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Assisting jurors: Promoting recall of trial information through the use of a Trial-Ordered Notebook

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Abstract

Purpose: The current study examined the effects of note-taking on juror recall of trial information and, specifically, investigated whether providing mock jurors with a pre-structured Trial-Ordered Notebook (TON) was more beneficial for subsequent recall than freestyle note-taking by jurors. Previous research has demonstrated some benefits of freestyle note-taking. However, drawing on theories relating to note-taking developed in educational contexts, we predicted that providing jurors with a note-taking aid designed to follow the trial structure would facilitate enhanced performance on a subsequent recall task.

Method: Community-based participants served as mock jurors in a criminal trial and were permitted to take notes during the trial, using either the structured TON or plain paper ('freestyle' note-taking) while participants in a control condition were not permitted to take notes. After watching the trial video, all participants reached an individual verdict and responded to cued recall questions concerning details of the trial.

Results: Mock jurors using the TON to take notes correctly recorded significantly more legally relevant details during the trial and reported more correct information in the post-trial recall task than participants who took unaided notes (or those who made no notes at all). TON participants also reported more correct relevant legal information and evaluated their experience of note-taking more positively than those in the free note-taking condition.

Conclusions: The findings are discussed in relation to differences in individual experience of taking notes and the benefits that may accrue from an innovative juror aid such as the Trial-Ordered Notebook.

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When members of the public are requested to attend jury service, they enter an environment and process that is peculiar and unfamiliar to them (ForsterLee, Kent & Horowitz, 2005). This experience can be stressful and confusing for many jurors (see Dabbs, 1992; Feldman & Bell, 1991; Hafemeister & Ventis, 1994; Kaplan & Winget, 1992). Juror discomfort may be due to a wide variety of factors, including case characteristics (Costanzo & Costanzo, 1994), the perceived 'burden of justice' (Haney, Sontag & Costanzo, 1994) and complex or confusing evidence (Bornstein, Miller, Nemeth, Page & Musil, 2005; Diamond, 1993). However, the Courts have often been reluctant to adopt procedural measures to assist or support juror decision making. As Lord Justice Auld (2001) concluded "once they are in the jury box we still subject them to archaic and artificial procedures that impede them in their task" (p.165).

Frequent calls for jury reform within adversarial systems and concerns about the use of juries in complex trials have stimulated research on the ways in which jurors might be assisted in their task (e.g. Brewer, Harvey & Semmler, 2004; Elek, Ware, & Ratcliff, 2011; ForsterLee, Kent & Horowitz, 2005; Martire & Kemp, 2011). In particular, research has focused on innovations which increase the involvement or engagement of the juror in the trial e.g. encouraging juror note-taking, allowing jurors to ask questions during the trial, permitting jury discussion during trials (Dann & Hans, 2004; Robbennolt, Groscup, Penrod & Heuer, 2005). Drawing on theory and research from the educational context, the current research seeks to extend this work and evaluate the effectiveness of a Trial-Ordered Notebook (TON) designed to support note-taking by jurors.

Note-Taking by Jurors

Juror note-taking has been described as 'the least controversial of all the innovations' (Cowan et al., 2003, p.1932). Note-taking by jury members is permitted (with some exceptions) in most adversarial systems. In the U. S. the decision to allow note-taking has been legislated state by state (see Dann, Hans & Kaye, 2004). In both the U. K. and the U. S. jurors typically make notes onto blank paper such that the format, structure and content of any notes made are entirely at the discretion of the note-taker. However, that note-taking is widely available to jurors is not to suggest that judicial response to note-taking has been universally positive. Broadly, concerns have focused on two key issues: firstly, that jurors who take notes may be distracted from the trial and miss key evidence while concentrating on writing notes and secondly, that the juror with the 'best' set of notes might wield undue influence (for an example of this argument see *United States v. Darden* in Robbennolt et al., 2005). Penrod and Heuer (1988) addressed a number of these judicial concerns with respect to note-taking. Specifically, they examined the notion that jurors who take notes may not be able to keep pace with the trial and simultaneously keep an accurate record of proceedings unless they already possess professional note-taking skills (such as short-hand). They also explored the possibility that such jurors might over-emphasize the importance of information they have made notes about and exert undue influence on other jurors who do not have matching or adequate notes. These concerns (and others) have been used by courts to prohibit note-taking (e.g. *Fischer v. Fishcher, 1966; Thornton v. Weaber, 1955; Watkins v State, 1965*). However, in a field experiment (examining 160 trials), Heuer and Penrod (1994) refuted most of these perceived disadvantages,

reporting that note-takers do not necessarily have undue influence over other jurors, cause distraction or encounter particular difficulties keeping pace with the trial.

