

Tablets in the Jury Room: Enhancing Performance while Undermining Fairness?

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Introduction

Conflict between principles of efficiency and fairness appears to characterize everything from taxation policy¹ to managing plea bargaining² and allocating water.³ Giving iPads—or other computer tablets—to criminal juries raises similar concerns. The use of tablets could cause juror recall of evidence to improve or deliberation to accelerate. At the same time, some jurors may be disadvantaged, and undue weight might be placed on memorable pieces of evidence. Therefore, there may be a risk to a fair trial, and defendants who might otherwise be acquitted may be convicted.

This paper reports on the results of an experimental pre-test that examines the core issue of the risk to a fair trial using mock jurors and a written scenario, with 6-person juries deliberating for 15–30 minutes with visual evidence provided to them either on paper or tablets.

The study is funded by the Canadian Social Sciences and Humanities Research Council as part of the cyberjustice consortium based at the University of Montreal and headed by Karim Benyekhlef. The study has been developed by a team including David Tait (Western Sydney University), Christian Licoppe (Paris Tech), Meredith Rossner (London School of Economics) and Blake McKimmie (University of Queensland). The cyberjustice consortium brings together scholars from several countries with an interest in the impacts of emerging technologies on justice processes.

The aim of the tablets in the jury room project is to determine how use of tablets shapes the ways that juries think about and deliberate on evidence. This will be achieved by (1) documenting the current processes used to provide jurors with written and visual evidence; (2) examining the ways jurors and juries think about and deliberate on evidence using different technologies, with particular reference to the accuracy of recall, the comprehensiveness of issues reviewed, and interaction and collaboration among jurors; (3) measuring the impact of tablet use on fairness of the process and reliability of verdicts; and (4) developing protocols that optimize the quality and fairness of juror deliberation processes.

Background

In most common law jurisdictions, the right to be tried by a jury of one's peers is a fundamental right.⁴ Fairness includes the right to a timely hearing before an impartial judge, with opportunity to confront one's accusers. Information given to jurors is carefully regulated to protect the rights of the accused and to ensure that jurors decide the case only on the basis of evidence tested in the courtroom. For instance, potential jurors with prior knowledge of a case may be excluded, and jurors may not conduct independent research using external sources.⁵

Traditionally, jurors had to base their decisions almost exclusively on oral evidence presented in an open court; this could include confessions, eyewitness testimony, and expert evidence. This was at times supplemented by physical evidence (e.g., the alleged murder weapon) or a representation (e.g., an X-ray), which was generally shown to the jury within the courtroom. If the jury had a subsequent query about evidence, they filed back into the courtroom and the judge read the transcript or presented the relevant item to them again. But criminal trials are becoming more complicated, and jurors can find it difficult to process the information and the evidence presented to them, with judicial reminders an inefficient way of assisting recall.⁶ As trials become more complex, jurors may resort to stereotypes and decision-cues to evaluate the evidence and make a decision,⁷ and may also fail to systematically consider all the issues.⁸ These practices can erode the quality and fairness of juror deliberation processes.

To encourage more informed jury decisions, Australian judges—as well as judges in other common law countries—increasingly

provide jurors with evidence to take with them into the jury room,⁹ including interview transcripts, witness statements, photographs, and video footage. This may improve both individual and group decision-making processes. For individual jurors, technological aids can prompt juror memory, enhance comprehension, and increase engagement; for the jury as a whole, it may improve the thoroughness of the deliberation.¹⁰ Providing each juror with his or her own copy of the evidence may encourage critical discussion and healthy debate among jurors—this in turn can challenge prejudices and lead to fairer outcomes.¹¹ Combining oral discussion with visual display could provide the jury with an efficient way of managing cognitive load.¹²

