racial Diversity and Group Decision Making: Identifying Multiple Effects of Racial Composition on Jury Deliberations*, 90 *J. PERSONALITY & SOC. PSYCHOL.* 01. 597, 606 (2006) (demonstrating more thorough deliberations by racially heterogeneous mock juries); cf. CASS R. SUNSTEIN, DAVID SCHKADE, LISA M. ELLMAN & ANDRES SAWICKI, *ARE JUDGES POLITICAL?* 148-49 (2006) (arguing that politically diverse judicial panels increase the likelihood of effective whistleblowing while single party panels tend to go to extremes).

18. We refer to these jurors as “juror-experts” because of their specialized knowledge relative to others on the jury. The term “expert” is not used to imply that the juror would qualify to testify as an expert.

juror-experts that will avoid overreaction to a useful and democratic development in the jury system.

I. STANDARD LEGAL CONTROLS ON SPECIALIZED JUROR KNOWLEDGE

We begin by examining how courts typically delineate the boundaries of appropriate juror behavior when a juror possesses knowledge based on information gleaned outside the trial. In evaluating court responses, it is important to recognize that courts are reluctant to entertain any challenge to the verdict of a jury based on what has occurred during jury deliberations.¹⁹ The rationales are that deliberations should be free of constraint and insulated from outside pressure and that the stability and finality of verdicts should be protected.²⁰ Nonetheless, when reliable evidence emerges that jurors have sought information from external sources during the trial—whether from people, newspapers, the Internet, or dictionaries—trial courts generally view that juror behavior as misconduct and may order a new trial. Similarly, if a juror inspects the scene of an accident or the crime at issue in the case, courts agree that the juror has not fulfilled the obligation to draw solely on the evidence presented at trial.²¹ Although this behavior reflects juror efforts to understand the evidence and to reach well-informed verdicts, these actions are out of bounds and can be understood as explicit violations of the court’s instructions to the jury. Reflecting this prohibition on gathering extra-trial information, Federal Rule of Evidence 606(b) recognizes evidence of “extraneous prejudicial information [that] was improperly brought to the jury’s attention” as a basis for inquiry into the validity of a verdict.²² This inquiry is an exception to the usual protection

19. See James W. Diehm, *Impeachment of Jury Verdicts: Tanner v. United States and Beyond*, 65 ST. JOHN’S L. REV., 389, 427-28 (1991).

20. See *id.* at 393.

21. 24 AM. JUR. 2D *Proof of Facts* 633 § 4 (2013).

22. FED. R. EVID. 606(b) (“Upon an inquiry into the validity of a verdict or indictment, a juror may not testify as to any matter or statement occurring during the course of the jury’s deliberations or to the effect of anything upon that or any other juror’s mind or emotions as influencing the juror to assent to or dissent from the verdict or indictment or concerning the juror’s mental processes in connection therewith. But a juror may testify about (1) whether

extended to jury deliberations that limits the use of juror testimony to impeach a jury verdict.²³

When the specialized knowledge injected into deliberations comes from the personal experience of a juror obtained before rather than during trial, courts vary substantially in their response. Texas, for example, construes outside influence narrowly, requiring that it must come from a non-juror.²⁴ Thus, “[e]ven a juror’s injection of his own personal experiences, knowledge, or expertise will not be considered as an ‘outside influence’ because such is said to emanate from inside the jury.”²⁵ Other courts analyze the nature of the particular expertise but broadly construe the range of experience that jurors may contribute during deliberations. The Arizona Court of Appeals, characterizing a juror’s common sense and experience to include expertise in particular subjects, found that a doctor’s knowledge about cocaine and alcohol-induced blackouts was not extrinsic information and thus did not warrant relief if used during deliberations.²⁶ Similarly, the New Mexico Supreme Court denied a new trial to a defendant in an alleged homicide, concluding that an engineer on the jury had not introduced extrinsic evidence when he used his knowledge of physics and probability to calculate probabili-

extraneous prejudicial information was improperly brought to the jury’s attention, (2) whether any outside influence was improperly brought to bear upon any juror, or (3) whether there was a mistake in entering the verdict onto the verdict form. A juror’s affidavit or evidence of any statement by the juror may not be received on a matter about which the juror would be precluded from testifying.”).

23. See Jason R. Mudd, Note, *Liberalizing the Mansfield Rule in Missouri: Making Sense of the Extrinsic Evidence Exception after Trans v. Stone*, 69 MO. L. REV. 1, 1 (2004) (“Traditionally, courts have been very reluctant to allow jurors to impeach their own verdicts.”).

24. See TEX. R. EVID. 606(b) (permitting a juror to testify only concerning “(1) whether any outside influence was improperly brought to bear upon any juror; or (2) to rebut a claim that the juror was not qualified to serve”). Texas courts have interpreted “outside influence” to include only information not in evidence that has come from a nonjuror. *Durbin v. Dal-Briar Corp.*, 871 S.W.2d 263, 272 (Tex. Ct. App. 1994) (“‘Outside influence’ means a force external to the jury and its deliberation.”); see also *Crowson v. Kan. City S. Ry. Co.*, 11 S.W.3d 300, 305 (Tex. Ct. App. 1999).

25. *Franks v. State*, 90 S.W.3d 771, 779-800 (Tex. Ct. App. 2002) (citing *Soliz v. Saenz*, 779 S.W.2d 929, 932 (Tex. Ct. App. 1989)).

26. *State v. Aguilar*, 818 P.2d 165, 167 (Ariz. Ct. App. 1991); see also *State v. Dickens*, 926 P.2d 468, 483 (Ariz. 1996) (holding that juror mechanic’s statement that defendant’s truck could not have overheated because there was no evidence that the motor was rusty was not extrinsic information improperly brought into the jury room).

ties that contradicted the testimony of the defense expert on the likelihood that the death was an accident.²⁷ Other courts have found that a party waived the right to object to a juror's use of occupationally based expertise during deliberations by failing to exercise a peremptory challenge to remove that juror during jury selection.²⁸

In contrast, some courts have responded to evidence that a juror employed specialized knowledge by characterizing the behavior as juror misconduct. In light of that determination, the court must then decide whether the behavior was harmless or whether it warrants a new trial.²⁹ When courts do examine the nature of the expertise employed and its likely impact during deliberations, their analyses reveal the difficulty in balancing the value of the juror's contribution against its invisibility to the parties and the consequent lack of control that results. Thus, in *State v. Scott*, during deliberations a Marine juror used his expertise with weaponry and ammunition to question evidence presented at trial.³⁰ The court determined that his discussion of the lack of penetrating power of reloaded ammunition "extended beyond common knowledge [and] into specialized expertise."³¹ Because the juror's contribution during deliberations effectively explained the conflict between the experts' theories in the State's favor without giving the defendant an opportunity to respond, the court found that it was misconduct that injected specialized extrinsic evidence into deliberations and warranted a new trial.³²

The ambivalence of courts faced with evidence that jurors have employed their specialized experience during deliberations was most poignantly demonstrated in *People v. Maragh*.³³ A New York trial court was presented with evidence that two nurses on a jury had

27. *State v. Mann*, 39 P.3d 124, 132-33 (N.M. 2002).

28. *See, e.g., Grotemeyer v. Hickman*, 393 F.3d 871 (9th Cir. 2004); *State v. Weaver*, 917 So. 2d 600, 614 (La. Ct. App. 2005); *Richards v. Overlake Hosp. Med. Ctr.*, 796 P.2d 737, 743 (Wash. App. 1990).

29. *See Hill v. Lagrand Indus. Supply Co.*, 91 P.3d 768, 774 (Or. Ct. App. 2004) (holding that alleged misconduct did not require a new trial, amounted to no more than "oral misconduct," and did not amount to obstruction of justice).

30. *See State v. Scott*, No. 39251-4-I, 1998 WL 13013, at *2-3 (Wash. Ct. App. 1998).

31. *Id.* at *3.

32. *Id.*

33. 729 N.E.2d 701 (N.Y. 2000).

influenced the verdict by providing “non-evidentiary assessments regarding the volume of blood loss necessary to cause ventricular defibrillation.”³⁴ Expert testimony had disputed the cause of death. The prosecution argued that the defendant had repeatedly punched his girlfriend in the abdomen, causing substantial blood loss that resulted in death.³⁵ This theory relied on expert testimony that the cause of death was blunt force trauma to the abdomen, with massive internal bleeding.³⁶ Defense experts testified that the reported blood loss was inadequate to cause death and found that the ventricular fibrillation and congested blood vessels noted in the autopsy report “were consistent with death from an air embolism or other cardiac event” rather than with death from a loss of blood.³⁷ Post-trial hearings revealed that one of the two nurse-jurors told the other jury members that the volume of blood loss was sufficient to cause ventricular fibrillation resulting in death.³⁸ The other nurse-juror “performed personal estimations of the blood volume loss and shared them with the rest of the jury.”³⁹ The jury convicted and the trial court granted a new trial on grounds of juror misconduct.⁴⁰

The Appellate Division reversed, based in part on a finding that the defense had waived any objection because of what it had learned about the nurses during jury selection.⁴¹ A further appeal to New York’s highest court resulted in a reinstatement of the trial court’s order directing a new trial.⁴² In a unanimous opinion, the New York Court of Appeals acknowledged that “[g]enerally, a jury verdict may not be impeached by probes into the jury’s deliberative process.”⁴³ Nonetheless, the court found a showing of improper influence that warranted an exception to the general rule and ordered a new trial based solely on the post-trial hearing indicating that the nurse-jurors had improperly used their professional expertise to insert

34. *Id.* at 703.

35. *Id.* at 702.

36. *Id.*

37. *Id.* at 702-03.

38. *Id.* at 703.