Research to date on juror note-taking has largely identified positive benefits of note-taking by jurors. In particular, attention has been paid to role of juror note-taking during trials as a means to facilitate both understanding and recall of the evidence and key legal issues (Flango, 1980; ForsterLee, Horowitz & Bourgeois, 1994; Heuer & Penrod, 1988; Horowitz & ForsterLee, 2001). A number of studies have reported enhanced recall of trial material among note-takers (ForsterLee et al., 2005; Horowitz & ForsterLee, 2001; Rosenhan, Eiser & Robinson, 1994). Rosenhan et al. (1994) found that jurors who took notes demonstrated enhanced recall and rated themselves as more attentive to trial proceedings than non-notetakers. Furthermore, the quantity and organization of notes were positively associated with the accurate recall of trial information. It has also been suggested that taking notes might increase juror involvement in the trial process resulting in greater levels of satisfaction (Flango, 1980; ForsterLee et al., 2005).

Note-taking has been found to improve the overall competence of jurors in more complex civil trials. For instance, note-taking jurors are more likely to make legally valid differentiations between plaintiffs than jurors who did not take notes (ForsterLee et al., 1994). Horowitz and ForsterLee (2001) also found that note-taking jurors made less recognition errors and discriminated better between false lures and actual trial facts than those who did not take notes, suggesting a more systemic processing of the evidence. However, Heuer and Penrod (1994) did not find support for the notion that note-taking served as a useful memory aid and also noted that note-taking did not increase juror satisfaction with the verdict or trial. Thus, findings with respect to enhanced recall and comprehension as a function of note-taking are somewhat mixed. Recent experimental results suggest that note-taking is beneficial to some degree (e.g. ForsterLee

et al., 2005) but field data, perhaps due to a lack of sensitivity, has failed to capture systematic benefits for note-takers.

Discrepancies across studies may be due to methodological factors (e.g. nature of self-report) or, simply, that jurors have different skills and expertise in note-taking. For instance, in a study by Matthews, Hancock and Briggs (2004) examining the experience of actual jurors, a number of jurors indicated after the trial that they were confused about whether or not they should have taken notes and revealed that they "had a problem knowing what to write down, and how much to write down" (p.40). Such findings suggest that jurors may not share the same (potentially) beneficial experience of taking notes due to confusion about what is required or a lack of experience in note-taking. This inequality may have important implications when jurors attempt to generate an organizational narrative or 'story' to account for the evidence (Pennington & Hastie, 1986, 1988, 1993). Access to only poor quality contemporaneous notes combined with poor recall of evidence could lead to the biased decision making or distorted (or otherwise unsound) verdict preferences. In sum, research suggests that jurors may struggle with the note-taking process itself and would, therefore, benefit from support or guidance with respect to note-taking as a task.

Consistent with most court practices, previous research on juror note-taking has only examined the effects of 'freestyle' individual note-taking on juror memory and trial comprehension whereby mock jurors are simply provided with pens and blank paper and permitted to take notes during the course of a trial at their own discretion. Diverging from this, Dann, Hans and Kaye (2006) tested a special juror notebook designed to improve understanding of complex evidence. This notebook did not specifically provide support for the structuring of notes in relation to the trial but did provide jurors with important information relevant for their

decision making task (i.e. a glossary of DNA terms and a specially prepared mtDNA checklist) and was shown to enhance juror comprehension of mtDNA evidence. Perhaps it is unsurprising that providing jurors with trial-relevant information is beneficial to the decision-making process. However, for cases involving less specialized information, there may be other ways in which to support juror decision making via note-taking tools. Rather than simply providing jurors with blank paper onto which to record their notes, we examined whether a specially designed notebook, structured to map onto the trial proceedings, would promote the recording and recall of trial evidence more than 'free-style' note-taking.

