

Reading or Listening Between the Lines

— Enhancing Jury Instruction Comprehension for a Fair Legal System

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Abstract

Jurors' comprehension of jury instructions (JIs) is pivotal for ensuring fair legal proceedings (Charrow & Charrow, 1979). This study investigates the impact of different presentation modes on JI comprehensibility, utilizing a novel comprehension assessment method. Contrary to the misconception that listening is passive, prolonged active listening, such as during JIs, may accelerate cognitive fatigue (Schneider et al., 2019). To address this issue, this study tests the effect of different modes of presentation: listening-only, reading while listening (synchronous), and first reading-only then listening (asynchronous), building upon earlier findings (Randall, 2013; 2015). Sixty participants from undergraduate courses were randomly assigned to five groups based on the mode of JI presentation and access to written instructions during deliberation. A mixed-methods approach was employed, involving comprehension assessments, perception surveys and qualitative analysis.

Quantitative analyses revealed that while the hypotheses regarding presentation mode and access to written instructions were not fully supported, asynchronous exposure to both spoken and written instructions demonstrated slightly superior performance compared to synchronous exposure. Access to written instructions during scenario-based tasks showed slightly better performance and more positive emotions, suggesting its potential effectiveness in aiding jurors' comprehension and confidence. Moreover, qualitative analysis shed light on nuanced reasoning behind participants' choices. The findings indicated that correct answers did not always align with correct interpretations, and participants struggled to synthesize and apply JIs when scenarios were less straightforward.

Overall, this study highlights the importance of considering presentation modes and written access in enhancing juror comprehension. The positive impact of varied modalities underscores the need for ongoing evaluation and refinement of JI practices. By adopting a multifaceted approach that integrates quantitative assessments, perception surveys and qualitative analysis, this study provides a comprehensive understanding of the factors influencing juror

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comprehension and contributes to the ongoing discourse on improving JI practices within the legal system.

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1. Introduction

Driven by the difficult challenge of preparing case-specific instructions and the risk of higher court reversals due to wording errors in instructions, the historical evolution of crafting comprehensible jury instructions can be traced back to the 1930s and 1940s (Nieland, 1979). In order to respond to these challenges, committees that included judges and lawyers in California pioneered the drafting of standard or pattern instructions (Tiersma & Curtis, 2008). These standardized instructions, initially tailored for the most common civil and criminal cases, have since evolved with continuous updates reflecting legal developments and has become a widely adopted model in the majority of state and federal courts across the United States (Schwarzer, 1981).

The implementation of standardized instructions has proven to be a success, particularly in saving time for judges and lawyers. As a result, this methodology has considerably reduced the number of appeals based on instructional errors (Schwarzer, 1981). However, despite the primary objective of the standardized jury instruction movement begin to improve comprehension (Tiersma & Curtis, 2008), issues of comprehensibility are still prominent, as previous research has pointed out as the adoption of changes prompted by the plain language movement is a gradual process, leading to lingering challenges in comprehension (Randall, 2014). The Plain Language Movement (PLM), which began gaining momentum in the 1970s, is a sustained effort by legal practitioners, linguists, and policy makers to revise legal language for clarity, accessibility, and reduced ambiguity. Rooted in principles of transparency and public accountability, the PLM has influenced reforms across multiple jurisdictions, including the federal Plain Writing Act of 2010. In the context of jury instructions, the PLM aims to replace legalese with simpler syntactic constructions and everyday vocabulary, thereby reducing misinterpretation by laypeople (Clauss, 2020). Despite these advances, adoption has been uneven across states and court systems, and empirical evaluations of plain-language reforms are still emerging (Boleszczuk, 2017).

It is worth noting that many of the studies conducted so far focused on the language of the instructions and not the mode of presentation. There is no written and standard rule of presentation, but customarily instructions are read to the jury by the judge, and jurors have to then follow those instructions in their conduct and during deliberations (American Bar Association, 2019). The process of conveying the instructions to the jurors can take well over an hour (Randall, 2021).

Contrary to the misconception that listening is a passive activity that requires minimal cognitive engagement, it entails a complex interplay of cognitive processes, including attentive focus, interpretative analysis and thoughtful response. Prolonged periods of active listening like jury instructions may accelerate cognitive fatigue, thereby obstructing sustained engagement and reducing the efficacy of the listening process (Schneider et al., 2019).

Rogers (2020) draws a parallel between the courtroom and the classroom, where judges and attorneys act as teachers and jurors as students. In this metaphor, jurors are seen as learners of legalese which is a complex, unfamiliar subject and a distinct linguistic register. He, therefore, claims that education principles can be applied to juror comprehension. Building on Rogers' metaphor and recommendation, we argue that it is reasonable to consider applying theories from second language acquisition (SLA) to the language of jury instructions. Literature in the field of SLA has demonstrated that reading-while-listening (RWL) is beneficial for comprehension over listening-only (Chang, 2009; Chang & Millet, 2014; 2015; Lightbown, 1992), and more recently studies conducted on first language speakers as well yielded the same results (Conklin et al., 2020). However, the literature is not clear on the overall gains of RWL over reading-only, due to its effects on the cognitive load and consequential comprehension level decrease (Luchini, 2015).