In general, mobile technologies may help to break down the so-called digital divide, bringing internet and information access to ordinary people through easy-to-use devices.¹³ Tablets can improve learning outcomes for kindergarten pupils,¹⁴ people with intellectual disabilities,¹⁵ management students,¹⁶ and even apes and dolphins.¹⁷ Jurors are quintessential learners; they are chosen because they know nothing about the case and have no assumed knowledge of the science used in evidence. So tablets may improve their ability to follow the case. For “net generation” jurors who have spent on average 10,000 hours playing computer games and less than 5,000 hours reading books, screens will be more familiar than books.¹⁸ In other settings, tablets may assist learners develop their imagination,¹⁹ but the story jurors are asked to assess is that given to them by the prosecution. Their “learning” should not involve developing their own alternative narrative. Powerful or graphic imagery can influence verdicts, so readily accessed images and documents might exacerbate this problem.²⁰ Relative to the use of paper-based information and evidence, a tablet might also deflect the jurors’ attention from the group project;²¹ this in turn can undermine quality decision-making by the collective.²²

On the other hand, providing jurors with a shared display that is linked to individual tablets might mitigate concerns about reduced juror interaction and allow the jury, as a collective, to become an “information processor” or a sense-making unit.²³ In this configuration, tablets are sites of action, enabling individual jurors to source relevant information, while the shared screen enables the collective to identify patterns and test claims.²⁴ This is not limited to high-tech solutions. There are various types of “multi-surface environments,” including an interactive whiteboard managed by a single user or multiple users; interactive multi-user desktop screens (activated by fingers

or smartphones); as well as plasma screens that serve as pinboards. Each of these may support different levels of accessibility and collaboration.²⁵ One issue that is particularly relevant to this research is the relative impact on collaboration of shared access to the common space or delegated control of this shared space to a single group member.²⁶ The particular configuration of technologies is likely to shape the ways jurors and juries think about and deliberate on evidence.

The jury environment is rather different from other contexts in which co-located participants collaborate: (1) jurors may not conduct independent research about the case; (2) jurors are under pressure to achieve consensus (or super-majority); (3) with 12 members, juries represent a large group, relative to the groups of 2 to 6 participants used in other research;²⁷ (4) jurors have no stake in the matter under investigation; (5) jurors are strangers to each other; and (6) the consequences of their decision for the lives of others can be substantial.

Methodology

The results reported here are from a pre-test of a larger field experiment investigating the impact of tablets on jurors in court. The pre-test reported here is designed to develop the script, develop observational methodology to analyze juror interactions, and provide initial estimates of likely effect sizes.

The study is made up of a sample of 106 mock jurors split into groups of four- to six-member juries. The sessions were held over a two-week period in March 2014. Jurors, undergraduate psychology students at the University of Queensland, read a five-page scenario (with six images included), taking about ten minutes. The scenario involved an accusation of an armed robbery of a bank, in which the identity of the accused was ambiguous based on evidence from a CCTV camera (he had a hat pulled down), and there was no evidence he was armed, but a link was established to the getaway car. The images were sourced from online newspaper accounts of an actual bank robbery in Sydney. The scenario was written to create some, but not too much, doubt and tested so that about 50% of the sample would return a guilty verdict. This was to encourage deliberation and it could also increase the influence of “peripheral” cues like the form in which evidence was produced on decision-making.

Groups were randomly assigned to one of two conditions for deliberation: with paper or tablet (an iPad), subject to the constraint

that there were equal numbers of groups in each condition. Fifty-four of the jurors were in ten tablet groups, and fifty-two were in ten paper groups. Groups deliberated for 15–20 minutes, then completed a written survey.

Research participants completed a pre-deliberation verdict form to indicate their initial decision about guilt. Three responses were possible: guilty of armed robbery; guilty of robbery; not guilty. Post-deliberation measures included prior attitudes, reactions to evidence from prosecution and defence, reactions to the accused, reactions to the jury deliberation, and various measures of the culpability of the accused. Given the short scenario and brief deliberation time, one of the key items for the main study, comprehensiveness of memory, was not tested.

With respect to the post-deliberation verdict, jurors were asked to indicate the decision of their jury (guilty of armed robbery, guilty of robbery, or not guilty) rather than their individual view. Individual perspectives were obtained on the basis of an open-ended question that asked about the elements of the evidence that weighed in their decision, plus the likelihood of guilt and their confidence in their verdict. In most cases, their verdict choice was clear, apart from two cases where their answers were too vague; these cases were dropped from this part of the analysis. There were also two cases where the research participant indicated their post-deliberation verdict to be “Guilty of Armed Robbery,” but in their detailed reasoning stated they found him guilty of robbery. In both cases the written argument was taken to be the respondents’ correct verdict.