39. *Id.*

40. *Id.* at 702.

41. *People v. Maragh*, 691 N.Y.S.2d 918, 918-19 (N.Y. App. Div. 1999).

42. *Maragh*, 729 N.E.2d 701, 701 (N.Y. 2000).

43. *Id.* at 703.

medical opinions regarding material issues into the deliberation process.⁴⁴ The court rejected the notion that voir dire can “immunize juror misconduct at the deliberation stage.”⁴⁵ While characterizing the jurors’ behavior as misconduct, the court acknowledged the modern trend toward reducing professional exemptions from jury service and the value of having professional individuals contribute their “wisdom and life experiences to the deliberative process.”⁴⁶ The court also admitted that “[i]t would be unrealistic to expect jurors to shed their life experiences in performing this important civic duty just because they are professionals.”⁴⁷

Maragh palpably reflects the ambivalence of the legal system about juror expertise, expressed as courts strive to provide guidance and support competent jury performance, while at the same time exercising restraint and avoiding interference with the deliberations of a valued democratic institution. The result is a lack of clarity reflected in the various “rules” courts purport to use in drawing the distinction between legitimate use of specialized knowledge and illegitimate use. The following is a sampling of these “rules”:

- (1) Juror background knowledge is permitted up to the point at which it would be considered “specialized knowledge” and hence would require the testimony of an expert witness instead of a lay witness under Rules 701 and 702.⁴⁸

44. *Id.* at 703-05.

45. *Id.* at 706.

46. *Id.* at 705 (citing Judith S. Kaye, *A Judge’s Perspective on Jury Reform from the Other Side of the Jury Box*, 36 JUDGES’ J., Fall no. 4, 1997, at 21).

47. *Id.*

48. Compare *State v. Briggs*, 776 P.2d 1347, 1355-57 (Wash. Ct. App. 1989) (finding juror misconduct when a juror did not disclose his personal experience with speech problems when questioned about the general topic on voir dire and then discussed that experience with other jurors in deliberations), and *State v. Scott*, 89 Wash. App. 1064, No. 3925-1-4-I, 1998 WL 130013, at *2-3 (Wash. Ct. App. 1998) (finding juror misconduct when a juror who revealed his military training during voir dire did not disclose his specialized knowledge about ammunition because he was not specifically asked about it, and then discussed it with other jurors in deliberations), with *Richards v. Overlake Hosp. Med. Ctr.*, 796 P.2d 737, 743 (Wash. Ct. App. 1990) (finding no juror misconduct when a juror with medical training that was revealed during voir dire used specialized knowledge about the potential cause of a birth defect to interpret evidence admitted at trial). See generally FED. R. EVID. 701; FED. R. EVID. 702.

(2) “Jurors may draw inferences ... where such inferences are within the common experience of the average person” and not where the inferences are outside common knowledge.⁴⁹

(3) Jurors “may not validly render a verdict on the particular knowledge of individual jurors.”⁵⁰

(4) “Jurors may rely on their common sense and life’s experience during deliberations. This knowledge may include expertise that a juror may have on a certain subject.”⁵¹

(5) If a juror’s assertions merely reflect evidence and arguments presented in the trial, they are less egregious than other juror actions that warrant a new trial.⁵²

(6) If a juror’s legal knowledge is not specific to the factual circumstances presented in the case, that knowledge is not prejudicial extraneous information.⁵³

(7) “Jurors may use their background, including professional and educational experiences, to inform their deliberations so long as they do not introduce legal content or specific factual information learned from outside the record.”⁵⁴

49. *Sanders v. Kuna Joint Sch. Dist.*, 876 P.2d 154, 157 (Idaho Ct. App. 1994) (holding that knowledge of the properties of specialized running shoes versus other types of footwear is not common knowledge).

50. *Reed v. Cent. Main Power Co.*, 172 A. 823, 826 (Me. 1934).

51. *State v. Heitkemper*, 538 N.W.2d 561, 563-64 (Wis. Ct. App. 1995) (finding no improper use of extraneous information when pharmacist told other jurors, based on his professional opinion, that the defense witness “was untruthful about the drug she took because the quantities she testifies she took would have knocked her out”).

52. *In re Malone*, 911 P.2d 468, 486-87 (Cal. 1996) (finding no improper influence in psychologist’s discussion of the accuracy of the polygraph evidence presented at trial).

53. *See Leavitt v. Magid*, 598 N.W.2d 722, 728 (Neb. 1999) (finding no improper use of extraneous information when an attorney-juror’s discussion of proximate cause was general legal knowledge and not specific to the factual circumstances presented in the case).

54. *Kendrick v. Pippin*, 252 P.3d 1052, 1056 (Colo. 2011).

These examples of guidelines for determining the legitimate boundaries for the use of juror expertise display a lack of clarity that is reflected in the varied and ambivalent response these appellate courts display when presented with evidence that jurors have used their specialized expertise during deliberations. Moreover, perhaps recognizing the murkiness of the boundaries, courts do not attempt to communicate these guidelines for appropriate behavior to the jurors, who are instead expected to divine the proper dividing line between appropriate and inappropriate behavior based on specialized expertise.⁵⁵

II. SPECIALIZED JUROR KNOWLEDGE IN THE MODERN JURY TRIAL

Appellate cases can offer only a glimpse at the occurrence and use of specialized juror knowledge on the modern American jury. We learn about such cases only if someone has disclosed what occurred during deliberations and an appeal has ensued. Thus, a survey of appellate cases provides no indication of how often jurors with specialized expertise appear on juries and only indirect information on the role that expertise has actually played during deliberations. To address the first question—how often jurors with specialized expertise appear on juries—we collected data from two sources. The first is a survey of experienced trial attorneys who were asked about the occupational make up of the jury in their most recent jury trial. The second is a unique study of fifty civil jury trials in Tucson, Arizona, where we were able to question jurors on their relevant case-specific expertise. In addition, because we were permitted to videotape the actual jury deliberations, we were able to examine the behavior of the embedded juror-experts in the deliberations in these

55. An exception to the general absence of instruction on how jurors should handle specialized expertise arises in trials involving the use of interpreters. Jurors often receive a specific instruction that they must accept the official interpreter's translation of non-English testimony even if they disagree with it. *See, e.g.*, DEL. P.J.I. CIV. § 3.8 (2000) ("Languages other than English may be used during this trial. The evidence you are to consider is only that provided through the official court interpreter. Although some of you may know the non-English language used, it is important that all jurors consider the same evidence. Therefore, you must base your decision on the evidence presented in the English interpretation. You must disregard any different meaning of the non-English words.").

fifty civil trials.⁵⁶ We begin with a description of the survey of experienced trial attorneys conducted at their national conference.

A. Trial Attorney Survey

At the annual meeting of a prestigious invitation-only organization of experienced trial attorneys who represent plaintiffs and defendants in civil cases, as well as the government and criminal defendants in criminal cases, one of us (S.D.) was invited to speak about juries. With the permission of the Executive Board of the organization, members of the audience were asked to complete a survey, which included questions about their last jury trial. Approximately half the members of the audience completed the survey, producing a sample of 167 attorney respondents who had tried an average of eighty jury trials each.⁵⁷

Respondents were asked to think about their last jury trial and to indicate occupations represented on the jury.⁵⁸ Table 1 shows the question and the pattern of responses.

56. Pam Mueller's research assistance on the topic of juror experts and coding of deliberations was invaluable.

57. Eligible respondents were attorneys who reported on the composition of the jury in their last trial. The survey asked whether the respondent was an attorney. Twenty-seven respondents were not included in the analyses: two judicial respondents, five non-lawyers, nine respondents who did not indicate whether they were lawyers, ten lawyers who did not answer the questions about their last jury trial, and one additional respondent whose answers were illegible.

58. The question was phrased: "Please think back to the jurors on your most recent jury trial. Please indicate whether anyone on the jury, including alternates, was (check all that apply): [followed by the list of occupations that appear in Table 1]."

Table 1. Occupations of Jurors on Your Last Jury Trial

Please think back to the jurors on your most recent jury trial. Please indicate whether anyone on the jury, including alternates, was (check all that apply):

N	Percent	Occupation
1	0.6	physician
36	21.6	nurse or medical technician
16	9.6	attorney
26	15.6	paralegal or legal secretary
51	30.5	mechanic
15	9.0	scientist
51	30.5	therapist or social worker
46	27.5	accountant
32	19.2	insurance company employee
17	10.2	had other occupational expertise, specify _____

Note: Average listed occupations: $342/167 = 2$ per case

Although the attorneys reported that they rarely had physicians on their juries, their most recent trials, contrary to expectation, were heavily populated with jurors who had occupational expertise that could have been relevant in at least some types of trial. To test whether jurors with case-relevant occupations were avoided when that potential expertise was applicable to a case, we looked at selection patterns attorneys reported for trials when there was a match between the juror's occupation and the nature of the case.⁵⁹ More specifically, we examined whether the attorneys avoided

59. After asking about the presence of juror-experts in their last jury trial (Table 1), we asked the attorneys: "What was the general nature of the case?" and offered the following choices: "criminal, medical malpractice, products liability, other tort, contract, or other (specify)."

jurors with medical expertise in medical malpractice cases, or more broadly in tort cases, and whether they avoided jurors with engineering or mechanical expertise in products liability cases (Table 2).

Table 2. Selection Patterns for Jurors with Potentially Relevant Expertise

Juror Occupation	Case Type	% of Case Type with this Juror Expertise	% of All Other Case Types with this Juror Expertise	p-level
Medical	Medical Malpractice	31.0% (29)	19.6% (138)	.172
Medical	Tort	27.8% (90)	14.3% (77)	.035
Engineering/ Mechanical	Products Liability	72.2% (18)	48.3% (149)	.055

Note: Based on data from n = 167 attorneys. Numbers in parentheses refer to the total number of most-recent trials of that case type.

