Illustrations and other possible contributors to clarity in jury instructions

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Jurors often fail to understand legal concepts due to the complex language and method of delivery of these instructions (Charrow & Charrow, 1979; Sontag, 1990, cited in Patry & Penrod, 2013; Tiersma, 1995, cited in Tiersma, 1999). There have been multiple attempts to simplify judges' instructions to juries, some of which include employing readability formulas and simplifying the language of the text by removing ambiguous terms and complicated syntax. However, readability formulas seem to provide only a general indication of a text's difficulty, and the plain language approach has similarly been unsuccessful in significantly improving comprehension on its own. Therefore in order to truly improve understanding of legal concepts, one must go beyond focusing purely on linguistic factors. This overview of the literature examines how supplementing text with illustrations can increase jurors' understanding of legal concepts to a greater extent than what can be achieved when only the language of the text is simplified. This examination of illustrations in jury instructions considers the influence of ordering effects, metaphorical relatedness, and subjective perception, as well as the derived benefits from using illustrations such as a reduced cognitive load and enhanced mental models for jurors. This overview concluded that illustrated jury instructions, in addition to the use of readability formulas and plain language, can improve understanding of legal concepts in jurors and are therefore promising contributors to the construction of clearer jury instructions.

Keywords: jury instructions, illustrations, cognitive load, mental models, readability

Legal language is the source of many headaches among the general public. Warranties, waivers, and contracts inspire confusion due to the difficult language and complex style they employ (Tiersma, 1999). Judges' instructions to juries often consist of this very type of language and along with an environment ill-suited for learning, they can have detrimental consequences on the outcome of a trial (Severance, Greene, & Loftus, 1984). Indeed, a survey of jurors who had served on capital cases revealed that less than half of them understood the meaning of aggravating or mitigating (Sontag, 1990, cited in Patry & Penrod, 2013), and yet another survey found that many jurors were guilty of looking up words such as malice and negligent (Tiersma, 1995, cited in Tiersma, 1999).

There have been many proposed solutions to improve jury instructions. One solution is to employ readability formulas when drafting instructions. These formulas take into account factors such as how many syllables there are per word and how many words per sentence, but they are not always reliable indicators of a text's readability (Begeny & Greene, 2014). Another solution is to simplify the language of instructions to mirror language in everyday use (Diamond & Levi, 1996). However, this approach has been shown to yield only minimal improvements (Wiener, Pritchard, & Weston, 1995). A less known approach is the learner-centred approach proposed by Miles and Cottle (2011) which uses non-traditional means

to place the jurors at the centre of the learning process. The use of visual aids such as graphs, illustrations, and flowcharts in jury instructions are examples of this approach. By presenting information through various senses, cognitive load can be overcome and visuals can help build mental representations of the text in question which leads to better retention and understanding of concepts (Brewer, Harvey & Semmler, 2004; Glenberg & Langston, 1992). Jury instructions may benefit therefore from considering all three suggestions: incorporating illustrations, making use of readability formulas and employing plain language strategies.

Pattern Instructions

The current format of jury instructions leads to poor comprehension and should be improved (Cho, 1994). These instructions are called pattern instructions because the same format is used across states in the United States (Cho, 1994). These instructions are usually delivered orally and in written form, and are supposedly unbiased because they are designed by law professionals removed from any particular case. They are also considered highly legally accurate since they are based on significant research and discussion (Cho, 1994). Furthermore, having the same instructions presented to juries on every case suggests objectivity, fairness, and consistency. However, lay people's understanding of jury instructions is disturbingly poor. The term 'reasonable doubt', for example, has been found to be seriously misunderstood by jurors (Severance et al., 1984). In one of the first empirical studies on the comprehensibility of pattern jury instructions, subjects were given California standard civil jury instructions and were asked to paraphrase them (Charrow & Charrow, 1979). Unfortunately, the subjects were only able to correctly paraphrase half of the content. This confusion is partly due to legal homonymy, complex sentences with embeddings, overuse of passives and nominalizations, and multiple negation which are common linguistic features in legal documents (Tiersma, 1999). Furthermore, judges are often, understandably, reluctant to provide guidance out of fear of distorting the content, and when asked to clarify aspects of the instructions, they often simply repeat what they have already said (Tiersma, 1999).