To address the issue of comprehensibility in jury instructions, this study examines the effects of different presentation modes – listening only, simultaneous reading and listening (RWL), and reading first followed by listening (asynchronous) – on comprehension. It builds on Randall's (2013; 2015) findings that simultaneous reading and listening improves understanding compared to listening alone. It also introduces a new variable: whether being allowed to keep a copy of the jury instructions during the scenario-based assessment influence comprehension.

This study was guided by three research questions and hypotheses:

RQ1: How does the presentation mode of jury instructions – spoken only or spoken and written instructions – affect comprehensibility?

H1: Participants who are exposed to both spoken and written jury instructions are expected to outperform those who receive spoken instructions only, regardless of whether the exposure is simultaneous or sequential.

RQ2: (To what extent) can access to written jury instructions during the deliberation process improve comprehensibility?

H2: Participants who have access to the instructions during the comprehension assessment are expected to perform better and report a more positive perception of the presentation mode they experienced.

RQ3: What are the perceptions of potential jurors regarding the mode of jury instruction presentation and assessment task?

H3: Participants who are exposed to both spoken and written jury instructions are expected to have more positive perceptions than the participants who are only exposed to spoken jury instructions.

By integrating insights from fields such as linguistics and law, we aim to examine the intersection of language comprehension and legal communication. This interdisciplinary approach offers practical implications for improving legal communication, and it can contribute to fairer trials and better-informed jury decisions, ultimately promoting a more equitable and informed judicial process.

The following section provides a review of the literature to better understand the current state of the art. In Section 3, an overview of the methodology is detailed, encompassing the corpus details of participants, JI recording, the data collection instrument and process as well as the steps of data analysis. Following that, the results of the quantitative and qualitative data analyses are presented and discussed in Section 4. Lastly, Section 5 highlights the key findings of the study, along with its implications and suggestions for future research.

2. The Review of Literature

2.1 Legal Language as a Register

The notion of register has been introduced by sociolinguists to describe variations in language usage across different social contexts (Biber, 1995; Halliday et al., 1964). The language used by legal officials is often seen as a unique register or language by its own known as “legalese” (Melinkoff, 1963). This type of language is characterized by specific linguistic traits, including wordiness, complexity and vagueness.

It is important to define three notions that are relevant to the classification of legal language: language, register and style. Sometimes it appears that the terms “registers” and “styles” are used interchangeably (Biber, 1995). Additionally, the term “style” carries various connotations. In a broader context, “legalese” is often regarded as a particular style of language, although it can be characterized as ‘poor’ (Benson, 1984). Conversely, “style” can also denote a specific aspect of legalese, beyond its vocabulary, syntax, and organization; it may signify a pompous or verbose tone (Zódi, 2019). In this paper we will use Zódi’s broad definition of ‘register’, which considers legal language as a part of an ‘official’ or ‘formal’ language register. Qualifying ‘legalese’ as a language register allows us to view laypeople as L2 users of this specific register, therefore all the difficulties L2 learners face during a listening task can be assumed for native speaker laypeople as well.

2.2 Jury Instructions

This study focuses on the effect of mode of presentation in the comprehensibility of jury instructions. Jury instructions are the judge’s formal explanation of the legal rules jurors must follow when deciding a case. They guide deliberation and ensure that verdicts are based on legal principles rather than personal biases or misunderstandings. However, a growing body of literature indicates that many jurors struggle to understand and apply these instructions effectively (Charrow & Charrow, 1979; Elwork et al., 1982), making clarity and accessibility central to the fair administration of justice.

Prior research in the law and linguistics fields has focused on the accessibility of legal texts, serving as a crucial aspect in the pursuit for equitable access to justice. At the heart

of this discourse lies the concept of ‘comprehensibility’, which refers to the ability of verbal or written texts to be easily grasped. However, this understanding varies and is influenced by various social factors such as socioeconomic status and educational background (Tiersma & Curtis, 2008).

Legal language or legalese, often characterized by its verbosity, complexity and ambiguity, poses a significant challenge for laypersons. Despite the efforts by plain-language movements to simplify legal jargon, legal language remains complex (Zódi, 2019). Making sure that legal texts are understandable to laypersons is essential, especially in civil and family law proceedings where initial interactions frequently involve court forms. Engaging effectively with these forms requires multiple cognitive and communication-related steps, including comprehension, semantic mapping, and communicating the case narrative (Grieshofer et al., 2022). Similarly, jury instructions, being legal texts, need to be comprehensible for everyone in order to ensure compliance.