Note-taking in Educational Contexts

A good deal of research has been conducted on the role of structure in note-taking in educational contexts. The exercise of 'taking notes' is not simply the verbatim copying down of material that is being heard, read or observed. Note-taking also requires a degree of comprehension and selection as part of that process (Piolat, Olive & Kellogg, 2005). As a consequence, expertise in note-taking is greater in familiar contexts when 'cues' are available that indicate which pieces of information will be important for the required task. For instance, when making notes from written material, such cues may be obvious - books, journals, papers and magazines provide 'indicators' in the form of headings to identify the topic under discussion, paragraphing (or other formatting features) to suggest the next point or idea and the use of different fonts or typefaces to emphasize a point (Sanchez, Lorch & Lorch, 2001). From a theoretical perspective, Mayer's SOI (i.e. selection, organization and integration) model of learning provides support for the notion of organizational cuing as it relates to cognitive processes (Mayer, 1996). According to this model, meaningful learning occurs as the relevant information is processed and selected, organized into a coherent structure within working memory and then appropriately integrated with any existing

information in long-term memory. The model essentially proposes that learning is a process of structure building involving three main processes (selection, organization and integration). Therefore, it may be the case that organizational cuing (by means of structured headings for instance) facilitates at least two of the most important cognitive processes – selection and organization. In this vein, Sanchez et al. (2001) found that implementing a 'structure strategy' (p.426), by specific training or using headings, facilitated enhanced recall by inducing a change in encoding and recall strategies. Similarly, Titsworth and Kiewra (2004) examined whether organizational cues also served to increase the quality and quantity of notes. Results suggested that organizational cues not only boosted note-taking but also promoted enhanced recall of the target information.

In educational settings, research has typically been concerned with improving the quality of note-taking and has considered training in note-taking skills or strategies (e.g. Robin, Foxx, Martello & Archable, 1977; Spires, 1993), verbal instructions (Davis & Hult, 1997), the usefulness of 'framework' notes (Kiewra, Benton, Kim, Risch & Christensen, 1995) among other strategies to enhance the positive impact of note-taking. In a meta-analysis, Kobayashi (2006) examined whether interventions of this kind actually enhanced note-taking effects. The results of the meta-analysis indicated that providing a framework or outline notes (i.e. a resource that helped participants take their notes a particular way) was the most effective in enhancing the effects of note-taking (where the dependant measure was knowledge acquisition as determined by a variety of tests such as free recall, multiple choice tests, short answer questions etc). Kobayashi (2006) concluded that these well-structured frameworks directed the note-takers attention to the most important information and enabled them to focus on particular relevant

pieces of information in their notes. Importantly, the meta-analysis also revealed that participants at a lower academic level benefited most from this type of intervention.

Although most of the research on the cognitive aspects of note-taking has been conducted in educational settings, it is not too difficult to draw parallels with a courtroom setting. Jurors, from a variety of different educational backgrounds, are expected to listen to the oral presentation of evidence for long periods. In the processing of this information, they are expected to extricate the legally relevant information and arrive at a verdict based on the evidence presented. The information may be complex or very detailed and the sheer accumulation of information will likely place an undue burden on working memory and, drawing on Mayer's (1996) model, will inhibit the ability of jurors to organize and integrate new information.

The Current Study

In the current study, mock jurors were permitted to take notes using a specially developed Trial-Ordered Notebook (TON) designed to provide a 'framework' to support the structuring of notes taken during a trial. A comparison group simply made freestyle notes onto blank paper (consistent with current practice in many jurisdictions). It was predicted that both note-taking groups would outperform a control group (who were not permitted to take notes during the course of the trial) on recall and satisfaction measures. However, consistent with research on structured note-taking, it was also predicted that jurors who recorded their notes using the TON would demonstrate enhanced recall of trial information in comparison with those jurors who simply made freestyle notes. In line with findings by Titsworth and Kiewra (2004) it was predicted that those participants using the TON would take more notes during the trial than participants taking freestyle notes. Given more structured note-taking, and consistent with

Sanchez et al. (2001), we also predicted that participants in the TON condition would demonstrate better recall of *legally relevant* information than other note-taking participants.

Method

Design and Participants

Fifty-eight community-based participants (26 male) participated voluntarily in this study[i]. All participants were jury eligible in England and Wales. In the UK, citizens are considered jury eligible if they are aged between 18 and 70 years of age, listed on the electoral register, have been resident in the UK for the past five years, are not mentally disordered and are not disqualified for any other reason (e.g. on bail, served an extended prison service etc.). Participants were recruited via local organizations and community groups. Of the final sample, 22% of participants were aged 18 – 29 years, 43% aged 30 – 45 years, 22% aged 46 – 59 years and 13% aged 60 - 65 years. All participants had a minimum of secondary level education and were native English speakers. Participants took part voluntarily and were not remunerated for taking part in the study.