Although the instructions evaluated in research are often the ones used in the United States, there is significant evidence that Canadian jury instructions are also problematic. Rose and Ogloff (2001) examined the comprehensibility of Canadian Criminal Jury Instructions (CRIMJI) in participants from various educational and occupational backgrounds. The participants were given a set of facts on a case and a package of CRIMJI instructions. They were then given a set of Yes/No questions that tested how well they could apply the legal instructions to the facts of the case. Rose and Ogloff (2001) found that the participants performed only slightly better than chance. Consequently, Canadian jury instructions can also benefit from this discussion.

Readability Formulas

One proposed solution to the complicated language in pattern jury instructions is to begin producing instructions that use readability formulas to assess the difficulty of the reading materials. These mathematical formulas calculate frequency of factors such as difficult terms, words per sentence, and syllables per word (Begeny & Greene, 2014). The reasoning behind these formulas is that referring to them while creating written material can help identify problem-

atic items and make the text easier to understand. However, shorter words and shorter sentences alone do not necessarily lead to better understanding (Begeny & Greene, 2014).

This finding was observed in a study gauging the difficulty of reading materials for grade school. Begeny and Greene (2014) found that only a small number of formulas were accurate indicators of a text's readability. Readability formulas are similarly inaccurate when gauging the comprehensibility of legal documents. While materials used by state governments score below 9th grade in difficulty, many of those materials remain incomprehensible to parents (Roit & Pfohl, 1984). However, this is not to say that readability formulas should not be used to improve jury instructions. They can, and should, be incorporated into the solution because, while they are not sufficient on their own, they can provide a general indication of a text's difficulty.

Plain Language

Another solution to pattern instructions is to modify certain linguistic features of jury instructions to mirror language in everyday use. Revised instructions written with clear syntax (sentence structure) and without misleading terms were found to improve understanding of instructions (Diamond & Levi, 1996). However, modifying jury instructions based on these linguistics properties alone does not always result in greater comprehension. Wiener et al. (1995) compared four sets of jury instructions including one set of revised instructions written in clear language. Participants were presented with one of the four sets of instructions and were given a survey to assess their comprehension of the text. However, the number of correct answers did not improve significantly with the revised instructions. Likewise, another study comparing pattern instructions to instructions drafted without complex sentences, legal jargon, and abstract concepts led to only minimal improvements in jury comprehension as assessed in a multiple choice questionnaire (Severance et al., 1984). Therefore, although modifying linguistic features can lead to clearer jury instructions, it is not sufficient on its own.

Illustrations in Jury Instructions

In order to significantly improve jurors' understanding of the instructions given to them, one must go beyond focusing purely on the linguistic characteristics of the text (Miles & Cottle, 2011). In the learner-centred approach, the setting of jury instruction and deliberation should be considered an instructional setting and jurors should be placed at the centre of the learning process since they are usually untrained in matters of the law (Miles & Cottle, 2011). Jurors should be thought of as being in a learning process since they are learning the meaning of technical or abstract legal language for the first time (Miles & Cottle, 2011). Research has shown that visual aids and multimedia facilitate learning, therefore the use of visual aids can be considered a learner-centred approach (Rusanganwa, 2015; Chanier & Selva, 1998). Figure 1 provides an example suggested by Dattu (1998) of what an illustration accompanying the term "proof beyond a reasonable doubt of a defendant's guilt" might resemble.

Figure 1. Suggested diagram accompanying the concept of reasonable doubt. Reproduced from Dattu, F. (1998).