In light of the small number of cases for each of the specialized categories, it is not surprising that two of the three comparisons in Table 2 were not statistically significant at the conventional level of $p < .05$. What is surprising is that all three comparisons showed patterns that actually tilted in favor of *retaining* jurors with expertise, contradicting the common wisdom that says such jurors will be swiftly removed. Could it be that these experienced veteran trial attorneys were actually selecting *for* juror expertise? To the extent that an attorney believes that the weight of the technical evidence favors her client, she may not be inclined to remove a prospective juror whose background suggests expertise. If both attorneys believe that the evidence is in their favor, the juror will remain.⁶⁰ Whether trial attorneys are actively selecting jurors with

60. In rejecting a claim on appeal that a juror-mechanic brought improper expertise to deliberations in a products liability case, one appellate court observed that the parties were aware of his background, noting, "The trial court stated: 'None of the parties struck him and they obviously assumed he would bring something to their overall discussion of the case which is drawn from his own experience and knowledge.'" *Christman v. Isuzu*, No. 97-2211, 1998 WL 249017, at *7 (Wis. Ct. App. May 19, 1998).

relevant expertise or merely not actively attempting to remove them, this evidence indicates that the appearance of an embedded expert on the jury is neither a fluke nor the product of inexperienced lawyering. Nor is it confined to trials handled by elite attorneys, as the evidence below from the Arizona Jury Project shows.

B. The Arizona Jury Project

1. The Background of the Project

The Arizona Jury Project, in which we observed actual jury deliberations, presented a unique occasion to observe how jurors with occupational expertise behave during jury deliberations.⁶¹ The opportunity to study these jury deliberations arose because an innovative group of judges and attorneys in Arizona, encouraged by the Arizona Supreme Court, took a close look at their jury system.⁶² As a result, Arizona decided to make some changes aimed at facilitating jury performance, including a controversial innovation instructing jurors that they were permitted to discuss the case among themselves during breaks in the trial.⁶³ To evaluate the effect of allowing discussions, the Arizona Supreme Court issued an order permitting a team of researchers to conduct a randomized experiment in which jurors in some cases were instructed that they could discuss the case and jurors in other cases were given the traditional admonition not to discuss the case.⁶⁴ The court order also permitted us to videotape the jury discussions and deliberations.⁶⁵

61. See Shari Seidman Diamond et al., *Jury Discussions During Civil Trials: Studying an Arizona Innovation*, 45 ARIZ. L. REV. 1, 4-5 (2003).

62. *Id.* at 3-4.

63. *Id.* at 4.

64. *Id.* at 16-17.

65. See *id.* at 17 n.39. See also *id.* at 17, for a detailed report on the permissions and security measures the project required, and the results of the evaluation. As part of their obligations of confidentiality under the Supreme Court Order as well as additional assurances to parties and jurors undertaken by the principal investigators, the authors of this Article have changed certain details to disguise individual cases. The changes do not, however, affect the substantive nature of the findings that are reported.

2. Selection of Jurors and Cases

The jurors, attorneys, and parties were promised that the tapes would be viewed only by the researchers and only for research purposes.⁶⁶ Jurors were told about the videotaping project when they arrived at court for their jury service.⁶⁷ If they preferred not to participate, they were assigned to cases not involved in the project.⁶⁸ The juror participation rate was over 95 percent.⁶⁹ Attorneys and litigants were less willing to take part in the study.⁷⁰ Some attorneys were generally willing to participate when they had a case before one of the participating judges; others consistently refused.⁷¹ The result was a 22 percent yield among otherwise eligible trials.⁷²

3. Data Collection and the Final Sample

In addition to videotaping the discussions and deliberations, we also videotaped the trials themselves and collected the exhibits, juror questions submitted during trial, jury instructions, and verdict forms.⁷³ In addition, the jurors, attorneys, and judge completed questionnaires at the end of the trial.⁷⁴ The fifty cases in the study reflected the usual mix of cases dealt with by state courts: twenty-six motor vehicle cases (52 percent), four medical malpractice cases (8 percent), seventeen other tort cases (34 percent), and three contract cases (6 percent).⁷⁵ The forty-seven tort cases in the sample

66. *See id.*

67. *Id.*

68. *Id.*

69. Although we cannot be certain that the cameras had no effect on their behavior during deliberations, the behavior during deliberations at times included comments that the jurors presumably would not have wanted the judges or attorneys to hear. *See id.* at 22-23 (providing excerpts of comments by jurors).

70. *Id.* at 17.

71. *Id.*

72. *Id.*

73. *Id.* at 18.

74. *Id.*

75. *Id.* This distribution is similar to the breakdown for civil jury trials for the Pima County Superior Court for the year 2001: 62 percent motor vehicle tort cases, 8 percent medical malpractice cases, 23 percent other tort cases, and 6 percent contract cases. BUREAU OF JUSTICE STATISTICS, U.S. DEP'T OF JUSTICE, CIVIL JUSTICE SURVEY OF STATE COURTS, 2001, NAT'L ARCHIVE OF CRIM. JUST. DATA, available at <http://www.icpsr.umich.edu/icpsrweb/>

varied from the common rear-end collision with a claim of soft tissue injury to cases involving severe and permanent injury or death.⁷⁶ Awards ranged from \$1000 to \$2.8 million, with a median award of \$25,500.⁷⁷

4. *The Data*

a. *The Trials*

We transcribed the opening and closing arguments in each case from the trial videotape.⁷⁸ We also created a very detailed “road-map” of the trial from the videotaped trial.⁷⁹

b. *Data from the Deliberations*

We created verbatim transcripts of all deliberations,⁸⁰ producing 5276 pages of deliberation transcripts for the fifty trials. The deliberations consisted of 78,864 comments by the jurors, each of which was coded on a variety of dimensions. A comment, akin to a turn, was defined as a statement or partial statement that continued until the speaker stopped talking or until another speaker’s statement or partial statement began. If another speaker interrupted, but the original speaker continued talking, the continuation was treated as part of the initial comment.⁸¹ For example, here Juror 2 is in mid-sentence when Juror 4 interrupts to agree before Juror 2 completes his comment:

Juror 2: Negligence and cause of death ... [are] also in the fact
of what you don’t do—
Juror 4: I, I agree.
Juror 2: to prevent it.

NACJD/studies/03957/version/3 (last visited Jan. 29, 2014).

76. Diamond et al., *supra* note 61, at 18-19.

77. *Id.* at 19.

78. *Id.*

79. *Id.*

80. The project originally created quasi-transcripts of the deliberations for initial analyses. *Id.* at 19-20. We later produced verbatim transcripts to obtain a complete representation of what jurors said during deliberations.

81. *Id.* at 61 n.90.

In this instance, Juror 2 was credited with one comment and Juror 4 was credited with one comment.

c. Post-trial Questionnaires

At the end of the trial, each juror and judge completed a questionnaire about the trial and their reactions to it.⁸² One of the questions jurors answered on the questionnaire was whether there was anything in their background that had given them particular knowledge or expertise in serving as a juror in the case.

5. Jurors and Their Expertise

One in five jurors claimed on their questionnaire that they had some relevant expertise. The deliberations reveal that the jurors often cited that expertise or drew on it to justify their positions. Not all of these claims of expertise, however, reflect occupational or education-based expertise. Some of the sources of particular knowledge that the jurors identified would fall in the category of ordinary common sense or experience (e.g., “I drive,” or “I am a parent”). Jurors often refer to, and indeed are expected to draw on, their more general personal experiences to provide a context for the evidence or a basis for evaluating the plausibility of a claim.⁸³ Thus, in a case in which some jurors expressed skepticism about the severity of a plaintiff’s injury in view of his stoic testimony in describing the event, another juror attributed it to a male tendency not to express emotion, claiming that she was very familiar with that tendency because she grew up with four brothers. In another case, jurors were impatient with a plaintiff’s decision to go to a chiropractor rather than a medical doctor and her failure to fill the prescription given to her in the emergency room. One of the jurors offered a potential explanation: “I’m Mexican [by heritage] and some Mexican people will only go to chiropractors, not MDs and [they] don’t like taking drugs.” In the normal flow of conversation in the deliberation room, jurors often refer to prior accidents and injuries, those they

82. *Id.* at 18.

83. *See supra* notes 14-15 and accompanying text.

personally experienced, as well as those of friends or relatives.⁸⁴ They discuss the kind of activity that can lead to carpal tunnel syndrome, whether it is possible to remove a neck brace for a short time without causing further injury, whether chiropractors are typically open during the evening hours, or why someone might take steroids other than to build muscle. The jurors drawing on such experience may or may not convince others that their experience or the knowledge they claim is relevant or accurate, and their fellow jurors may or may not accept what the juror says as providing a legitimate basis for the claim. As in conversation outside the jury room, speakers draw on their experiences and listeners find what they say to be useful or irrelevant.

Jurors who have occupational or educational expertise, however, have more than the usual content of common experience, and can offer a credential that may bolster the credibility of their comments. That is not to say that a juror with a specified occupational or educational background would qualify as a testifying expert, but rather that the juror can draw on, and point to, relevant training or occupation-related experience that is different from, and presumably superior to, that of the average jury member. More than half of the jurors (forty-nine of eighty-two) who reported on the post-deliberation questionnaire that they had particular knowledge or expertise mentioned a case-related occupational or educational basis for the expertise. That number amounts to 12.2 percent of the total sample, an average of one juror per eight-member jury. If we add to that number the forty-six jurors whose occupations indicated relevant expertise, but who did not cite it as a source of relevant expertise on the questionnaire, a total of ninety-five—24 percent of the jurors and an average of two jurors per eight-member jury—began their deliberations with potentially relevant occupational expertise.⁸⁵ The most common form of relevant expertise was medical (n=36), ranging from nurses and nursing assistants to

84. Our focus in this Article is on occupational and education-based expertise. In future analyses, we will examine juror use of personal experiences that do not implicate specialized quasi-expertise because they are not occupation or education-based.