Some linguistic features commonly used in legalese that can hinder juror comprehension include nominalizations, prepositional phrases (e.g., “as to”), misplaced modifiers, “whiz” and complement deletions, uncommon lexical items, modals, negatives, passive constructions, and syntactic embeddings (see Charrow & Charrow, 1979 for more details). The use of these lexicogrammatical features results in jury instructions that are linguistically dense, highly technical, abstract, and syntactically complex (see Biber, 1988; Gray 2015). This can make them difficult for laypeople to process and apply.

In addition to foundational psycholinguistic work (Elwork et al., 1982), more recent legal scholarship has raised concern about persistent ambiguity in jurors’ understanding of legal standards. Laudan (2003) presents a detailed critique of the “beyond a reasonable doubt” standard, noting that even judges and appellate courts fail to agree on a consistent interpretation. His work highlights that jurors often conflate “reasonable doubt” with moral certainty or require near-absolute certainty, leading to inconsistent applications of the law. Similarly, Shapiro and Muth (2021) argue that the term is cognitively opaque and prone to misunderstanding, even among experienced legal professionals. The historical concern raised in *The Forum* (1906) regarding “preponderance of the evidence” as being misconstrued as personal conviction rather than a legal threshold still resonates in contemporary findings. These concerns are compounded by cognitive biases and prior beliefs, which, as Baguley et al. (2020) point out, are rarely accounted for in comprehension assessments.

Despite the aforementioned movement started arising in the 1930s and 1940s with the goal of enhancing comprehension, there are some persisting challenges and the push for fairer jury instructions remains significant, as the integration of these insights into standard instructions has been limited. To address this challenge, states like Utah – through the Committee on Model Utah Civil Jury Instructions (MUJI) – are working with linguists to create jury instructions that are easier for laypeople to understand. These efforts specifically aim to simplify the complex language features mentioned above (see

Appendix A for a comparison between a legalese and a plain-language version of a jury instruction).

In this study the revised jury instructions elaborated by the MUJI committee will be used to test potential jurors' comprehension with different modes of presentation. These specific instructions were chosen to avoid adding particularly difficult language as a confounding factor.

2.3 Mode of Presentation

While the plain language movement rightly focuses on the improvement of critical aspects of jury instructions, we believe that the mode of presentation also plays a crucial role in their comprehensibility. Instructions are always recited by the presiding judge, and in some rare cases the jurors are given copies of the instructions. The time a judge spends issuing the instructions varies depending on the case, some can last 10 minutes and others 1 hour (Randall, 2021). Such prolonged listening tasks can impose a significant cognitive burden, potentially leading to a phenomenon known as listening-related fatigue (Murphy, 2021). Fatigue is a common experience encountered by individuals across various contexts. It manifests subjectively as sensations of tiredness, weariness, mental fuzziness, or physical discomfort (Hockey, 1997).

Listening-related fatigue, stemming from prolonged attention during extended listening sessions, has garnered increasing interest (Schneider et al., 2019). This fatigue, characterized by heightened "listening effort", can lead to mental fatigue and an increased need for recovery (Kramer et al., 2006; Nachtegaal et al., 2009). Listening is a multifaceted process involving interpretation of spoken language alongside other sensory input and contextual cues (Lynch & Mendelsohn, 2010). It encompasses recognizing sounds, interpreting intonation patterns, and assessing information relevance (Lynch & Mendelsohn, 2010). Viewing listening as an active process, rather than passive, highlights the need for listeners to engage and interpret conveyed information (Lynch & Mendelsohn, 2010). In high-stakes scenarios, listening tasks can induce cognitive overload, risking information loss. Recent studies highlight the benefits of reading-while-listening in second language learning and comprehension for both native speakers and learners (Chang, 2009; Chang & Millet, 2014). Second language learners often struggle with listening tasks due to factors like rapid speech and unfamiliar vocabulary, making external support crucial for comprehension (Chang & Read, 2006; Goh, 1999). Within listening instruction and assessment, various approaches such as visual aids and captions have been explored to enhance comprehension (Chang, 2009).

This study builds on the notion that aural – written verification helps develop auditory discrimination skills as well as refine word recognition (Chang, 2009). In her study, Chang (2009) demonstrated that not only did her L2 participants perform better with RWL but the majority of the students also perceived that listening in the RWL mode made listening tasks easier, the duration seem shorter, the stories more interesting, and

they paid much better attention. These results were also confirmed in Randall's (2015) paper. Her study on the comprehensibility of jury instructions demonstrated that reading while listening improved comprehension over listening alone.