Illustrated jury instructions: A proposal. Law and Psychology Review, 22, 67-103.

Presenting instructions to the jury through illustrations and other visual material is beneficial according to two important frameworks. Firstly, the cognitive load theory suggests that images may facilitate learning because combined oral and visual instructions can overcome the cognitive load (effort expended on working memory) imposed on jurors (Brewer et al., 2004). The presentation of the information through various senses helps retain information more effectively and this is particularly relevant in court where juries are at times prohibited from taking notes. The second framework suggests that illustrations may be beneficial for learning because they help build mental representations or frameworks of abstract legal concepts (Glenberg & Langston, 1992).

Illustrations and Cognitive Load

Cognitive load refers to the amount of mental effort expended in working memory during a task (Sweller & Chandler, 1994). While the difficult nature of the jury's task cannot be altered, extraneous cognitive load can be avoided in addressing the design of jury instructions. Extraneous cognitive load refers to mental effort that is the result of the design of a task and not the result of the nature of the task itself (Sweller & Chandler, 1994). Since cognitive load is the product of limited working memory, by incorporating visuals into the design of the instructions, the amount of information transmitted through the visual and auditory systems exceeds what can be transmitted along one system alone thereby increasing the capacity of working memory and decreasing extraneous cognitive load (Tindall-Ford, Chandler, & Sweller, 1997). Consequently, the amount of mental effort expended in understanding jury instructions is no longer as taxing.

Although instructions are usually presented to jurors in written and auditory format anyways, there is evidence to suggest that language is processed by memory subsystems such as the phonological loop and the central executive, while visual imagery is processed by another system - the visuo-spatial sketchpad (Baddeley, 1996; Papagno et al., 2017). Consequently, illustrations might decrease cognitive load by exploiting a different memory subsystem than written or oral instructions.

When written jury instructions are accompanied with illustrations, information is processed simultaneously by different memory subsystems thus decreasing cognitive load (Brewer et al., 2004). When presented with a computer animated flowchart in addition to written and oral instructions detailing the concept of self-defense, novice jurors matched expert jurors in their comprehension of self-defense as demonstrated through a multiple-choice measure (Brewer et al., 2004). However, illustrations should not replace written text. In a study testing how supplementing jury instructions with a flowchart affects comprehension, the results suggest that using only a flowchart does not improve comprehension since there was no difference between this condition and the text only condition (Semmler & Brewer, 2002). Rather, improvement in comprehension was found when flowcharts were used in addition to written text.

The ordering of the written material and the illustration is another aspect to consider. It has been suggested that less complex materials should be presented first so that the individual can then add on to what they already learned (Eitel & Scheiter, 2015). However, separating the image from the text may actually be detrimental to comprehension. When technical illustrations and their descriptors are presented separately,

cognitive resources are divided between two stimuli and a heavy cognitive load is consequently imposed (Purnell, Solman, & Sweller, 1992). However, when the illustration and the descriptor are incorporated, cognitive resources are not split and heavy cognitive load is not experienced (Purnell et al., 1992). Therefore illustrations and written text should be incorporated and presented simultaneously to avoid splitting of cognitive resources.

Illustrations and Mental Models

Including illustrations in written text promotes the use of mental models which are cognitive representations of the content of the text constructed along various spatial dimensions (Glenburg & Langston, 1992). When a text is read, a mental model of the content of the text is formed. The mental model helps organize relationships between elements in the text and, as the individual peruses the text, elements are modified or updated focusing attention on them and subsequently leading to increased retention (Glenberg & Langston, 1992). Illustrations can assist in the construction of mental models because they are both visual representations of concepts (Glenberg & Langston, 1992). Participants who have been presented with a diagram in addition to written text are better able to understand the relationship between steps explained in the text than those who are only presented with the text (Glenberg & Langston, 1992). Illustrations can therefore help build accurate mental models of concepts that allow encoding of relationships in a way that is difficult for written text to convey.