85. We considered the occupational background of the juror relevant only if the case involved issues that touched on the juror's area of expertise. Thus, a medical background was not relevant in a property tort case in which no personal injury was alleged.

radiation therapists and a Ph.D. physiologist. Next was the category that included engineers and jurors in occupations dealing with vehicles (n=21; e.g., mechanics, truck drivers). These jurors had specialized occupational knowledge relevant to cases involving automobile accidents. A third category consisted of jurors with some legal background (n=19; e.g., attorney, legal secretary, “took courses in law”). Some jurors also had financial expertise that was relevant in cases in which financial transactions were at issue (n=7). The remaining juror-experts had a variety of other case-related work backgrounds (n=12; e.g. a volunteer first aid worker in a case involving safety training; a restaurant worker in a case involving a restaurant).

The presence of this potential resource on the jury is not lost on the other jurors. Indeed, a juror need not explicitly refer to his or her source of expertise during deliberations. The jurors have an opportunity during jury selection to hear about the occupations of their fellow jurors, a familiarity that may be reinforced as the jurors share that information during breaks in the trial. As a result, jurors sometimes specifically turn to another juror for professional expertise. In a case involving how patients were handled by a clinic, a juror wanted to know whether it was common practice to call patients who don’t come back to pick up their medication and said, “Let’s hear from the pharmacist.” In an auto accident case involving a dispute over how the accident occurred, a juror asked, “As an engineer, what do you think?”

In some cases, jurors were hesitant to share their expertise during deliberations. Thus, one juror turned to a nurse on the jury who was examining some of the exhibits and asked, “Are those the medical records?” The juror responded, “Um-hum. I’m not here as an expert witness, so I won’t bore you with my opinions.” In several cases, a juror-expert provided useful—and relevant—information. These juror-experts substantially added to the competence of the jury by translating some of the technical material that experts on the witness stand failed to clarify, promoting educational (versus deferential) evaluation of the expert testimony.⁸⁶ Here is an example

86. See Ronald J. Allen & Joseph S. Miller, *The Common Law Theory of Experts: Deference or Education?*, 87 NW. U. L. REV. 1131, 1146-47 (1993).

from a juror-engineer (Juror 1) describing the testimony of the testifying engineer-experts:

Juror 1: If you're rear-ended, the first thing you do—

Jurors 5 and 7 interrupt: You go backwards.

Juror 1: You go backwards, but then you get the recoil going forward. And that's when the seatbelt catches you and stops you. What [the experts are] having arguments on—

Juror 7: [*interrupting*] Is whether he went forward first?

Juror 1: Is, one ... did [the plaintiff's car] go forward instantly? Did it accelerate? If it accelerated, you get the same thing ... it's like you've been rear-ended: you're going to go back first and then go forward, recoil. If you all of a sudden decelerate, that means the car keeps going forward, I mean, the car also stops, but you're going to keep on going forward. And that's when you're going to hit. And the engineer was claiming that the time before they actually hit, when they crumpled each other and then when they started to turn, the time it took to crumple, the car was absorbing energy and—

Juror 5: [*interrupting*] That's when he went forward.

Juror 1: He had enough time to go forward before the car started turning. That's why when I asked those questions, he said "No, no, he'll have time to go forward and [injure himself] before he starts going forward and backwards," which I don't know is truly the case.

Juror 5: But I think the question we were hearing from the other side is: if the hit was like this [*uses hands to indicate diagonal impact at side of car*], doesn't the [striking car] contribute some more energy to that sort of general forward movement in the car? Because it's not at right angles, and it's not head-on.

Juror 1: My general impression is that that's true. If you have something going at an angle [*makes same diagonal diagram with his hands*], you have some motion going perpendicular to

the car and you have some motion going along the car. And when you get hit, you get shoved [*uses hands to indicate motion to the side*] and you also get shoved forward. And, at least for a short while, before friction, your car would actually go forward for a little while as it got hit, and you would go back. And that's why I was asking him and I was, like, "That seems a little strange." And he's saying there's something actually happening in between, while it's crumpling. And he didn't make that particularly clear.

Other jurors with relevant occupational expertise provided little instruction but offered strong opinions. In a low impact collision, the driver of one vehicle failed to stop and slammed into the automobile he was following. The plaintiff claimed soft tissue injury and sued to recover for the cost of past and future chiropractor expenses, along with pain and suffering. A key question in the case was the speed at which the impact occurred, in light of the damage to the vehicles. Both the plaintiff and the defendant called experts in accident reconstruction who calculated their estimates based on the statements of the plaintiff and defendant on how far the vehicles moved in the course of the collision and the damage to the vehicles. The defendant admitted negligence, but denied that the plaintiff was injured in the collision. The attorneys removed two mechanics during voir dire, but retained an artist/mechanic who worked with metal. After two other jurors expressed their views that the plaintiff's injuries were overstated, the artist offered a series of opinions on the plausibility of the two expert witnesses based on his experience and his own analysis of the pictures of the vehicles involved in the accident:

First of all, I've been a mechanic, raised in it my whole life. I've also been exposed to welding with metals... he said that bumper was .1 in thickness, which is not very thick. My guess is it is probably 13 gauge, which is a thin metal. Now the metal of the back end is even thinner than that. Now, I don't know if you notice, but when you are on the road, and you see an accident, these little cars wad up. The engineers design the cars to absorb as much energy as possible as opposed to in the old days. So I'm not impressed by the back end being bent. You could dent it with a bicycle.... So they wanted us to believe that a majority of the

back of their car was damaged. My own guesstimation—maybe forty percent or less. Just the very left corner [A]nd his hook [on the defendant's vehicle] may have penetrated the bumper. Well, I fool around with metal all day and it don't take much to bend a 13 inch gauge.

The other members of the jury did not dispute this analysis, although their silence does not necessarily indicate that they accepted the juror's evaluation. The position he was advocating was consistent with the assessment offered in more esoteric terms by the defense expert, whose testimony the jury discussed with approval.

To provide an overall assessment of the behavior of the juror-experts during deliberations, we developed a number of measures designed to reflect activity level, influence, and contributions to deliberations. The comparisons between juror-experts and other jurors on these measures are presented in Table 3:

Table 3. Participation Measures for Juror-Experts and Nonexperts During Deliberations⁸⁷

Index of Participation Behavior	Juror-Experts	Non-expert Jurors	p-level	Controlling for Participation Level
% Comments this Juror Contributed of Total Comments on this Jury (overall participation level)	14.6%	11.9%	$t_{pr, 43 df} = 2.63,$ $p = .012$	---
Participation sub-types:				
% of Correct Instruction References this Juror Contributed of Total Correct References on this Jury	16.0%	11.7%	$t_{pr, 42 df} = 2.48,$ $p = .017$	Becomes nonsignificant

87. In the forty-four cases with juror-experts (351 jurors, including 95 juror-experts), except as otherwise indicated. Results in the middle three columns of this table reflect paired t-tests, conducted on the total mean percentages (or, for self-rated influence, the averaged means) for experts on the jury versus the nonexperts on that same jury. We conducted paired tests on group-level means so that each jury would have one observation each for the experts and nonexperts on a given jury-group, thus satisfying the requirement that all observations across the pairs be independent.

Hierarchical mixed models provide another method for analyzing data that are nonindependent, or “nested” (jurors are nested within jury groups). That approach attempts to estimate simultaneously both the individual-level variability in the outcome and the group-level variability. *See, e.g.,* STEPHEN W. RAUDENBUSH & ANTHONY S. BRYK, *HIERARCHICAL LINEAR MODELS: APPLICATIONS AND DATA ANALYSIS METHODS* 3-4 (2d ed. 2002). However, such models are problematic to use on the type of variables analyzed here, which not only have few observations for each group (and therefore low power to estimate group-level variability), but also tend to produce so-called “negative intraclass correlations.” *See* David A. Kenny et al., *The Statistical Analysis of Data from Small Groups*, 83 *J. PERSONALITY & SOC. PSYCHOL.* 126, 128 (2002). In these instances, grouping tends to exaggerate differences within a group, rather than—as is more typical—to make group members more alike. *See id.* The iterative maximum likelihood estimation procedures used in these models sometimes do not converge and therefore fail to provide any estimates, which was our experience in analysis of nearly all the variables listed in Table 3. Where models did converge on a solution, results always substantively confirmed the paired t-test results. To control for participation, we used a combination of linear and mixed-model methods.

<i>Table 3 cont.</i> Index of Participation Behavior	Juror-Experts	Non-expert Jurors	p-level	Controlling for Participation Level
% of Incorrect References to Jury Instructions this Juror Contributed of Total Incorrect References on this Jury	16.2%	11.2%	$t_{pr, 41 df} = 3.29$, p=.002	Becomes nonsignificant
% of Corrections to Inaccurate Instruction References this Juror Contributed of Corrections made on this Jury*	16.5%	10.9%	$t_{pr, 39 df} = 1.79$, p=.081	Becomes nonsignificant
% Comments about Experts this Juror Contributed of Total Comments about Experts on this Jury**	14.8%	11.3%	$t_{pr, 35 df} = 2.25$, p=.031	Becomes a trend effect(p < .10)
% Calls to Vote this Juror Contributed of Total Calls to Vote on this Jury	15.4%	11.9%	$t_{pr, 43 df} = 1.06$, p=.293	Remains nonsignificant
% Probes this Juror Contributed of Total Probes on this Jury	14.7%	11.9%	$t_{pr, 39 df} = .995$, p=.326	Remains nonsignificant
Source of the First Verdict Proposal (probability)	.179	.105	$t_{pr, 43 df} = 1.52$, p=.136	Remains nonsignificant
Source of the Final Actual Verdict (probability)	.112	.125	$t_{pr, 43 df} = -.305$, p=.762	Remains nonsignificant
Source of First Valenced Comment (probability)	.133	.122	$t_{pr, 43 df} = .25$, p=.803	Remains nonsignificant

*In the forty cases with corrected instructions and juror-experts (319 jurors, including 86 juror-experts).