This study also seeks to test the effect of asynchronous reading-only on the comprehensibility of jury instructions. The findings of Luchini et al.'s (2015) research highlight the superiority of the reading-alone approach over the dual-mode instruction. The authors demonstrated that the integration of a dual-mode instructional design imposes an additional extraneous cognitive load that adversely impacts reading comprehension. They hypothesized that when learners are presented with the same text through two different modes, they are compelled to engage two separate channels simultaneously to process identical information and establish referential network connections (Luchini et al., 2015). One of our hypotheses is that an asynchronous mode of presentation will lessen participants' cognitive load and they will be able to better comprehend the instructions.

Due to the nature of legalese as a specialized language register, an alternative hypothesis of this study is that that RWL will improve participants' comprehension of jury instructions, as demonstrated in previous second language learning (SLL) studies, such as Conklin et al. (2020). In their study, they compared the benefits of reading-only and reading-while-listening activities in a first and second language with eye-tracking tests. Their study showed that L2 learners performed better when reading while listening, while that reading is faster and more fluent in the reading-only condition in the L1.

2.4 Deliberation Process

This investigation also aims to determine the impact that access to written jury instructions during the deliberation process can have on comprehension. The hypothesis of this study is that participants with access to the instructions during comprehension assessment task will perform better and have a more positive perception of the mode of presentation they were exposed to.

May (1995: 877) pointed out that jurors reaching the phase of readiness to engage with instructions has been likened to the pivotal "What do we do now?" moment in jury deliberations. Since the direct observation of real juries in action is seldom feasible, studying the deliberation process itself presents significant challenges; yet it is essential to assess how well they can implement what they comprehend from JIs into real situations. While it is quite plausible that jurors face challenges in applying JIs due to their complex lexico-grammatical structure or simply because of their (in)ability to recall or recognize instructions they had heard (May, 1995), as noted by Reifman et al. (1992: 553), "unless some attention is paid to the jurors' use of the instructions they are given, the never-ending, intensive solicitude for the wording of the law is pedantry in fantasyland".

Furthermore, previous research on the effectiveness of the possibility of retaining the jury instructions during deliberations has demonstrated that it would be helpful in assisting the jurors with following legal guidelines in their decision making and that it would increase the jurors' satisfaction with the trial process (Heuer & Penrod, 1989). Furthermore, according to the same study the written copy did appear to reduce disputes among jurors about the judge's instruction.

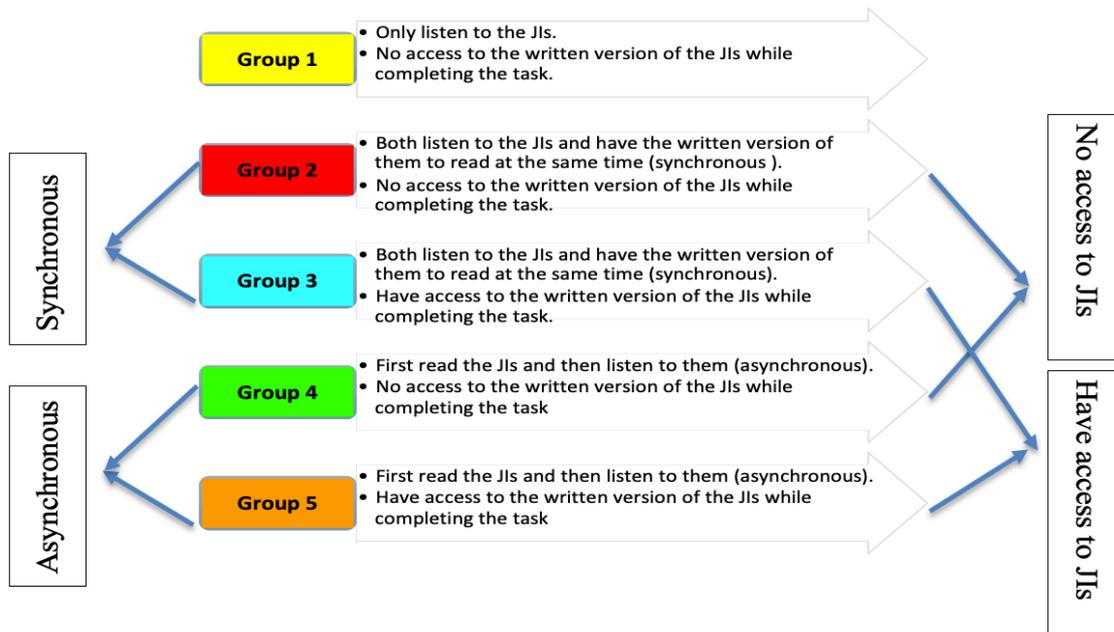
3. Methodology

3.1 Participants

The target population for this study comprised individuals eligible to serve as jurors in the U.S. judicial system.¹ Utilizing a convenience sampling method, participants were recruited to represent this population. Specifically, 51 students from a 100-level criminology course and 9 students from a 100-level Italian course at a state university in the Southwest region were invited to participate (N = 60). Inclusion criteria mandated participants to be enrolled in an undergraduate program at the specified institution and to hold U.S. citizenship. Data from one participant who did not meet the citizenship requirement were excluded. Prior research on methodological concerns in jury simulation studies has challenged the assumption that undergraduate students are not representative of actual jury panel members (see Rose & Ogloff, 2001). Therefore, while we recognize that college students may not encompass all demographic aspects of the jury population in the U.S., especially concerning age and educational background, we believe that the current participant sample can be considered as a good representative of the target population.

