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Testing Jury Reforms

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INSIDE: How Far Will Runaway Juries Go • Jury Reform: What We Need and Why

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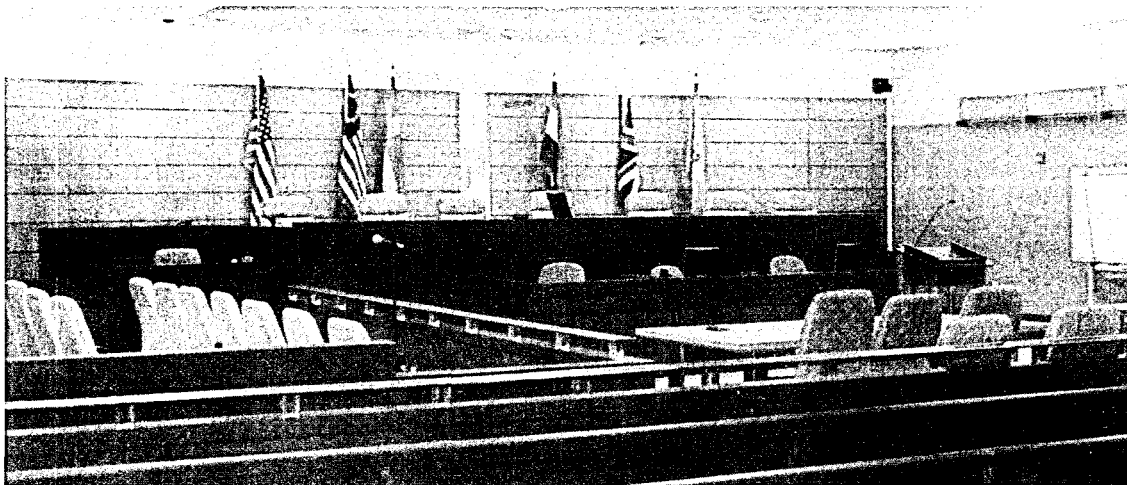
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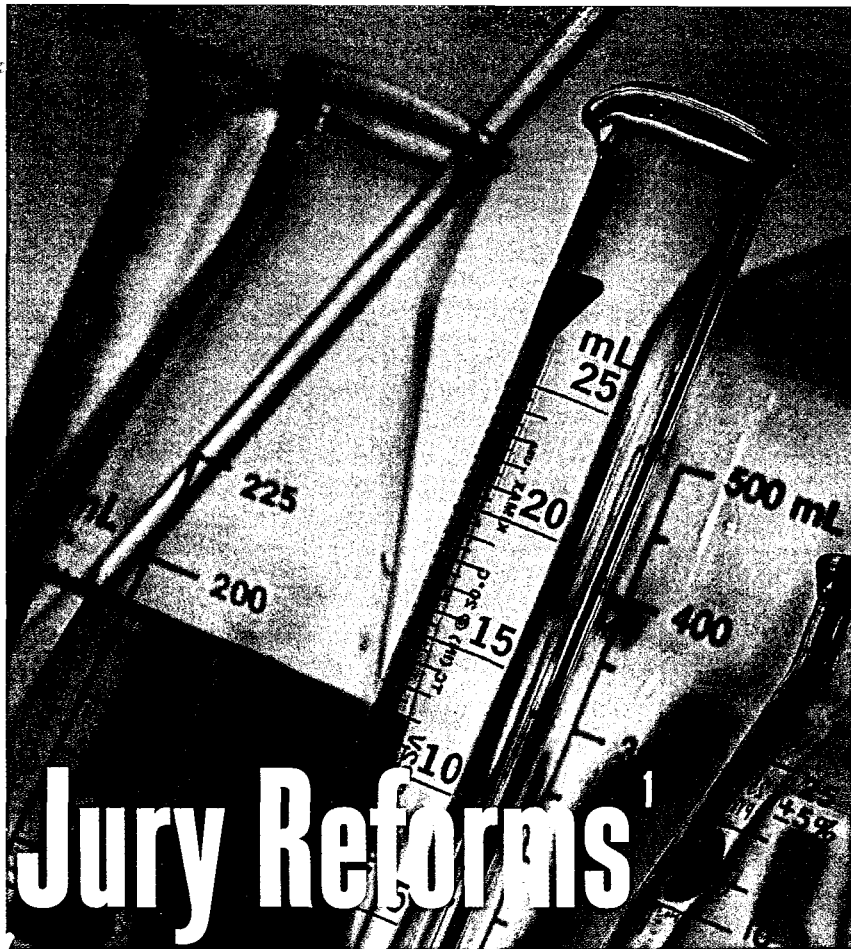
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Superior Court Courtroom 8B — New Castle County Courthouse

FEATURE

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Testing Jury Reforms

The basic conclusion is positive: Jury verdicts are strongly correlated with the weight of evidence in the case.