Analysis

There were significantly different individual verdicts based on the form of evidence used by the jury: jurors who used tablets were significantly more likely to convict than were jurors deliberating with paper. There are two ways of measuring this effect: by the juror verdict and by their estimate of likelihood of guilt.

Both sources of data showed the same pattern: jurors who used tablets for evidence review were more likely to convict and provided higher ratings for likelihood of guilt. One quarter (25%) of the jurors who used paper found the accused guilty after deliberation, compared to 56% of those using tablets ($B=.43$, $SE=.21$, $df=1$, $Wald=4.4$, $p=.04$). The conviction rate before deliberation was almost the same:

79% for the paper condition and 76% for the tablet condition. Likelihood of guilt was measured on a scale of 1 to 7. Jurors who used paper had an average score of 5.0 compared to jurors using tablets, who scored 5.85 ($F=10.2$, $p=.002$).

The same pattern holds when comparing *changes* in the scores for individuals. Jurors using paper *decreased* their likelihood of guilt score from their pre-deliberation to their post-deliberation survey (from 5.38 to 5.00), while jurors using tablets *increased* from 5.45 to 5.85 ($F=9.2$, $p=.003$).

A variety of other differences are consistent with the apparent enhanced perception of guilt that characterized those who deliberated using tablets. Those who used tablets found the prosecutor to be more credible than did those who used paper (4.9 vs. 4.2, $F=9.6$, $p=.002$), but did not display any differences in their evaluations of the defense lawyer. Given that the participants saw neither a prosecutor nor a defense lawyer, this difference probably just means that they agreed with the written statements about the case, described as the argument of the prosecutor. So perhaps this is just another way of characterizing perceived guilt. The tablet users in general also found the defendant to be more dangerous and violent (-.27 vs. .26, $F=7.9$, $p=.006$), and generally to be of bad character (-2.6 vs. 2.4, $F=6.8$, $p=.01$). The tablet users who considered him guilty after deliberation considered him *more* dangerous and violent than the paper users who considered him guilty (.54 vs. .08). Perhaps the vividness of the images somehow made him seem guiltier when tablets were used.

It should be noted that the difference between the groups was not in their initial views, which were almost identical. Instead, the difference between the groups emerged only in the results after deliberation, including the verdict (guilt down 54 percentage points for jurors using paper, but down only 20 points for those using tablets), and likelihood of guilt (down .38 for those using paper, up .48 for those using tablets). There was a small but non-significant difference between the groups in terms of satisfaction with the process of deliberation (5.6 for paper group, 5.3 for tablet group, $F=1.3$, $p=.26$). Jurors using tablets also reported slightly higher (but non significant) likelihood of "being pressured to agree" (2.6 vs. 2.2, $F=1.6$, $p=.21$); tablet jurors were also slightly more likely (non-significant difference) to indicate that they could "openly disagree" with other jurors (5.9 vs. 5.5, $F=2.4$, $p=.12$). There was a significantly higher level of conflict in the tablets groups, with the tablet jurors

reporting more frequent incidents of “conflict about ideas” (3.2 vs. 2.8, $F=3.3$, $p=0.07$) and more “differences of opinion” (3.6 vs. 2.9, $F=9.3$, $p=.003$). So perhaps tablets gave jurors a chance to engage in a more vigorous democratic dialogue than is supported by more traditional forms of evidence.

So far the analysis has focused on individual jurors irrespective of the group within which they deliberated. Given the possible role of group dynamics on final outcomes, it is expected that the pre-deliberation disposition of the jury group would have an impact on the likelihood of individual members shifting their vote over the course of the deliberation. In particular, it would be expected that unanimous pro-guilt juries would move less than ones that are split, and that the more jurors voting not guilty to begin with, the more likely the group will move toward not-guilty verdicts. Six of the twenty juries were unanimous in finding the accused guilty before deliberation, while none of the juries were unanimous in finding him not guilty. This means that fourteen juries were split, six juries had one juror standing out against the tide of guilty verdicts, six had two jurors voting not guilty, while the remaining two had three jurors finding the accused not guilty.