60 participants were randomly divided into five groups of equal size based on the mode of jury instructions they receive and whether they have access to written jury instructions (JIs) during the comprehension task. Figure 1 below illustrates the participant division and conditions. In this way, each group consisted of 12 participants, allowing us to form 5 distinct juries exposed to JIs in various modes.

¹ Jurors must be at least 18 years old and American citizens and need to have at least basic literacy level in English (28 U.S. Code §1865).

Figure 1: An overview of group conditions

General demographic information about participants, along with specific questions concerning their potential experiences as jurors and any familial connections to the field of law were collected via the survey prepared for this study. Participants' ages ranged from 18 to 29, with 33% aged 19 ($N = 20$). Of the 60 participants, 36 identified as female, 21 as male, and 3 as non-binary. Among the participants' majors during data collection, psychology was the most common ($N = 12$), with 47% of all participants being freshmen ($N = 28$). The majority of the participants did not know a language other than English ($N = 38$), while others knew other languages such as Spanish, Italian, French, German and ASL.² Merely one participant had prior jury experience. However, over half ($N = 33$) expressed willingness to serve on a jury in the future. To gauge potential influence on participants' familiarity with juries and JIs, we asked participants whether there anyone is in your family whose job is related to law. Most ($N = 45$) answered negatively, although some mentioned mothers, fathers, aunts and uncles working as lawyers, judges or police officers.

3.2 Speech Stimulus

Participants were asked to listen to a recording of JIs, which lasts approximately 12 minutes and comprises seven different civil case jury instructions (see Appendix B for

² This information was self-reported by the participants, and we did not conduct further assessments to verify its accuracy or their proficiency levels.

the full transcript). All instructions in the recording were sourced from the plain instructions created by MUJI, currently employed in Utah civil cases. Plain jury instructions were chosen for this study because lexicogrammatical complexity of JIs may potentially be a confounding factor in participants' comprehension, and this study aims to explore only the effect of mode of presentation of JIs.

The JIs were recorded by a senior district judge in Utah, who has years of experience delivering the plain jury instructions created by the MUJI committee in numerous civil cases. This choice was made to ensure that participants are exposed to the JIs in a manner consistent with how they are typically presented in court, including speech rate, pauses, intonation and stress. The judge recorded the JIs in a quiet room using a digital audio recorder, specifically a voice recording application on a smartphone that was saved as an mp3 file.

The recorded instructions are related to general admonitions (CV101), preponderance of the evidence (CV117), clear and convincing evidence (CV118), evidence (CV119), objections and rulings on evidence and procedure (CV128), spoliation (CV131) and legal rulings (CV153). These specific instructions are selected because of their significance in civil cases and their inherent complexity, which often makes them challenging to comprehend. No scenario is based solely on the first instruction regarding general admonitions. Its inclusion serves primarily to ease participants into the exercise.

3.3 Data Collection Instrument

The data collection instrument consisted of three parts:

1) JI scenarios and questions, 2) questions regarding participants' perceptions on the mode of jury JI presentation, and 3) demographic information (see Section 3.1 for the results of the participants demographic information).

To address the first and second research questions, we conducted a scenario-based comprehension assessment, following Baguley et al.'s (2020) recommendation. They argue that although this type of assessment has been used only to a limited extent, it should be employed more frequently, as it not only helps evaluate whether comprehension has been achieved but also allows researchers to assess the extent to which jurors can apply instructions to realistic scenarios.

In line with this suggestion, the scenario-based assessment in this study involved presenting participants with five scenarios that relate to key constructs and issues outlined in the recorded JIs. Participants were be instructed to imagine themselves as members of a jury in each scenario and answer a question (Yes, No, or Don't know)³ based on

³ We would like to highlight here that scenario-based tests "have usually been presented using a forced-choice response format, with *don't know* only infrequently included as a possible response option" (Baguley et al.,

their understanding of the scenario and the instructions provided in the JIs. In other words, we measured the comprehensibility of JIs through participants' success in scenario answers. Additionally, after each scenario, participants were asked to briefly justify their answers, referring to the relevant jury instruction(s) they have heard or read that influenced their decision. With this question, we aimed to minimize the influence of chance in participants' responses (see Barguley et al., 2020). This is how a scenario and following questions look like in the study (see Appendix C for the complete survey):

Scenario: You are part of a jury in a civil trial involving a contested will. The plaintiff brings in a few witnesses to support their claim that the will is valid. While their testimonies lack detail, they also show some old letters to prove their relationship with the deceased. On the other hand, the defendant presents one witness who gives a detailed account of their interactions with the deceased and the circumstances surrounding the creation of the will.