**In the thirty-six cases with expert witnesses and juror-experts (290 jurors, including 78 juror-experts).

The behavior of the juror-experts and the other jurors differed on several of these measures, but was remarkably similar on others. On average, the juror-experts were more active than nonexperts, contributing a significantly greater percentage of comments than jurors without relevant occupational/educational expertise: 14.6 percent versus 11.9 percent on average, a 23 percent higher rate of activity compared to the nonexpert jurors. And they tended to be more active on a range of activities, contributing significantly more correct references to jury instructions as well as more incorrect references, with a trend toward contributing more corrections for instruction errors made by other jurors. They also contributed significantly more comments on expert witnesses. The first three of these differences, however, were bound up in the overall greater activity of the juror-experts: as described in the results in the last column of the table, when we controlled for overall juror activity, all three differences relating to jury instructions became nonsignificant. In contrast, the greater focus on expert testimony by the juror-experts persisted, although it was reduced to a trend. The disproportionate commentary from juror-experts on testifying experts is precisely the double-edged sword that lurks in the benefits juror-experts can offer and in the concerns raised about undue influence from juror-experts. As jurors who are more familiar and comfortable with the content of the testimony, these juror-experts are in a position to explain what others might find difficult, just as the juror did in the lengthy quotation above. But juror-experts may also influence other jurors' assessments of the testifying expert based merely on their apparent knowledge, and such influence would be the result of opinions untested in court during the trial.

The other measures reveal surprisingly little evidence that as a group the juror-experts exerted a particularly powerful influence during deliberations. For example, one way that jurors can play a leadership role is to call for a vote, attempting to move the group toward a verdict. As might be expected, forepersons were more likely than other jurors to call for a vote, on average initiating five times as many calls to vote as nonforepersons. But juror-experts were no more likely to become forepersons than nonexperts.⁸⁸

88. See Table 4 *infra*.

Moreover, juror-experts were no more likely to initiate calls for a vote than were nonexperts.

Another potential method jurors could use to guide deliberations was at the individual juror-to-juror level, by probing another juror for their viewpoint (e.g., “Why did you vote that way?” or “What do you think about an award of \$10,000?”). Juror-experts did not take on a greater leadership role in deliberations by disproportionately probing the views of the other jurors.

Another way to influence group decision making is to propose a decision the group might adopt. Yet juror-experts were no more likely than the other members of their jury to offer the first suggested verdict,⁸⁹ to propose a verdict that the jury ultimately adopted, or even to offer the first comment during deliberations that favored one party over the other (i.e., the first valenced comment).

Measures not reflecting level of juror participation, too, as Table 4 shows, revealed no evidence of substantial influence from the juror-experts based on an aura of authority stemming from their greater expertise.

89. Possible verdict categories included liability verdicts, comparative fault percentage allocations, and damage awards.

Table 4. Non-Participation Measures of Juror-Experts and Nonexpert Jurors During Deliberations

Nature of Non-Participation Measure	Juror-experts	Nonexpert jurors	p-level
Self-rated Influence*	4.44	4.26	$t_{pr, 40df}=1.04$, $p=.306$
Foreperson (probability)	.140	.126	$t_{pr, 43 df}=0.26$, $p=.799$
Holdout (probability)**	.339	.210	$t_{pr, 14 df}=1.31$, $p=.213$
Average % of Juror's Own Comments that were Valenced	43.9%	43.0%	$t_{pr, 43 df}=0.66$, $p=.513$
Average % of Juror's Own Valenced Comments that were Mixed	4.3%	3.3%	$t_{pr, 43 df}=1.70$, $p=.097$
One-sided Jurors—90% or more Valenced Comments in favor of one Party (probability)	.106	.191	$t_{pr, 43 df}=-2.51$, $p=.016$

*This analysis is based on the 322 jurors who completed this post-trial questionnaire measure. The 1 to 7 scale goes from 1 (not at all influential) to 7 (extremely influential). These jurors came from forty-one cases.

**In the fifteen cases with nonunanimous verdicts and juror-experts (121 jurors, including 33 juror-experts).

Juror-experts and nonexperts did not differ on their self-rated influence as reported on the postdeliberation questionnaires (averaging 4.44 versus 4.26 on a 7-point scale). Self-reports can of course be notoriously unreliable, particularly when self-assessment

is involved.⁹⁰ Here, however, the lack of difference in self-reported influence was also reflected in observable behavioral measures, including selection as foreperson. Moreover, if the juror-experts were disproportionately successful in influencing their fellow jurors in a more subtle fashion, they should have been able to avoid ending up as holdouts when a final verdict was reached.⁹¹ Yet, if anything, these juror-experts were more likely to be holdouts on the nonunanimous juries than were their fellow jurors.

Given their greater level of activity, the juror-experts might have been able to exert undue influence if they were particularly opinionated and had strongly advocated for one of the parties. We used three measures to assess the extent to which juror-experts expressed strong views during deliberations, comparing the juror-experts and nonexperts on the contributions they made to deliberations that favored one of the parties. We coded the valence of each comment in the context of the discussion occurring at the time and in the context of the entire case, assessing whether the observation favored one of the parties. We defined a valenced remark as any comment that one of the parties would, and the opposing party would not, want a juror to say.⁹² If a remark was mixed in that it included some material favorable to both parties or unfavorable to both, it was valenced for both. A total of 24,402 comments were coded as valenced using this basic valenced coding system.⁹³

90. See Barbara O'Brien et al., *Ask and What Shall Ye Receive? A Guide for Using and Interpreting What Jurors Tell Us*, 14 U. PA. J.L. & SOC. CHANGE 201, 227-28 (2011).

91. The decision rule for civil juries in Arizona requires six of the eight jurors to agree in order to reach a verdict. ARIZ. REV. STAT. ANN § 21-102 (2013). If the jury is not unanimous at the end of the deliberations, only those jurors agreeing with the verdict sign the verdict form. REVISED ARIZONA JURY INSTRUCTIONS (CIVIL) Standard 8 (4d. 2005). We refer to the others as the "holdouts."

92. For example, the following comment was coded as a pro-plaintiff valenced statement: "But I think he [the plaintiff] really was in pain." In contrast, the following comment was coded as a pro-defendant valenced statement: "She [the plaintiff] didn't follow the instructions that [the hospital] gave her. Because right here it says, uh, [*juror pages through a document*], oh, 'as soon as possible make an appointment to see the doctor in two days.'"

93. Mixed comments with material favorable or unfavorable to both sides were weighted .5 for each side. The basic valenced coding system was developed to assess balance and extremity in jury deliberations. The coding system produced good reliability. Two coders independently coded two full transcripts. For each coding category, we created an index of agreement following the procedure described by Charles P. Smith consisting of twice the number of agreements on a category divided by the sum of the frequency that each coder used

In addition, jurors made comments that simply advocated a particular amount or range in dollars (e.g., \$10,000) or a metric for damages (e.g., two months of lost wages). These comments required a context to interpret as pro-plaintiff or pro-defendant, so we used the final verdict as the reference. We characterized the amount as pro-plaintiff if it exceeded the amount the jury actually awarded (in total or in the category to which it applied) and as pro-defendant if it was less than that final amount. This reference point thus distinguished the amounts favored by the members of the jurors who would have given more than the jury eventually did from the amounts favored by the other jurors who would have given less than the jury eventually did. Because juries rarely returned damages that approached what plaintiffs requested,⁹⁴ however, some of the “pro-plaintiff” suggestions were only modestly favorable to the plaintiff in the case. An additional 1254 comments were valenced on this measure, for a total of 25,656 valenced comments.⁹⁵

The juror-experts on average did not contribute a higher proportion of valenced comments than did the nonexperts. To the extent that valenced comments are sources of persuasion, either by emphasizing a particular piece of evidence or by interpreting the facts in a way that favors one party, the similar proportion of valenced comments contributed by juror-experts and nonexperts provides no evidence that the juror-experts disproportionately engaged in these persuasive efforts.

Two other ways of using these valenced contributions allowed us to assess the balance and complexity of contributions jurors made

the category. See Charles P. Smith, *Content Analysis and Narrative Analysis*, in HANDBOOK OF RESEARCH METHODS IN SOCIAL AND PERSONALITY PSYCHOLOGY 313, 313-27 (Harry T. Reis & Charles M. Judd eds., 2000). Comments valenced in favor of the defendant had indices of .82 and .85; the indices for comments valenced for the plaintiff were .62 and .85; for comments valenced for both, .55 and .66 (this category was assigned no more than ten times in each of the two transcripts). The remaining categories in the coding system (e.g., comment was neutral or ambiguous) all had comparable indices.

94. See Shari Seidman Diamond, Mary R. Rose, Beth Murphy & John Meixner, *Damage Anchors on Real Juries*, 8 J. EMPIRICAL LEGAL STUD. 148, 173-74 (2011).