For jurors in groups that used paper, but *not* tablets, during deliberation, there was a marked impact of having at least one *other* juror in the group who had voted not guilty before deliberation (27% guilty post-deliberation when at least one juror had made a pre-deliberation determination of not guilty vs. 48% on a jury with no juror voting not guilty before deliberation), and a similar pattern held for evaluations of likelihood of guilt (4.8 post-deliberation rating if at least *one* juror had voted not guilty before deliberation, compared to 5.2 if all jurors had voted guilty before deliberation). No such differences emerged for jurors in groups that used tablets (67% vs. 78% post-deliberation guilty verdicts, and 5.83 vs. 5.86 post-deliberation ratings for likelihood of guilt).

This suggests an interaction between experimental condition and number of other jurors voting not guilty. The jury verdict composition had an impact on the paper group and no discernible impact on the tablet group. Tablets perhaps immunize jurors from influence by others as they (arguably) put their heads down and concentrate on their own interpretation of the evidence. What will be important to see is whether sharing software remedies this anti-social tendency that the technology seems to encourage.

Discussion and Conclusion

Do tablets increase conflict, provide more space for open debate, or give undue weight to prosecution evidence? Such debates cannot be resolved with preliminary data from a test like this.²⁸

The differences in post-deliberation verdicts and evaluations of likelihood of guilt reported here seem rather large and may reflect the nature of the experiment with written rather than oral testimony. A fuller study with a more representative sample and more realistic conditions with a live performance in a real court could produce somewhat different (probably more muted) differences between conditions.

Nonetheless, the study suggests a number of interesting hypotheses that can be explored more fully in a major study. The first hypothesis that emerges from these preliminary findings is that providing juries with evidence on tablets, which may be a more intensive or memorable medium, could undermine the fairness of the trial by increasing focus on and response to the prosecution evidence. This is particularly an issue because most of the evidence tends to come from the prosecution. Further, when the defense seeks only to counter the prosecution's case and does not provide equally graphic evidence of its own (which of course it is not required to do), it is at an additional disadvantage. The evidence used in this study was prosecution evidence; we have not tested the impact of tablets when defense evidence is also presented. Whether the colour of the images, the tactility of the medium, or the image on the screen adds extra veracity to the evidence also cannot be established from this preliminary study.

The second hypothesis is that having evidence on tablets may encourage a more vigorous debate, allowing minority voices to be heard and jurors more liberty to disagree. There is, however, another possibility that might also be considered: tablets may encourage greater compromise, in this case at the expense of the accused. This could be an issue where the defense is considering whether to allow alternative verdicts for juries.

The findings presented here are preliminary. The jurors in our study were students, who read a short scenario and engaged in a short deliberation. Future research with greater ecological validity and verisimilitude will produce more comprehensive findings.

Future research will also consider the use of sharing technology, allowing jurors to send images and notations to each other or to a shared screen. It is possible that such technology will influence the way the evidence is perceived as well as the quality of the deliberation. One thing is clear: if the results of this study were to hold for real-world trials, defendants (at least those who are not presenting any evidence of their own) should strongly prefer deliberation using paper evidence rather than evidence presented via tablet.

Notes

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- 11 Jasmine S Rijnbout and Blake M McKimmie, "Deviance in Organizational Group Decision-Making: The Role of Information Processing, Confidence, and Elaboration," *Group Processes & Intergroup Relations* 15 (2012) at 813.
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 - 26 D Stanton and H R Neale, "The Effects of Multiple Mice on Children's Talk and Interaction," *Journal of Computer Assisted Learning* 19 (2003) at 229.
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 - 28 For a subsequent analysis using jurors drawn from a real jury pool, more realistic research materials and a larger sample, see Laura W McDonald, David Tait, Karen Gelb, Meredith Rossner, and Blake M. McKimmie. "Digital evidence in the jury room: The impact of mobile technology on the jury." *Current Issues Crim. Just.* 27 (2015) at 179.

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