Participants were randomly assigned to one of three between subject conditions: i) Trial Order note-taking (n = 18); ii) Freestyle note-taking (n = 17) and iii) Control condition (no note-taking; n = 19). Each experimental session lasted approximately 80 minutes.

Materials

Trial Stimulus. In the simulated video trial, the defendant was charged with first degree felony murder and armed robbery. The trial began with an opening statement by the judge concerning the order of proceedings which was followed by opening statements from the prosecutor and defense lawyer. The prosecution called two witnesses (an eyewitness and the

arresting officer) who were both examined by the prosecution and defense. The defense called one witness who was also examined by the prosecution and defense. Following the evidence, closing statements were delivered by the prosecution followed by the defense. The trial concluded with judge's instructions. The judge instructed the jurors as to the relevant points of law, covering material regarding the charge, definitions of first degree murder, an explanation of what is meant by reasonable doubt in connection with verdicts of guilty and not guilty. The video trial, adapted from Danielson (2005), was approximately 35 minutes in duration.

Trial-Ordered Notebooks. Trial-Ordered Notebooks are designed to be generic booklets for jurors to record their notes in during a trial. The TON does not contain trial-specific information or questions and is flexible in format so that additional pages can be added to reflect the relevant number of witnesses or other participants in any given trial. As such, the TON should be suitable for note-taking during any criminal trial.

The TON prepared for the current study followed the order of the evidence presentation so that jurors could keep structured notes as the trial progressed. The first section of the booklet contained a very brief paragraph broadly outlining the order of proceedings. Jurors were informed they would hear opening statements, then the prosecution would call witnesses who would be cross-examined by the defense, the defense would call witnesses who would be cross examined by the prosecution and that finally they would hear closing statements and judicial instructions. In the current trial, three witnesses gave evidence and so the TON contained sections with the following main headings: Opening Statement, First Witness, Second Witness, Third Witness and Closing Statements. Each section also included sub-headings to enable the juror to make specific notes on the arguments, statements and responses generated by both Prosecution and Defense. Thus, the notebook was formatted such that notes could be recorded

within a table with clear main headings (e.g. Opening Statement) and sub-headings (i.e. Prosecution, Defense). There was space in the left-hand column (containing the sub-headings Prosecution or Defense) to write the name of the speaker with ample room for notes regarding what this person said in a larger right-hand column (see Figure 1 for a condensed partial schematic of the TON layout). In the TON used in the current study, two A4 pages were available for notes taken under each heading. In the final section, jurors were provided with space to make notes about the charge (as instructed by the judge). Space for any additional notes was provided at the back of the notebook. The format of the TON was piloted for ease of use and navigability. Feedback from pilot testing led to adaptations in the layout (e.g. switch from lined to unlined paper; formatting with headed sections and columns).

Recall Task. A set of 48 cued recall questions was prepared to test juror memory for details of the trial. To ensure a comprehensive test of trial information and to examine whether the TON enhanced differential reporting of different types of information, half of the questions concerned legally relevant details (24 items) while the other half concerned legally irrelevant details (24 items). The 'legally relevant' and 'legally irrelevant' distinctions were made by a legal advisor (an acting lawyer with 25 years legal and court experience). 'Legally relevant' questions concerned substantive elements of the evidence (e.g. Where was the witness when the crime was committed?; At what time was the crime committed?; What distance was the witness from where the crime took place?; How many blocks from the crime scene was the defendant arrested?; At what time did the suspect leave his girlfriend's house to go to the convenience store?). 'Legally irrelevant' questions concerned details that had no particular legal relevance for considering the substantive issues in this particular trial (e.g. What was the name of the store?; What police department did the witness work for?; What did the witness intend to buy at the

store?). The legal advisor also reviewed the question set to confirm that no important questions had been inadvertently omitted. Questions were piloted for clarity of expression and ease of understanding.