Question: According to the instructions given by the judge, do you think the evidence presented by the plaintiff meets the standard of clear and convincing evidence?

- a) Yes
- b) No
- c) Don't know

Please briefly justify your answer (why yes or why no?):

It should be noted that, in this study, we operationalized the deliberation process (RQ2) as the implementation of the JIs participants were exposed to into the survey scenarios, which in turn provided us with insight into participants' comprehension of JIs. While real jurors typically deliberate collectively to reach a verdict in trials, collaboration during scenario-based tasks was not feasible within the design of this study.

We have opted for a scenario-based assessment for two reasons. Firstly, such interpretive exercises are widely recommended in educational settings for assessing complex achievements, such as understanding and critical thinking skills. These exercises typically involve factual questions derived from a common dataset (Miller et al., 2008), which in our case is the recorded jury instructions. By framing questions around scenarios, participants are prompted to draw concrete conclusions and apply the JIs effectively. Secondly, scenarios are commonly used to evaluate the comprehensibility of JIs (e.g., Tiersma & Curtis, 2008). While they are frequently employed to assess the linguistic comprehensibility of JIs, we believe they can also provide valuable perspectives on the impact of different modes of JI presentation.

The second part of the instrument comprised two Likert scale surveys designed to address the third research question. The first survey consisted of eight 4-point Likert scale questions focusing on participants' perceptions of the JIs and their emotional response while being exposed to them. The subsequent survey included six 4-point Likert scale questions aimed at gauging participants' assessment of the task's (i.e., scenario-

2020: 56). In fact, among the very few studies that have used this measure, a binary response option seems to be more common (e.g., Rose & Ogloff, 2001; Tiersma & Curtis, 2008; Wiener et al., 2004).

based assessment) difficulty. A Cronbach Alpha analysis was conducted for each scale to evaluate the internal consistency of the survey items. Cronbach's alphas for the 8 JI perception items and 6 task perception items were .80 and .77, respectively. The results indicated an acceptable level of inter-relatedness among items in the scales (see Tavakol & Dennick, 2011).

The third section aimed to gather demographic details about the participants. It covered questions about their age, field of study, citizenship status, language proficiency, past jury involvement, presence of family members in legal professions and their willingness to serve on juries in the future.

3.4 Data Collection

The data were collected in April 2024 at a state university in the Southwest region of the USA. Three different 100-level criminology classes were visited to recruit participants. These classes were specifically targeted because they were large section classes, and students attending them were learning about the jury system in the USA, making them more likely to participate in the current study. The instructor of each class was contacted and informed about the study, and with their permission, we were invited to their classes to collect data. The first section served as a pilot study. After conducting the study in that section, we refined our survey and developed better strategies to manage a large classroom during data collection and to ensure more reliable data collection. We anticipated that two criminology sections would be enough to form the five juries needed; however, due to incomplete surveys, we were short of nine participants. Therefore, students from Italian language classes were also invited to take part in the study.⁴

Both researchers, or either one of them, were present during the data collection and provided the necessary instructions to the participants. Participants were provided with colored papers with numbers written on them. As illustrated in Figure 1, each color/number represented the group they belonged to and the mode of JIs presentation they received. It was crucial to ensure that each participant knew their assigned group because data collection occurred in large classrooms for criminology sessions, making it impossible for researchers to track individual assignments. These papers were randomly distributed to the participants.⁵ Instructions were carefully provided multiple times to ensure everyone understood their tasks. Moreover, the chart in Figure 1, along

⁴ At the time of data collection, students in criminology classes had not yet covered the jury system and JIs, implying that they did not hold any advantage over Italian students. To reach our target of 60 participants, we included students from Italian classes, which was a convenient option as one of the researchers teaches Italian classes.

⁵ During the pilot study, we initially distributed papers numbered 1 first, followed by 2, and so on. However, we realized that this approach resulted in students sitting at the front forming Group 1, and those at the back forming Group 5. Recognizing the potential reliability issues this could pose, we rethought our method. Thus, for subsequent data collections, the papers were ordered sequentially from 1 to 5 and stacked accordingly. This adjustment ensured an equal chance of participants from each group being seated both at the front and at the back.

with other important warnings (e.g., do not use electronics, write the group color/number on your survey, etc.), were displayed on the board. First, Groups 4 and 5 began reading the JIs (5 minutes were allocated) while the others waited in silence. Then, all groups listened to the JIs recording, with Groups 2 and 3 also reading the JIs. Finally, all groups completed the survey, with Groups 3 and 5 having access to the JIs. Data collection sessions in criminology classes lasted approximately 45 minutes, while Italian class session took approximately 30 minutes.