95. An additional 16,328 juror comments could not be valenced because the comments were fragments (e.g., “I just can’t believe ...”), mere utterances (e.g., “Um-hum”) or ambiguous (e.g., “Oh my god ...”). With these comments excluded, 62,536 substantive comments remained, of which 41 percent were valenced (43 percent for the cases with juror-experts that appear in Table 4).

to deliberation: the frequency of a juror's mixed comments and whether the juror's comments tended to be one-sided. The frequency of mixed comments reflects the extent to which jurors offered more complex evaluations of the evidence, making mixed comments that included points favorable or unfavorable to both sides. Although only 3.8 percent of all juror valenced comments in the forty-four cases with at least one juror-expert were mixed, juror-experts offered somewhat more mixed comments than did nonexperts (4.3 percent v. 3.3 percent, $p < .10$).

One-sided jurors constitute the other extreme, discussing the evidence in terms that entirely favor one party. It is sometimes claimed that jurors enter deliberations at the end of trial with a firm and monolithic view favoring one side or the other.⁹⁶ Deliberations then consist of a conversation with a preordained outcome: the majority persuades or browbeats the minority into changing their position. Our work with these fifty jury deliberations suggests a more complex and important role for deliberations, perhaps because most jurors do not appear to have reached closure as deliberations begin. Yet some jurors do consistently express a single view throughout deliberations.

We identified jurors as demonstrating a one-sided approach if 90 percent or more of their valenced comments favored one party. These jurors constituted 15 percent of all jurors.⁹⁷ A more evenly divided distribution of valenced comments provided evidence that the juror was engaging in more complex thinking and deliberation. Thus, if a juror said that the inconsistency between the defendant's deposition and trial testimony made him less believable—something that favored the plaintiff—but also argued that the evidence showed the defendant's behavior was reasonable under the circumstances, the juror would be showing a more complex consideration of the evidence than one who persistently rejected any evidence favorable to the defendant. On this measure, the juror-experts and nonexperts differed significantly. The juror-experts were significantly *less* likely to be one-sided jurors. Among juror-experts, 10.6 percent were in the one-sided category, but 19.1 percent of nonexpert jurors

96. See Jeffery R. Boyll, *Psychological, Cognitive, Personality and Interpersonal Factors in Jury Verdicts*, 15 LAW & PSYCHOL. REV. 163, 165 (1991).

97. These sixty jurors were distributed across thirty different juries.

qualified as one-sided.

In the empirical picture that emerges from this aggregate view of the behavior of the embedded experts, we find that the modern American jury shows little evidence of overbearing behavior or undue influence by juror-experts at the aggregate level. Indeed, the aggregate data suggest that juror-experts as a whole make at least one unambiguously positive contribution to deliberations in that they are less likely to take a consistently one-sided view of the evidence.

Our final approach to assessing the behavior of the juror-experts comes from a closer examination of the content of the specialized comments the juror-experts offered in the course of deliberations and the response from other jurors. (See Table 5). On some occasions, the juror explicitly claimed expertise by announcing the source of her specialized knowledge in the context of offering a comment (e.g., “I have a background in real estate, so when they were talking about mixing up the parcels I’m like, why, how could you do that with the parcel number?”). On other occasions, the context or the substance of the comment itself indicated the juror’s expertise. Context provided the cue to expertise when another juror explicitly referred to the juror-expert’s occupation in drawing out the juror-expert’s response (e.g., addressing the radiation therapist on the jury: “So if you took those [x-rays taken by a chiropractor] to the neurologist or back to her primary physician, they wouldn’t be of any value to them?” The radiation therapist’s response: “Probably not. But, he wouldn’t be able to read them anyway, because he’s not a radiologist. He’s an M.D.”).⁹⁸

The specialized content of the comment itself could also provide evidence that the juror was drawing on occupational expertise if a juror made a comment with content so specific to his or her specialized background that only someone with a similar background would be likely to offer that comment (e.g., the owner of an auto shop, describing how a seat belt works, explains, “It does not lock until the car falls forward. It’s on an exocentric system.”). To ensure that all potential expert-based comments were identified, we

98. These no doubt represent an undercount of elicited juror-expert comments because they include only those comments elicited with an explicit reference to the juror-expert’s occupational background.

included some comments that could conceivably have been made by a juror without the same occupational background of the juror-expert (e.g., a juror-expert with a background in law explained: “Dismissed with prejudice, it cannot be refiled; dismissed without prejudice, it can be refiled.”). Nonetheless, even with this generous coding standard, only fifty-nine of the ninety-five juror-experts made identifiable occupation-related comments and those comments accounted for a remarkably small percentage (2.3 percent) of the comments made by juror-experts in deliberations:

Table 5. Specialized Comments Offered by Juror-Experts

Type of Comment	N of Comments	N of Jurors Who Made Comments	% Valenced
Self-Identified Expert Comments	94 (0.6%)	39	76.8%
Other Expert-Related Comments	281 (1.7%)	53	47.0%
Remaining Comments	15,684 (97.7%)	95	42.7%
Total Comments By Juror Experts	16,059 (100.0%)	95	42.9%

Out of the total 16,059 comments made by the juror-experts, a total of ninety-four self-identified comments were offered by thirty-nine different jurors. Unlike other comments, these self-identified expert comments were likely to be valenced (76.8 percent), suggesting that the juror was announcing a source of specialized knowledge as a means of justifying the pro-plaintiff or pro-defendant position the juror was taking. Here are several of these comments:

Case A: Medical experts gave strongly conflicting testimony on what caused the plaintiff’s brain injury. The plaintiff’s expert, a medical doctor, claimed that the plaintiff lost oxygen as a result of how his head was positioned after sustaining a trauma. By the time the following discussion occurred in deliberations, a number of jurors had already expressed the view that the plaintiff had not proved liability. One juror (Juror 1), however, was not convinced that

a defense verdict was warranted and a juror-expert (Juror 6), claiming expertise, addressed her:

Juror 6: Okay, it says in our instructions that we're supposed to judge this on the basis of our experience.

Juror 1: We have to be satisfied.

Juror 6: Okay. I'm a physiologist. I have a Ph.D. in physiology, okay. And I just want to say that to me, the whole thing with [the plaintiff's cause of injury] is totally unsubstantiated.

Juror 3: [*nods in agreement*]

Juror 6: I ... I as a physiologist cannot believe that a person who does not have something on top of their head can suffocate just from having their head down.

Juror 4: [*nodding in agreement*] Just by ... right.

Juror 6: I'm sorry. I just cannot believe that.

Juror 4: I can't either, I mean, like we said, we'd have a town full of brain-injured drunks.

Juror 3: Right. Exactly. How many drunks fall asleep like this. [*putting her head down*]

Juror 4: Exactly.

Juror 7: How many times do your children ... my children.

Juror 6: Oh. That's a good point.

Juror 7: They fall asleep like this. [*putting her head down on her chest*]

Juror 5: No kidding.

Juror 7: While we're driving. They fall asleep and they're down.

Juror 5: [*indicates agreement*]

Juror 6: So I just ... I just don't buy that with my training and experience.

Juror 1: There was trauma and maybe something happened with [the oxygen supply] or something.

Juror 5: No.

Juror 6: No. It's physiologically impossible.

Juror 1: Ya' know, you're talking about a physiologist compared to an M.D. [plaintiff's expert].

Juror 6: Okay, okay, so....

Juror 2: Um, what is medically more reasonable, I think, is the trauma.

Because most of the jurors had agreed on the cause before this discussion occurred, we cannot attribute the verdict for the defendant to the juror-expert's claimed expertise. Indeed, other jurors responded to the juror-expert's opinion by offering other confirmatory experiences (e.g., a parent noting how children sleep). In any event, the juror-expert was not effective in persuading Juror 1, who ended deliberations as a holdout.⁹⁹

Case B: The issue was whether it was appropriate for a medical facility to contact former patients to gather some follow-up information. Juror 8, a pharmacist, reinforced the majority's sense that the follow-up was reasonable and the approach taken by the defendant was acceptable:

Juror 8: Okay, the way that confidentiality, that, we use it at work.

Juror 1: [*interrupting*] Let the pharmacist speak here.

Juror 8: [*continuing*] for records and things like that.

99. Civil juries in Arizona do not require a unanimous verdict. ARIZ. REV. STAT. ANN. § 21-102C-D (2013).

Juror 7: Um-hmm.

Juror 8: They did not violate—in my opinion—that they did not violate confidentiality because, um, I don't find it unreasonable for them to say they did a follow-up.

Juror 5: Right.

Juror 8: We do follow-up at work also.

Although several of the jurors were deferential (e.g., “Let the pharmacist speak here.”), the pharmacist was voicing a view that had little opposition from the jury.

Case C: The jury had decided to find the defendant liable in an auto accident, but was questioning the length of the chiropractic therapy required for the plaintiff. A juror-expert (Juror 1), who worked in a physical therapy/occupational therapy office, found support in arguing that the length claimed was too long:

Juror 1: Well, I worked, I worked in a physical therapy office—

Juror 3: Uh huh.

Juror 1: for quite a while. And, I mean, three months for one patient—

Juror 3: Is a lot.

Juror 1: much less what they are asking for here, would have been just insane. I mean, we would have sent them back to the doctor, and had re-x-rays and would not, we would not have continued with therapy for that long, not fixing anything.

Juror 7: Yeah.

Juror 1: Because even three months would have been too long to just sit around and wait.

Again, the juror-expert was offering evidence based on experience to confirm that the jury was on the right track. Had there been an opposing view, it is difficult to know how the conflict would have

been resolved.

On other occasions, a juror-expert who claimed the relevance of his occupational expertise was treated with some disdain by the other jurors:

Case D: In an employment dispute, a juror-expert repeatedly recounted his experiences in the workplace and met impatience:

Juror 3: I have one senior supervisor who's—

Juror 6: Stick to this.

Juror 4: Please.

Juror 5: You have a story for everything. Let's just stay with this, if we're going to get through this.