Procedure

Volunteers were invited to take part in a study on juror decision making but no further details of the study aims were provided prior to the test sessions. The study took place in a local community centre and sessions were offered both during the day and in the evening to encourage participation across demographics. Participants attended in groups of 10-15 per session and were seated at individual chairs and tables. Participants in all conditions viewed the same trial video which was projected onto a large screen at the front of the room. At the outset, the researcher ensured that all participants could see and hear the video clearly, instructed participants to wear spectacles if necessary and ensure any cell phones were switched off. All participants were asked to imagine they were jurors sitting in court hearing the evidence presented to them and were instructed to watch and listen carefully. They were also instructed to proceed through the session without conferring with other participants. Participants in the TON condition were supplied with the TON notebook and given time to familiarize themselves with the format, and ask any questions they might have concerning the notebook before the trial began. Participants in free note-taking condition were supplied with several sheets of blank paper. In both note-taking conditions, participants were instructed that they might use the supplied materials for taking notes during the trial. No further instructions as to how they should take notes were provided. Participants in the control condition did not receive any note-taking materials. None of the participants were informed that their recall of trial information would be tested. After viewing the trial video, mock jurors were required to indicate their verdict (guilty/not guilty). They were

also required to indicate (in percentages) their confidence that they had reached the correct verdict and their satisfaction with the verdict reached. Consistent with the local jurisdiction, no sentencing decisions were imposed. Participants were then asked to answer the 48 cued recall questions. Participants in both note-taking conditions were permitted to consult their notes for this task. After completing this task, note-taking participants were asked whether they found note-taking helpful. They were also asked to indicate what percentage of the trial information presented they believed they could remember. No time limits were imposed on the completion of these tasks. On completion of the response booklet(s), all participants were fully debriefed.

Coding

Notes. The notes recorded in both the TON and Free-noting taking conditions were coded such that each piece of information reported in the notes was classified as either correct or incorrect. A detail was deemed correct if it was present in the trial stimulus and noted correctly, and deemed incorrect if it was present in the video but noted incorrectly or if it was not mentioned in the stimulus at all. Each detail was coded e.g. if the notes recorded that the witness "saw profile and face for two minutes" and these details correctly represented the testimony given by the witness, three correct scores were awarded. Subjective remarks (such as "he looked nervous") were coded separately. To assess inter-coder reliability, five randomly selected sets of notes from each of the TON and Free note-taking conditions were coded by two independent scorers. There was a good level of agreement between coders for total correct details reported ($K = 0.78$, $p < .001$) and perfect agreement between coders for total incorrect details reported.

Cued Recall. Coding of responses to the cued recall questions was consistent with the coding of the notes and cued recall coding protocols elsewhere in the literature (e.g. Gabbert, Hope, Fisher & Jamieson, 2011). As participants frequently provided multiple details in response

to each question, coding noted the amount and accuracy of each separate item of information reported. One point was allocated for each correct and incorrect detail reported, for example, 'The perpetrator was Caucasian (1-point correct), with blonde hair (1-point correct) and blue jeans (2-points correct). 'Don't know' or blank responses were recorded as 'missing' and subjective remarks were not coded. Again, there was an acceptable level of agreement between coders for details reported ($K = 0.82$, $p < .001$).

Results

Overall, 83% of mock jurors returned a Not Guilty verdict and analysis of verdict choice suggested that there was no association between experimental condition and note-taking, $\chi < 1$. There were no differences between experimental conditions in terms of verdict confidence (TON $M = 91\%$; Freestyle Notes $M = 89\%$; Control $M = 90\%$) or verdict satisfaction (TON $M = 91\%$; Freestyle Notes $M = 94\%$; Control $M = 91\%$) ratings.

Content of Notes

With the exception of one participant in the Freestyle Notes condition who took no notes at all during the trial, all participants in the note-taking conditions made some notes during the trial. All participants in the TON condition took notes into the appropriate section of the note-book provided. Overall, participants in the TON condition, recorded more correct trial details in their notes than participants in the Free Note-taking condition, $t(33) = 4.52$, $p < .001$, $d = 1.57$; see Table 1 for means and deviations for details reported across each condition. Although the overall number of incorrect trial details was very small, TON participants recorded more incorrect details than Free Note-takers, $t(33) = 3.68$, $p < .001$, $d = 1.28$. A review of incorrect details recorded revealed these errors all reflected minor, legally irrelevant details. There was no

difference between conditions in the overall accuracy of notes taken (TON M = 98% accurate; Free Note-taking M = 99% accurate), $t(33) = 1.74$, $p = .09$, $d = .61$.