To address the research questions, both quantitative and qualitative analyses were conducted. The survey responses were analyzed descriptively, incorporating means, standard deviations, and confidence intervals. Mean scores for the comprehension task (i.e., scenarios) were determined using a scoring system: participants received 1 point for a correct answer and no points for incorrect responses or selecting ‘Don’t know’⁶. Consequently, the maximum comprehension test score per participant was 5, while the minimum was 0. Mean scores for the perception section of the survey were calculated using Likert scales.

Comparisons were made based on comprehension mean scores across groups and scenarios, as well as participants’ perceptions of JIs and of the comprehension task. Additionally, a chi-square test was conducted to examine statistical differences in the frequency distributions of answers to comprehension tasks among groups for each scenario.

Qualitative analysis was applied to participants’ open-ended justifications for their responses to the scenarios. A coding scheme consisting of five codes was developed to assess these answers: (0) No interpretation provided/Don’t know chosen, (1) Correct answer and correct interpretation, (2) Correct answer but wrong interpretation, (3) Wrong answer and wrong interpretation, and (4) Wrong answer but correct interpretation. Both researchers independently assigned the corresponding code numbers to all open-ended responses (totaling 300 answers from 5 scenarios x 60 participants).

To ensure intercoder reliability, a Cohen’s kappa value was calculated after this initial coding process, resulting in a high agreement level ($\kappa = .93$), as per Landis and Koch’s (1977) classification. However, to achieve complete agreement, a “negotiated agreement” process was employed to address discrepancies (see Campbell et al., 2013: 305). After this negotiation, 100% agreement was reached in our coding. Furthermore, another chi-square test was conducted to explore statistical differences in the frequency distributions of codes among groups for each scenario.

⁶ The main reason why both options received the same score is that we aim to assess whether participants understand the concept or scenario, not whether they are confident in their response. Both a wrong answer and an admission of not knowing indicate a lack of correct comprehension or interpretation. From a cognitive perspective, not knowing and misunderstanding may lead to equally undesirable outcomes in real-life applications – especially in high-stakes fields like law. Even though they were scored the same in the quantitative analyses, aiming to gain a better understanding of what may have caused participants’ uncertainty, we analyzed ‘don’t know’ responses separately in the qualitative analyses to explore patterns across groups and scenarios.

4. Results

4.1 How Does the Presentation Mode of Jury Instructions Affect Comprehensibility?

4.1.1 Comparison of All Groups

Our hypothesis was that groups exposed to JIs, both in spoken and written modes (Groups 2, 3, 4, 5), irrespective of the synchronicity of this exposure, would outperform Group 1, which was only exposed to spoken JIs. To put another way, our expectation was for the mean score of scenarios in Group 1 to be lower than in the other groups. However, as shown in Table 1, this hypothesis was not supported, with Group 2 ($M = 3.17$) performing slightly worse than Group 1 ($M = 3.47$), while the other groups performed slightly better. Hence, these findings do not fully support earlier research conducted by Randall (2013, 2015) that indicated that simultaneous reading and listening enhanced comprehension compared to listening alone. Furthermore, groups 3 and 4 achieved comparable success ($M = 3.88$) in the scenarios despite differing exposure to JIs and access to written materials – Group 3 had synchronous mode of presentation with access to written JIs while taking the task whereas Group 4 was asynchronous with no access to written JIs. Similar standard deviation values across groups indicate consistent variability in scores among them.

Table 1: Descriptive summary for each group

Group	M	SD	CI 95%
1	3.42	1.08	2.73-4.10
2	3.17	0.94	2.57-3.76
3	3.83	1.11	3.12-4.54
4	3.83	1.03	3.18-4.49
5	3.50	0.80	2.99-4.00

This unexpectedly good performance of the group exposed solely to listening instructions (Group 1) can be attributed to the explicit warning given to this group regarding the absence of written materials. The awareness of lacking access to written JIs, while other groups do have it, may have heightened their attentiveness and meticulousness during the comprehension task. Thus, this awareness and their heightened focus may have compensated for the lack of written resources, resulting in a more effective engagement with the spoken instructions.

Furthermore, the marginal differences observed between groups may be attributed, in part, to the simplicity and clarity of the jury instructions provided. The language used in the instructions had been carefully curated by the MUJI committee, potentially minimizing the cognitive load associated with comprehension tasks. Consequently, participants from various groups might have found the tasks equally challenging, which could

have reduced the expected performance differences depending on the mode of presentation. However, if this study were to be replicated using JIs from U.S. states that don't use plain language, the mode of presentation might have a bigger impact on participants' comprehension performance.