Finally, on occasion a juror-expert claimed expertise and encountered overt disagreement:

Case E: The jury in a medical malpractice case discussed whether the defendant had met the appropriate standard of care. The two juror-experts with similar medical backgrounds initially disagreed on whether the defendant had failed to properly monitor and treat the patient's condition and whether the patient would have improved with appropriate care. Both drew on their professional experience to justify their positions. Juror 3 was initially convinced that the defendant's actions did not affect the patient's outcome because medical conditions can change suddenly. In contrast, Juror 7 focused on the absence of communication among the medical personnel and argued that the failure to communicate and alter treatment was responsible for the bad outcome. The majority of jurors agreed with Juror 7, but Juror 3 was more fatalistic based on her experience with patient care:

Juror 3: I took care of a lady, I was sittin' there talking to her in a chair and she—

Juror 2: [*nods*]

Juror 3: was talkin' to me and then all of a sudden she slumps in her chair. She had a stroke right in front of me in mid-sentence.

And a little later in deliberations:

Juror 2: I think they would've gotten things better under control with the medication—that maybe that would—

Juror 3: [*interrupting*] See, I have a real problem with that 'cause I think he was gonna have an attack one way or the other.

Juror 2: Not necessarily.

Juror 7: I don't agree with that.

Juror 3: But I'm just giving my opinion.

Juror 2: I know, I know.

Juror 4: We want to hear it.

Juror 3: But I don't know if anything could've been done, even if he was on the meds, if it would've stopped it.

Eventually, Juror 3 was persuaded to join the other jurors in finding liability on the grounds that the defendant's inaction, while not the only cause, was in fact a cause of the plaintiff's outcome.

As the pattern in Table 4 showed, juror-experts in ten cases encountered an extreme version of opposition that led them to be holdouts at the end of deliberations, refusing to sign the verdict form. In five of the cases, a close look at the nature of their disagreement with the verdict revealed that the source of their disagreement was unrelated to their area of occupational expertise. For example, a juror-expert with a medical background refused to sign the verdict form because he would have attributed a higher percentage of responsibility to the defendant in an automobile accident based on his belief that the plaintiff had the right of way.

In the remaining five cases, the juror-expert's occupational background may have accounted for the juror's decision to resist the jury verdict and holdout. In two of those cases, a medical juror-expert was skeptical about the plaintiff's claimed injuries and refused to agree with the jury's decision on an award; in a third case, an engineer wanted to make a modest award (<\$10,000) even lower because he questioned whether the low impact collision had caused any injury. In a fourth case, a medical juror-expert was convinced that earlier medical treatment might have made a difference, but the rest of the jury found the defense expert persua-

sive in concluding that no earlier intervention would have been effective. Finally, in the remaining case, the juror-expert's disagreement was directly linked to his occupation: the holdout juror-expert, a physical therapist, was persuaded that the car accident had exacerbated the plaintiff's previous injury and would have awarded her a small amount for the equivalent of four physical therapy visits. The other jurors found no evidence of injury and awarded nothing. Thus, in none of these five cases was the juror-expert effective in convincing the majority to change its position.

In sum, our close analysis did not reveal any instances in which a juror-expert offered specialized information during deliberations that led other jurors to change their opinions or preferred verdicts. Of course, opinions may have been affected by more subtle forms of influence than we were able to detect. More plausibly, the tiny proportion of comments that drew on specialized juror knowledge—2.3 percent of all comments made by juror-experts—may simply not have a big impact on the average jury's course of deliberations.

But even if juror-experts rarely exert substantial influence by introducing specialized information into deliberations, that evaluation is only part of the story. We have not yet considered precisely what behavior is desirable for these jurors. That is, what *should* jurors be doing with their specialized knowledge during jury deliberations?

III. HOW SHOULD JURORS HANDLE SPECIALIZED KNOWLEDGE?

If expertise is a resource for the jury, should jurors be explicitly encouraged to share their relevant expertise? Alternatively, if the educative resource imposes an unacceptable cost from the influence of unsworn witnesses on deliberations, is there a need for efforts at greater control over attempts by such jurors to influence deliberations? Or is it appropriate simply to rely on the good sense of the jury to take this expertise for what it is worth?

To address these questions, we begin by examining the responses of experienced judges and attorneys to situations in which jurors referred to information based on specialized expertise during the deliberations. We gave the respondents a description of six instances of juror behavior. In each case, we asked whether the juror was behaving appropriately or inappropriately. As we told respondents, we were interested in learning whether these judges and attorneys viewed the juror's behavior as inappropriate, whether or not the behavior would necessarily lead to a new trial. The respon-

dents were 68 judges and 60 attorneys attending an annual federal circuit court conference. All received the same six scenarios with one exception. There were two versions of the fifth scenario, which involved an attorney-juror. In one version, the attorney's advice on the meaning of the jury instructions was correct; in the second version, it was incorrect. Table 6 shows the scenarios and the percentage of respondents who viewed the juror's behavior as appropriate.

Table 6. Survey Results on Appropriate Juror Behavior

Please consider the following statements that a juror might make during deliberations. In each case, indicate whether the juror was behaving appropriately or inappropriately. (Note that evidence of inappropriate behavior would not necessarily lead to a new trial).

Scenario Description	Juror behaved appropriately or inappropriately
Scenario 1. In a motor vehicle tort case, a juror who has worked for an insurance company for 20 years informs his fellow jurors that any award they make will not be taxed. (n=128)	Appropriately 14.8% (Judges = 19.1%) (Attorneys = 10.4%) Inappropriately 85.2%
Scenario 2. In a slip and fall case involving a glass table, the plaintiff's expert has taken pictures of the table. One of the jurors, whose husband is an amateur photographer, argues that it is easy to alter photographs so that the pictures cannot be trusted. (n=128)	Appropriately 57.8% (Judges = 58.8%) (Attorneys = 56.7%) Inappropriately 42.2%
Scenario 3. In a tort suit, a physician on the jury convinces her fellow jurors that the medical expert who testified for the plaintiff was incorrect in claiming that the plaintiff's injury made him more susceptible to the viral infection he contracted six months after the accident. (n=127)	Appropriately 38.6% (Judges = 44.1%) (Attorneys = 32.2%) Inappropriately 61.4%
Scenario 4. In a motor vehicle tort case, the defense expert testified that, based on the minimal damage to the vehicle, the plaintiff could not have received the severe injuries he was claiming. An artist on the jury who creates metal sculptures by welding metal components, explains that the defense expert is correct because, as the artist knows, metal of that gauge dents easily. (n=127)	Appropriately 66.1% (Judges = 58.8%) (Attorneys = 74.6%) Inappropriately 33.9% (judges vs. attorneys, p<.10)

<p><i>Table 6 cont.</i></p> <p>Scenario 5. A lawyer on the jury answers a question from another juror about the meaning of one of the jury instructions. His answer is correct/incorrect. (n=127)</p> <p>Correct v. Incorrect: ($\chi = 9.02$, $p = .003$) Within correct, judges v. attorneys: ($\chi 4.20$, $p = .04$) Within incorrect, judges v. attorneys, no difference</p>	<p>Answer Correct:</p> <p>Appropriately 55.4% (Judges = 44.7%) (Attorneys = 70.4%) Inappropriately 44.6%</p> <p>Answer Incorrect:</p> <p>Appropriately 29.0% (Judges = 26.7%) (Attorneys = 31.3%) Inappropriately 71.0%</p>
<p>Scenario 6. The defendant is on trial for criminally negligent homicide in connection with the death of his girlfriend. There is conflicting medical testimony on the cause of death (repeated punching versus an embolism stimulated by intercourse too soon after giving birth). A nurse on the jury offers her professional analysis of the expert medical testimony. (n=123)</p>	<p>Appropriately 45.5% (Judges = 42.9%) (Attorneys = 48.3%) Inappropriately 55.4%</p>

The first four scenarios were based on events that occurred during deliberations on juries in the Arizona Jury Project.¹⁰⁰ The sixth is based on the New York case of *People v. Maragh*.¹⁰¹ The responses to these scenarios reveal little agreement with the exception of the first scenario. The behavior of the juror who offered the jury accurate but legally irrelevant information was labeled inappropriate by 85 percent of respondents. The minority position in all of the other scenarios captured at least a third of the respondents. The ordering of the scenarios on appropriateness of the juror's behavior was fairly comparable for the judges and attorneys as a whole, although the attorneys were significantly more likely than the judges to find correct advice on the law given by an attorney-juror to be appropriate. A majority of both judges and attorneys found the behavior of the photographer's spouse and the metal artist to be appropriate, although the attorneys were somewhat more accepting; a majority in both groups found the physician and the nurse to have behaved inappropriately. The specialized knowledge claimed in the latter two scenarios was both more technical and specialized, as well as more likely to be influential in view of the fact that the jurors in both of these cases were professionals. Finally, whether the respondents viewed the behavior

100. See *supra* Part II.B.4.

101. See *People v. Maragh*, 691 N.E.S.2d 918, 919 (App. Div. 1999).

of the attorney-juror as appropriate depended on whether he turned out to have given correct or incorrect advice on the law. With this hindsight¹⁰² information, the benefit—or alternatively, the cost—of his advice was clear.

The variation in response as to what constitutes juror misbehavior may be one reason why appellate courts have struggled—and differed—in responding to the use of juror expertise when it has come to their attention.¹⁰³ The relatively easy-to-administer rule captured in Federal Rule of Evidence 606(b) and adopted by many jurisdictions would rule out post-trial intervention in any of these situations, and yet many of the respondents found the juror's behavior inappropriate.