DNA evidence has become a key law enforcement tool and is increasingly presented in criminal trials in Delaware and elsewhere. The integrity of the criminal trial process turns upon the jury's ability to understand DNA evidence and to evaluate properly the testimony of experts. How well do they do? Can we assist them in the process?

Whether lay jurors can comprehend complex scientific and technical evidence has long been a focus of research by jury scholars. We now have decades of research examining jurors' abilities in decision-making. The basic conclusion is positive: Jury verdicts are strongly correlated with the weight of evidence in the case. Furthermore, judges agree with the vast majority of jury verdicts.² If we ask jurors themselves, though, they say that scientific and technical evidence presented through adversary expert witnesses can be quite challenging.³ Some studies suggest that statistics about matching DNA types can be difficult for laypeople to interpret.⁴

How can we help jurors? As both criminal and civil cases over the last decades have increasingly included complex evidence, jury reformers have proposed a variety of innovative trial procedures to assist jurors in complex

trials.⁵ These include basic reforms such as permitting note taking, through more controversial changes such as allowing jurors to ask questions of witnesses or to discuss the case together during the trial. Although reformers have endorsed many of these innovations, to be most successful in implementing them, we need to know more about how they operate in practice and which approaches are the most effective for a wide range of individuals.

Study Procedure

To study the effects of certain trial innovations, the authors conducted a research project in the fall of 2003 with the New Castle County jury pool. The study, funded by the National Institute of Justice, examined the use of several jury-reform techniques using a controlled mock-jury approach. New Castle County citizens who came to the courthouse to serve on jury duty,

and who were not needed for jury duty that day, were given the opportunity to volunteer for the research project, and many did so.

Mock juries composed of these jury-pool volunteers watched an hour-long videotape of an armed robbery trial, which featured conflicting expert testimony about a relatively new type of DNA evidence, mitochondrial DNA (mtDNA) evidence. Unlike nuclear DNA, mtDNA is found outside the nucleus and is maternally inherited. As a result, in some cases where nuclear DNA cannot be extracted from a sample, mtDNA testing is still possible. However, since mtDNA is maternally inherited, it cannot uniquely identify an individual.

The mock trial was based largely on an actual case from Connecticut. The crime was the armed robbery of a bank, in which a masked man wearing a blue hooded sweatshirt robbed a teller at gunpoint. Bank employees could not positively identify the robber. However, a police search of the area turned up a blue sweatshirt and stolen currency. Two human hairs were found in the sweatshirt hood, and they were subjected to mtDNA analysis.

An FBI analyst testifying for the prosecution concluded that the mtDNA profiles of the sweatshirt hairs and the hairs from the defendant matched, and that 99.98 percent of all Caucasian males would be excluded as potential contributors of the two mtDNA samples. That would mean, he said, that in the local Caucasian population, just six males could have provided the sweatshirt hairs.

The defense expert agreed that the mtDNA samples matched, but disagreed about the FBI agent's statistics. The defense expert asserted that the FBI's estimate of the percentage of the population excluded by the mtDNA evidence was too large because the FBI failed to account properly for the possibility of heteroplasmy (slight variations in the sequences of base pairs) in different hairs from the same individual. Accounting for this possibility, the defense expert reduced the FBI's percentage to 99.80 percent and said that fully 57 males in the locality could have supplied the mtDNA found in the

sweatshirt hairs.

The defendant denied committing the robbery. The circumstantial evidence was purposefully ambiguous so the jurors would find it necessary to address the mtDNA identification evidence and resolve the issues raised by the experts.