Adopting the definition of 'legally relevant' outlined above, a secondary coding was conducted to examine whether the TON elicited more notes on legally relevant details than unstructured free note-taking. Mock jurors in the TON condition recorded, on average, 37.12 (SD = 7.76) correct legally relevant details while mock jurors taking free notes recorded 25.44 (SD = 13.17) such details, $t(33) = 3.13$, $p = .004$, $d = 1.10$. No errors relating to legally relevant information were recorded in either condition.

There was a significant association between note-taking condition and whether notes contained subjective comments. Fifty-six per cent of participants in the Free Note-taking but only 18 per cent in the TON condition included subjective comments concerning witnesses in the trial, $\chi^2(33) = 5.31$, $p = .02$, $\varphi = .40$.

Recall of Trial Details

There was a significant difference between the conditions for the amount of trial information reported correctly, $F(2, 51) = 7.35$, $p < .01$, $f = .53$. Planned comparisons revealed that participants in the TON condition reported significantly more correct details on the cued recall task than participants in both the Freestyle Notes ($t(51) = -2.41$, $p = .02$, $d = .67$) and Control ($t(51) = -3.78$, $p < .001$, $d = 1.06$) conditions. Correct recall scores for participants in the Freestyle Notes condition did not differ from those obtained in the Control condition, $t(51) = 1.36$, $p = .18$. Overall recall accuracy, where accuracy rate was also calculated by dividing the total correct items by total responses to obtain the proportion of accurate responses, also differed between conditions, $F(2, 51) = 7.29$, $p < .01$, $f = .53$. Planned comparisons indicated that participants in the TON condition had higher overall accuracy rates on the recall task than

participants in the Control condition ($t(51) = -3.82$, $p < .001$, $d = 1.06$) while accuracy rates in the Freestyle Notes condition did not differ significantly from either the TON condition ($t(51) = -1.80$, $p = .08$) or the Control condition, $t(51) = -1.97$, $p = .06$. Means and standard deviations are presented in Table 2. Overall, the quantity of correct notes taken during the trial predicted final correct score on the cued recall test, $\beta = .37$, $t(30) = 2.21$, $p = .03$.

Examining legally relevant items only, there was a significant difference between groups for recall of these details correctly, $F(2, 51) = 14.31$, $p < .001$, $f = .75$. Participants in the TON condition recalled significantly more of the relevant trial details correctly than participants in the Freestyle Notes ($t(51) = -2.48$, $p = .02$, $d = .69$) and Control ($t(51) = -5.35$, $p < .001$, $d = 1.49$) conditions. Planned comparisons also indicated that participants in the Freestyle Notes condition recalled significantly more correct details than Control participants, $t(51) = 2.83$, $p < .01$, $d = .79$. There was also a significant difference between the conditions in terms of accuracy rate, $F(2, 51) = 16.63$, $p < .001$, $f = .81$. TON participants provided significantly more correct information than Control participants ($t(51) = 5.65$, $p < .001$, $d = 1.58$) as did Freestyle Notes participants, $t(51) = 3.85$, $p < .001$, $d = 1.07$. However, there was no difference between TON and Freestyle participants on this measure. For legally irrelevant details, there were no differences between the experimental conditions in terms of the number of correct responses or overall accuracy (see Table 1). There was also no difference in the number of missing responses between conditions, $F < 1$[ii]. Again, the quantity of correct legally relevant notes taken during the trial predicted final correct score on the cued recall test, $\beta = .38$, $t(30) = 2.26$, $p = .03$.

Despite the differences in recall, there was no difference by condition in participants self-reported ability to remember details of the trial – on average participants indicated that they

recalled 76% of the information presented in the trial correctly (TON M = 77%, Freestyle Notes M = 79%, Control M = 72%).

Use of Notebooks.

Participants were asked whether they thought taking notes during the trial helped them reach their verdict (yes/no response option). There was a significant association between type of note-taking and evaluation of note-taking, $\chi^2(1, 40) = 4.29$, $p < .05$, $\varphi = .33$. Specifically, 85% of participants in the TON condition indicated that they found note-taking helpful but only 55% of participants in the Freestyle Notes thought taking notes helped them reach a verdict.