IV. WHAT (IF ANYTHING) SHOULD BE DONE ABOUT JUROR-EXPERTS?

The evidence from the survey of judges and attorneys presented in Part III is consistent with the ambivalent response of the legal system to juror-experts reflected in the case law on those rare occasions when use of specialized expertise comes to the attention of a court.¹⁰⁴ Thus, these sources provide little guidance on what steps, if any, should be taken in response to the increased presence of potential jurors with specialized expertise in the jury venire.¹⁰⁵

Two scholars have suggested that the presence of jurors with specialized knowledge warrants substantial court intervention at the outset. Professor Paul F. Kirgis draws an analogy to the court's gatekeeping obligation, described in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*,¹⁰⁶ to prevent an unqualified expert from testifying.¹⁰⁷ He concludes that “the only way to guard against spurious juror expertise is to ensure that jurors *do not have* expertise and so cannot misuse it in the jury room.”¹⁰⁸ The solution then is for the court to strike the juror for cause, expanding the availability of the challenge for cause beyond its traditional use in

102. See Baruch Fischhoff, *Hindsight ≠ Foresight: The Effect of Outcome Knowledge on Judgment Under Uncertainty*, 1 J. EXPERIMENTAL PSYCHOL.: HUM. PERCEPTION & PERFORMANCE 288, 288 (1975).

103. See *supra* notes 33-54 and accompanying text.

104. See *supra* Part I.

105. *Id.*

106. See 509 U.S. 579, 589 (1993).

107. See Paul F. Kirgis, *The Problem of the Expert Juror*, 75 TEMP. L. REV. 493, 527 (2002).

108. *Id.*

removing jurors who give an indication that they may be biased.¹⁰⁹ Professor Kirgis sees this approach as a way to avoid the high cost of overturning verdicts post-trial in response to the use of specialized information during deliberations.¹¹⁰ He also views the cost of the challenges for cause in this situation as relatively low, both because the juror is easily replaced and because the stricken juror can serve on another case in which his expertise will not be relevant.¹¹¹

Similarly, Professor Michael B. Mushlin, acknowledging that his proposal would constitute a major change in the law, also advocates expansion of the challenge for cause to make professional expertise a sufficient basis for removal.¹¹² While Kirgis would expand the challenge for cause only to professionals who would qualify as experts,¹¹³ Mushlin would use a more expansive definition of juror expertise, presumably covering a significant portion of the prospective jurors appearing in some modern jury venires.¹¹⁴ As he explains, his proposal “is meant to remedy the very real possibility that professional jurors routinely exert undue influence over trial outcomes.”¹¹⁵

The expansion of the challenge for cause to remove juror-experts is a substantial intervention in the jury selection process. Moreover, it has the effect of reducing heterogeneity on the jury and removing jurors who, as the deliberations from the Arizona Jury Project reveal, may make valuable contributions to the deliberation process.¹¹⁶ And, as the deliberations show,¹¹⁷ the fear that these jurors “routinely exert undue influence”¹¹⁸ appears to be inflated.

109. *Id.*

110. *Id.*

111. *Id.* at 527-28.

112. Michael B. Mushlin, *Bound and Gagged: The Peculiar Predicament of Professional Jurors*, 25 YALE L. & POL. REV. 239, 272-73 (2007).

113. See Kirgis, *supra* note 107, at 496 n.24 (describing focus on “those topics of juror background knowledge that implicate the *Daubert* principle”).

114. See Mushlin, *supra* note 112, at 272 (“The law should be changed so that professional expertise touching on an essential trial issue would, in and of itself, be sufficient cause to strike a prospective juror.”).

115. *Id.*

116. See *supra* Part II.B.2.

117. *Id.*

118. Mushlin, *supra* note 112, at 272. Professor Mushlin conducted a survey of twenty-nine jury consultants, at least three of whom reported instances in which they believed that professional jurors swayed the jury’s deliberations. *Id.* at 266-67, 269-70. It is difficult to know how representative these instances were or whether the reports were accurate, but it is worth noting that jury consultants are not typically hired for routine cases.

In response to the value of maximizing heterogeneity on the jury and the absence of evidence that jurors with specialized knowledge routinely exert undue influence, we would not favor changes in jury selection to remove such jurors. Yet we acknowledge the potential for undue influence from a juror who has neither been qualified as a testifying expert or been subject to cross-examination to test his opinions. That danger ought to be addressed.

Jurors currently receive no advice on how to handle their specialized knowledge.¹¹⁹ In view of the apparent lack of agreement on what constitutes appropriate juror use of specialized knowledge, the failure to provide any guidance is perhaps no surprise.¹²⁰ Instead of guidance, however, jurors are provided with mixed messages on what behavior is appropriate.¹²¹ The ambiguity of the current situation can leave attentive jurors unsure of what they should share concerning their own arguably relevant expertise. For example, here is the reaction of an Arizona Jury Project juror with medical training to the evidence about the cause of the plaintiff's health problems:

Juror 7: That's another thing, one of the things I was listening really carefully ... they didn't say ... They said two things that kind of confused me. They said we can bring our experiences ... to bear and our judgment and they also said you can't use any evidence that wasn't introduced.

Juror 6: Right

Juror 7: Now I can sit here and think a lot about the reasons she would have a lot of the symptomatology she does ... that they never said, 'What about this? What about this [*counts on fingers*] you know. Now, can we consider those things?

It seems inappropriate to leave this ambiguity unaddressed. Yet only New York, in response to *People v. Maragh*, has attempted to take on the challenge of striking out through the fog. The courts of New York have developed a jury instruction that at least acknowledges the expertise that jurors may possess:

119. See *supra* note 55 for a rare exception involving jurors with language expertise. See also *infra* note 123 and accompanying text.

120. See *supra* Part I.

121. See *supra* notes 14-18 and accompanying text.

Although as jurors you are encouraged to use all of your life experiences in analyzing testimony and reaching a fair verdict, you may not communicate any personal professional expertise you might have or other facts not in evidence to the other jurors during deliberations. You must base your discussions and decisions solely on the evidence presented to you during the trial.¹²²

This approach has two fundamental weaknesses. First, it assumes that the individual juror possessing specialized knowledge will be able to distinguish between what she knows as a professional and what she knows as a knowledgeable layperson. Consider, for example, the fact that steroids can be an anti-inflammatory used to treat injuries or a supplement used in body-building. Surely a health care professional knows this, but so do many people who have been injured and prescribed a steroidal anti-inflammatory. Second, following this instruction deprives the jury of the full contributions of its most knowledgeable members. In addition, it fails to enlist the full jury in the effort to sensibly examine and analyze the relevant evidence. An alternative approach would be to construct a more collaborative instruction that directly warns jurors about the potential limits of information offered by their fellow jurors. The result is that jurors with specialized knowledge would be free to share their relevant expertise, but the jury would be on notice to guard against uninformed overstepping. An instruction might look something like the following:

As jurors we expect you to draw on your common sense and experience in evaluating the evidence. Any background or experience that you or any other juror has may or may not help with the evaluation of the evidence.

Please remember that your views and those of your fellow jurors, whatever their backgrounds, have not been subjected to the testing of cross-examination in the courtroom.

When any juror claims to know something about the *law* that is not in my written instructions to you, you should check with me. The role of all jurors, even jurors who are lawyers, is to find the facts. It is not to determine the law. The law must come from me.¹²³

122. NEW YORK PATTERN JURY INSTRUCTIONS (CIVIL) 1:25A (3d ed. 2013).

123. The Arizona Jury Project had one attorney-juror and a series of paralegals, legal secretaries, and other jurors who claimed legal expertise, a total of twelve jurors in all, so that a legal quasi-expert appeared roughly on one jury in four or five. Some of these jurors made

Our observations of the Arizona juries reveal that when jurors feel that another juror may be going beyond what the evidence has shown, they regularly refer to the jury instruction that warns jurors not to speculate.¹²⁴ Applying this approach to expertise on the jury offers a promising way to assist jurors in managing the contributions of the often valuable, but potentially misleading, juror-expert in their midst.

inaccurate statements about the law, but none approached the totally inaccurate legal advice that a New York attorney-juror apparently gave the members of his jury in *23 Jones Street Associates v. Keebler-Beretta*, 676 N.Y.S.2d 802, 803 (Civ. Ct. 1998), *rev'd sub nom. 23 Jones St. Associates v. Beretta*, 699 N.Y.S.2d 250 (App. Term 1999), *aff'd*, 722 N.Y.S.2d 229 (App. Div. 2001). The petitioner in a holdover action was a landlord suing the widow of a man who was the tenant of a rent-controlled apartment when he died. *Id.* The issue was whether the widow resided in the apartment as her primary residence during the lifetime of her deceased husband. *Id.* Under the law, the widow had the burden of proof, but the attorney-juror apparently convinced the remaining jurors to change their verdict based on his representation that the landlord had the burden of proof to show that the widow had not lived in the apartment with her husband. *Id.* The trial court ordered a new trial. *Id.* at 808. Judge Shirley Werner Kornreich also described the modified instruction that she now gives to avoid this problem: "I instruct them, both in my preliminary charge and in my closing instruction, that even if one of their members is an attorney, they cannot accept the law from him or her. I tell them that as jurors, they are all equal in the jury room, even lawyers, and their role is to find the facts, not determine the law. I emphasize that the law must come from me alone." *Id.* at 804 n.2. The appellate court reinstated the verdict for the widow, expressing the view that the attorney-juror's professional experience "was a matter that he naturally brought with him to the deliberations, and his reliance on knowledge derived from that experience is outside the realm of impermissible influence." *Beretta*, 699 N.Y.S.2d at 251.

124. See Shari Seidman Diamond, Beth Murphy & Mary R. Rose, *The "Kettleful of Law" in Real Jury Deliberation: Successes, Failures, and Next Steps*, 106 NW. U. L. REV. 1537, 1555 (2012).