Some mock juries simply watched the videotape and deliberated to a verdict. Others were permitted to take notes, ask questions about the scientific evidence of experts who were standing by, use a checklist that provided a list of questions about the mtDNA evidence, or refer to jury notebooks containing background materials about mtDNA and the case.⁶ These reforms were selected by us and our National Institute of Justice Advisory Group, which included judges, attorneys, and DNA experts. The reforms were chosen from a range of promising jury trial innovations that have been considered or implemented in different jurisdictions.⁷

Results

Like actual jurors nationwide, the mock jurors who participated in our study expressed enthusiasm for the innovations, and frequently employed them when given the opportunity to do so. Figure 1 (see below) shows that when jurors were permitted to take notes, 88 percent of the mock jurors did so; 86 percent used DNA checklists when they were provided; and 92 percent referred to the notebooks when given

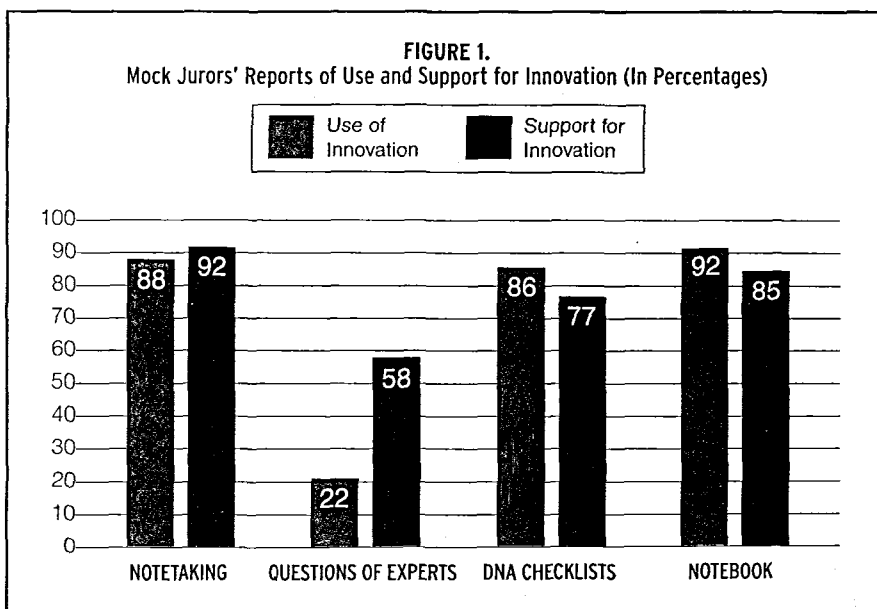
the chance.

However, a relatively low number, 22 percent, asked a question of a DNA expert when given the opportunity to do so. Most jurors who could ask questions but did not do so felt that there was no need for any questions. Of course, our mock jury study may not be a good reflection of how frequently jurors would ask questions in real-world jury trials of this complexity, but when jurors are able to ask questions in actual trials, the typical number of questions is fairly low.⁸

The strong support for jury innovations among our Delaware participants is similar to that found in other studies and other jurisdictions.⁹

Jury Performance

Jurors' comprehension of the mtDNA evidence was good, on the whole. We gave our participants true-false questions about mitochondrial DNA. Responses to specific mtDNA knowledge questions showed that as a group the mock jurors had good comprehension of certain aspects of mitochondrial DNA. Virtually all of our mock jurors, for example, were able to respond correctly to a basic question about whether nuclear DNA or mtDNA was the more definitive method of proving identity. Both of the expert witnesses, the prosecutor, and the defense attorney in the trial stated during the trial that nuclear DNA was superior, and that fact was obviously communicated



well to the mock jurors. A majority of our mock jurors also responded correctly to other basic knowledge items, such as the fact that mitochondria are found outside the nucleus of the cell, that the sequence of base pairs is important, and that mtDNA is maternally inherited. On the other hand, as has been found in other studies, some mock jurors made mistakes in inferences to be drawn from the statistical presentations of the competing experts.

Not surprisingly, comprehension was higher for mock jurors who had more formal years of education and more math and science courses. Interestingly, it was also better after jurors had a chance to deliberate together.

Use of some of the jury innovations appeared to improve comprehension of the mtDNA evidence, but the effects were modest and did not occur in all analyses. We compared the mock juries that had decided the case with or without being able to use the different innovations. In some analyses, the use of jury notebooks and a checklist improved juror comprehension after jury deliberation. In other analyses no effects on juror comprehension were detected. Jurors who took notes tended to do better, but once we controlled for the fact that more highly educated jurors were also more likely to take notes, the independent effect of note-taking disappeared. Jurors credited note-taking with helping them remember the evidence; it's possible that in a longer trial note-taking would assist jurors.