Discussion

The findings add to a growing literature that suggest that note-taking is a beneficial activity for jurors (e.g. Dann et al., 2004; ForsterLee et al., 2005; Horowitz & ForsterLee, 2001; Rosenhan et al., 1994). Importantly, these finding also extend the literature to demonstrate that the development of more structured note-taking tools may further enhance juror recall and processing of trial information. To date, most studies have only examined self-directed free note-taking where the structure of the notes is very much a product of the discretion – and note-taking experience – of the (mock) juror. That self-directed note-taking may not benefit all jurors has also been documented in interviews with jurors, some of whom expressed difficulty in understanding how they should actually take notes during trials (Matthews, Hancock & Briggs, 2004). Certainly, in comparison with those who took Freestyle Notes, mock jurors in the current study who used the TON were not only able to report significantly more correct information

about the trial but were also more likely to indicate they found note-taking during the trial helpful.

The current results, which demonstrate an advantage for the use of a structured notebook, are entirely consistent with the wider literature on note-taking in non-forensic contexts. For example, the use of written organizational cues (such as headings) during note-taking has been shown to increase recall (Sanchez et al., 2001) and boost note-taking (Kiewra et al., 1995). The results of the current study suggest that community based mock jurors benefited in the same way from structured note-taking – or organizational cuing - during the course of the trial.

These findings might be explained in terms of Mayer's SOI model of learning (Mayer, 1996) which identifies the selection, organization and integration of information as critical for meaningful learning (or, in this case, encoding). Firstly, participants in the TON condition recorded significantly more legally relevant details in their notes. Thus, the structured headings of the TON provided jurors with organizational cues to guide the selection process and provide the necessary framework – or scaffolding – within which to organize incoming information (see Titsworth & Kiewra, 2004 for further discussion). Secondly, participants in the TON condition reported significantly more correct information in the post trial cued recall test. This finding is consistent with research suggesting that structuring information (such as the main ideas or proceedings) under organizational signals, such as headings, improves recall of information (Krug, George, Hannon & Glover, 1989; Lorch, Lorch & Inman, 1993; Mayer, Dyck & Cook, 1984). Sanchez, Lorch and Lorch (2001) also suggested that topic labels or 'cues' also serve as memory cues for related information. Thus, it may be the case that noting down information under appropriate and well-structured headings not only facilitates the recording of more information, but also facilitates the meaningful hierarchical structuring of information which aids

subsequent recall and reporting (Loman & Mayer, 1983; Lorch & Lorch, 1995; Meyer, 1984). Additionally, receiving a brief overview of the trial at the outset of the TON may also have enabled mock jurors to engage more efficiently with the structure of the TON and the trial itself.

Horowitz and ForsterLee (2001) have suggested that note-taking jurors are likely to process the evidence in a more systematic manner than those who do not take notes (cf., Cacioppo & Petty, 1979; Petty & Cacioppo, 1986). However, comprehension (or recall measures) is not an ideal proxy for enhanced decision making performance (see Bornstein & Greene, 2011). Whether or not the TON also serves to improve the quality of decision making remains an empirical matter. In the present study, most jurors reached similar verdicts irrespective of the experimental condition. Future research should focus on the performance of the TON when trial information is more complex or incorporates factors which should not influence jurors (e.g. pre-trial publicity, stereotypes or exposure to inadmissible evidence).

There are a number of limitations associated with the current study. As with all laboratory-based juror decision-making studies, it lacks the external validity associated with the actual experience of being a juror (for a full discussion of this issue and associated limitations, see Bornstein, 1999). However, in line with recommendations to enhance ecological validity (e.g. Studebaker et al., 2002), this study used a simulated video trial (as opposed to written transcripts or trial summaries) and drew on community based participants (as opposed to a more homogenous student sample). As mock jurors did not have the opportunity to deliberate, it is unclear what role note-takers (versus non note-takers) may have played in the deliberation process – or indeed, whether TON note-takers may have had an advantage given the greater quantity of notes produced in this condition. Future research should also consider the role played by notes during deliberations, identify how any discrepancies between note-takers are resolved

and examine whether those who make copious notes wield an advantage over those who take few notes.

Although we refer to 'juror recall' for the purposes of the current study, mock jurors in both note-taking conditions were permitted to consult their notes when responding to the recall questions. Thus, their recall was informed by the content of their notes and was not recall in the more usual sense. This methodology was adopted in line with previous research on this topic and on the applied grounds that real jurors should also have access to their notes when recalling information during jury deliberations. Nonetheless, as it is sometimes the case that jurors do not have access to their notes outside the trial or during deliberation (e.g. *R v. Rayment & Others*, see Lloyd-Bostock, 2007), future research might consider whether simply taking notes contributed to subsequent recall (without notes). Although the availability of notes during a recall task was manipulated by ForsterLee, Horowitz and Bourgeois (1994) for jurors who had simply made freestyle notes, it seems plausible that the generation of structured notes at encoding, using a tool such as the TON, may have a different impact on subsequent recall.