Metaphorical pictures of the concepts in written text can also help retention. A metaphorical picture is a visual representation that combines two concepts with overlapping features within the same semantic space (Danielson, Schwartz, and Lippmann, 2015). Danielson et al. (2015) elaborated on the idea of illustrations leading to better mental models and tested how metaphorical pictures of the concepts in the written text help retention after one week. Participants in the text-only condition were presented with sentences on the war in Darfur, and participants in the experimental conditions were presented with the text and either a picture of two lions fighting each other - which displayed high metaphorical relatedness - or a picture of a barren landscape - which displayed low metaphorical relatedness. The participants were then instructed to write an essay including as much information from the text as they could remember. They found that the level of metaphorical relatedness between the illustration and the text predicted recall one week later. Therefore, it is not merely the presence of a picture or the fact that target material was presented twice - once in the text and once in the picture- that influences retention, but the relationship between the illustration and the concept in the text.

Limitations

The implementation of illustrations in jury instructions has a number of significant drawbacks which have led to the courts' understandable reluctance to include them. One of the reasons why legal language seems particularly archaic and difficult for lay people to understand is that it encodes very particular legal meanings that are difficult to express in alternate ways. The language and conventions used in legal settings today have been approved and established as a result of years of tradition and precedent (Tiersma, 1999). Courts often resist deviation from past procedures for fear of upsetting prior judgments and having to revisit them (Tiersma, 1999). Making illustrations available in jury

instructions might open the door to an interminable stream of appeals from those who have been convicted without illustrations in jury instructions and from those who claim that the illustrations instilled bias in the jury or distorted legal concepts (Tiersma, 1999). An unfortunate example of how an attempt to clarify instructions to the jury resulted in more confusion than clarity is cited in Severance et al. (1984) where an attempt was made to clarify the term "reasonable doubt" which led to several instances of misinstruction to the jury and a successful appeal. This example showcases the fact that changes in wording can lead to the distortion of legal concepts and a sense of unreliability in the legal system. Implementing illustrations would therefore not be simple and they would need to be generated in such a way as to encode very precise legal meanings.

The idea of bias in illustrations is not unfounded since many studies claim that illustrations are perceived subjectively. Differences in visual processing have been found in people who suffer from anorexia, bulimia and substance abuse and there is also significant research to suggest that men and women process visual stimuli differently (Madsen, Bohon, & Feusner, 2013; de Vries & Forger, 2015). However, while emotional visual stimuli is often used in these studies, illustrations in jury instructions would be drawn "without sensationalism" (Dattu, 1998), generated by computers to avoid bias, and not intended to replace written text but instead accompany it (Dattu, 1998). Since the illustrations that would be used in jury instructions are not emotional in nature, subjectivity would not be an obstacle. The courts are, however, not yet convinced and illustrations have not been implemented on a large scale because of their perceived subjectivity and the reasonable fear of subsequent appeals claiming that the illustrations embellish legal concepts (Tiersma, 1999).

Conclusion

On January 11th, 2003, three days before his end of term as governor of Illinois, George Ryan commuted the death sentences of all inmates who were on death row (Moore, 2006). One significant reason behind these actions was the governor's belief that jurors had not been provided with adequate means to understand the law (Moore, 2006). Therefore he believed that the death sentences handed to the inmates were most likely unwarranted. Jurors have the power to alter the course of someone's life and in some jurisdictions, can even sentence a person to death. In order to make such serious decisions, instructions to the jury should be exceptionally clear and inspire unquestionable understanding of the law on which jurors are required to base their decision. The process of jury instruction is of critical importance and should be treated as an instructional setting that integrates strategies to promote learning. In addition to readability formulas and focusing on linguistic elements, incorporating illustrations in jury instructions avoids cognitive overload and helps build mental representations of the text, both of which lead to a better understanding of the law by jurors. As a result, when taken together, the solutions suggested in this overview constitute a promising direction to generating clearer jury instructions.

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