Conclusion

This study of jury trial innovations leads us to several conclusions. First, it is reassuring that most of the members of the jury pool showed good comprehension of basic information about complex scientific evidence presented during the mock trial.

It is interesting that the two innovations that appeared to have the most effect — the checklist and jury notebooks — were ones that gave jurors some reinforcement, background, or guidance on the scientific issues. Recall, too, that jurors who had more science and math courses were better able to comprehend the scientific evidence in

this trial. All of this suggests that in complex cases it may be valuable to provide more extensive background information about disputed complex issues. For instance, the material could be presented in individual juror notebooks and checklists could be devised that suggest a logical decisional pathway through the disputed issues. In addition, complex cases might begin with a jury tutorial or presentation by experts acceptable to both sides in a dispute.¹⁰ We look forward to continuing to explore the most effective ways to present complex evidence to juries. ♦

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the judges and staff of the Superior Court of Delaware in New Castle County, and 480 jury-eligible citizens of New Castle County who volunteered to serve on the half-day-long mock trials and deliberations.

2. Valerie P. Hans & Stephanie Albertson, *Empirical Research and Civil Jury Reform*, 78 NOTRE DAME L. REV. 101 (2003); Valerie P. Hans, Paula L. Hannaford-Agor, Nicole L. Mott, & G. Thomas Munsterman, *The Hung Jury: The American Jury's Insights and Contemporary Understanding*, 39 Crim. L. BULL. 33 (2003); Neil Vidmar, *The Performance of the American Civil Jury: An Empirical Perspective*, 40 ARIZ. L. REV. 849 (1999).

3. Sanja Kutnjak Ivkovich & Valerie P. Hans, *Jurors' Evaluations of Expert Testimony: Judging the Messenger and the Message*, 28 LAW & SOC. INQUIRY 441 (2003).

4. Dale A. Nance & Scott B. Morris, *An Empirical Assessment of Presentation Formats for Trace Evidence with a Relatively Large and Quantifiable Random Match Probability*, 42 JURIMETRICS J. 403 (2002).

5. Michael B. Dann, "Learning Lessons" and "Speaking Rights": *Created Educated and Democratic Juries*, 68 IND. L. J. 1229, 1249-53 (1993); JURY TRIAL INNOVATIONS (G. Thomas Munsterman, Paula L. Hannaford & G. Marc Whitehead, eds., National Center for State Courts 1997) (hereinafter JURY TRIAL INNOVATIONS); ENHANCING THE JURY SYSTEM: A GUIDEBOOK FOR JURY REFORM (American Judicature Society 1999).

6. Each notebook contained blank paper for note-taking, a glossary of mtDNA terms used in the case, copies of the experts' slides, and a witness list. In a condition that included all innovations, it also contained the mtDNA checklist.

7. JURY TRIAL INNOVATIONS, *supra* note 6.

8. Nicole L. Mott, *The Current Debate on Juror Questions: "To Ask or Not to Ask, That is the Question,"* 78 CHI.-KENT L. REV. 1099 (2003).

9. For a review, see B. Michael Dann & Valerie P. Hans, *Recent Evaluative Research on Jury Trial Innovations*, 41 COURT REV. 12 (2004). *See also* DEL. SUPER. CT., REPORT OF THE TASK FORCE ON THE MORE EFFECTIVE USE OF JURIES (1998), available at: <http://www.dsba.org/AssocPubs/tfrep.htm> (last visited on July 28, 2005).

10. Use of jury tutorials in trials of complex cases has produced positive results and has attracted supporters. *See, e.g.,* Verita Black, *An Interview With Judge Pamela Rymer*, 14 N.J.C. ALUMNI MAG. 10 (2000); JURY TRIAL INNOVATIONS, *supra* note 6.

FOOTNOTES

1. This article summarizes results reported in B. MICHAEL DANN, VALERIE P. HANS, & DAVID H. KAYE, TESTING THE EFFECTS OF SELECTED JURY TRIAL INNOVATIONS ON JUROR COMPREHENSION OF CONTESTED MTDNA EVIDENCE, FINAL TECHNICAL REPORT (2004). The research project was supported by Grant No. 2002-IJ-CX-0026 from the National Institute of Justice, Office of Justice Programs, U.S. Department of Justice. Points of view expressed in this article are those of the authors and do not necessarily represent the official position or policies of the U.S. Department of Justice. The authors wish to express our appreciation to