While further research is required to fully understand the mechanisms underpinning the beneficial effect of the trial ordered notebook, this is, to our knowledge, the first study drawing on theoretical perspectives form cognitive and educational psychology to develop and test a generic structured notebook format as a juror aid. It is promising that in recent years, courts have become less reluctant to assist jurors in their task and jury notebooks containing background information about the trial, lists of witnesses, copies of key exhibits etc. have been adopted in some U. S. jurisdictions (Myers, Reinstein & Griller, 1999; Dann, Hans & Kaye, 2007). Given these developments, the current study paves the way for the further development of tools to assist jurors in their task. Of course, the nature of the trial, the personality, experience

and delivery of the legal teams and witnesses and the complexity of the trial will all play an important role in the efficacy of any juror aid – however, this should not deter the courts from considering the use of memorial and comprehension aids to assist jurors in what is often a very complex and challenging task

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Figure 1. Partial schematic representation of the TON (Note that in the actual TON booklet, two A4 pages were available for note-taking under each heading**).**

Juror Notebook

Defendant Name:	
OPENING STATEMENTS	
Prosecution Name:	*Notes:*
Defense *Name:*	*Notes:*
FIRST WITNESS TESTIMONY	
Name:	
PROSECUTION QUESTIONS AND ANSWERS	
DEFENSE QUESTIONS AND ANSWERS	
SECOND WITNESS TESTIMONY	
Name:	
PROSECUTION QUESTIONS AND ANSWERS	
DEFENSE QUESTIONS AND ANSWERS	
THIRD WITNESS TESTIMONY	
Name:	
PROSECUTION QUESTIONS AND ANSWERS	
DEFENSE QUESTIONS AND ANSWERS	

Table 1. Mean number of correct and incorrect notes recorded in note-taking conditions for each key phase of the trial.

		TON		Free-Notes		*t*	*D*
		Mean	*SD*	*Mean*	*SD*		
Opening Statements	Correct	11.88	3.39	7.50	4.71	3.08*	1.10
	Incorrect	0.35	0.61	0.00	0.00	2.32*	0.83
First Witness	Correct	27.88	9.80	15.50	10.19	3.56**	1.28
	Incorrect	1.06	1.09	0.19	0.40	3.01**	1.08
Second Witness	Correct	16.47	4.19	9.87	6.21	3.59**	1.29
	Incorrect	0.59	0.24	0.06	0.25	0.04	0.01
Third Witness	Correct	22.06	6.09	12.31	7.49	4.12**	1.48
	Incorrect	0.82	1.38	0.18	0.54	1.72	0.61
Closing Arguments	Correct	8.12	4.89	2.68	3.86	3.52*	1.26
	Incorrect	0.24	0.56	0.00	0.00	1.62	0.58
Totals	Correct	86.41	22.24	47.87	26.67	4.52**	1.62
	Incorrect	2.52	2.12	0.44	0.81	3.68**	1.32

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

Table 2. Mean number of overall, legally relevant and legally irrelevant items recalled by condition.

		Structured Note-taking		Free Note-Taking		Control	
		M	*SD*	*M*	*SD*	*M*	*SD*
Total Items Recalled	Correct	40.50	4.93	36.17	4.72	33.71	6.19
	Incorrect	6.61	3.24	8.24	3.25	10.06	4.00
	Acc. Rate	0.86	0.06	0.82	0.06	0.77	0.08
Relevant Items Recalled	Correct	24.28	3.33	21.53	2.62	18.35	3.75
	Incorrect	3.78	1.95	4.71	2.02	6.59	1.91
	Acc. Rate	0.87	0.06	0.82	0.07	0.73	0.07
Irrelevant Items Recalled	Correct	16.22	2.82	14.65	2.76	15.35	2.87
	Incorrect	2.83	1.68	3.52	2.03	3.47	2.52
	Acc. Rate	0.85	0.08	0.81	0.09	0.82	0.11

[i]Four participants were unable to complete all questionnaires (due to commitments requiring them to leave the test session early). These participants have been excluded from the analyses.

[ii] Analyses were also conducted treating the Missing/Don't Know data as incorrect data. Including these data made no difference to the overall pattern of results.