Our hypothesis initially posited that *legalese*, as a specialized language register, would significantly influence participants' comprehension, akin to findings in studies of SLL (e.g., Conklin et al., 2020). However, the simplification of the language in these specific JIs could explain why our findings diverged from previous SLL studies. By utilizing plain-language jury instructions, the comprehension challenges typically associated with *legalese* may have been minimized, thus yielding unexpected results.

It is also noteworthy that the entire participant group, encompassing all five groups, achieved a mean score of 3.55 out of 5, indicating an overall comprehension performance of 71%. This performance surpasses the random chance of selecting the correct answer in a Yes/No question, which stands at 50%; however, the important question would be whether it is enough. Given the high-stakes nature of juror decisions, where comprehension levels approaching random chance could have significant implications, this finding can warrant serious implications for the U.S. judicial system.

4.1.2 Comparison of Synchronous and Asynchronous Groups

We further categorized the groups exposed to both spoken and written JIs into synchronous and asynchronous groups to examine the impact of reading-only and RWL presentations ($N = 24$ for both synchronous and asynchronous groups). As shown in Table 2, the asynchronous group demonstrated a slightly superior performance compared to the synchronous group, with a small effect size ($d = .17$). Moreover, both groups exhibited better performance than the group solely exposed to listening (i.e., Group 1). This finding supports to previous studies suggesting that exposure to JIs in different modalities can enhance jurors' comprehension. It also suggests that asynchronous exposure to JIs in written and spoken modes may be more beneficial for JI comprehensibility.

Table 2: Descriptive summary for group synchronicity

Group	M	SD	CI 95%
Only listening (Group 1)	3.42	1.08	2.73-4.10
Synchronous exposure (groups 2 and 3)	3.50	1.06	3.05-3.95
Asynchronous exposure (groups 4 and 5)	3.67	0.92	3.28-4.05

4.1.2 Analysis of scenario answers

Finally, we conducted a chi-square test to determine whether the frequencies of the answers (i.e., Yes – coded as ‘Y’, No – coded as ‘N’, and Don’t know – coded as ‘D’) given to each scenario differed among groups. The chi-square analysis revealed that there was no statistical difference in the distribution of answers among the groups for any of the scenarios. The frequency distributions of the answers can be seen in Table 3.

Table 3: The frequency distributions of the answers for each scenario

Scenario	Group	D	N	Y
1	1	4	1	7
	2	2	4	6
	3	0	2	10
	4	1	1	10
	5	0	2	10
Total		7	10	43
2	1	1	9	2
	2	1	9	2
	3	0	11	1
	4	1	11	0
	5	0	12	0
Total		3	52	5
3	1	1	9	2
	2	1	9	2
	3	0	10	2
	4	1	7	4
	5	3	5	4
Total		6	40	14
4	1	1	11	0
	2	1	10	1
	3	1	8	3
	4	0	12	0
	5	0	11	1
Total		3	52	5
5	1	5	2	5
	2	3	6	3
	3	3	2	7
	4	2	4	6
	5	4	4	4
Total		17	18	25

We specifically wanted to examine the distribution of scenario answers as we believe that the option ‘Don’t know’ can signify the difficulty of applying JIs to real-life scenarios. It appears that most participants were more confident with their answers in scenarios 2 and 4 ($f_D = 3$), followed by scenarios 1 and 3 ($f_{D1} = 7$, $f_{D3} = 6$). However, we observed

that almost one-third of the participants did not know how to answer the fifth scenario ($f_D = 17$).

Both the quantitative and qualitative analyses revealed a notable challenge faced by participants when responding to scenario 5. Overall, 28% ($N = 17$) of participants admitted to not knowing the answer, while 30% ($N = 18$) provided incorrect responses, and 41% ($N = 25$) answered correctly. Specifically, among the groups, the correct response rates varied: Group 1 = 42%, Group 2 = 25%, Group 3 = 58%, Group 4 = 50%, and Group 5 = 33%. Fifth scenario was the only one that required interpretation of “the evidence in light of your experience” (CV119), while all the others were based on clear rules presented by the judge in the JI recording. Participants needed to analyze and synthesize the JIs concerning the preponderance of evidence (CV117) and clear and convincing evidence (CV118 and CV119) to answer to this scenario.

Participant #8 from Group 3 stated that they did not know the answer because “*it is up to me to decide if they are persuasive enough and look at all the evidence*”. Many participants felt that the information given in the scenario was not enough to make a decision. Participant #12 from Group 2 said that they could not answer because they were not sure “*what the policy regarding questionable evidence is.*” Similarly, participant #5 from Group 4 commented that “*The evidence is not clear or convincing with lack of detail.*”

On the other hand, participants who provided a correct answer elaborated on how the scenario aligns with the standard of clear and convincing evidence. It appears that they employed critical thinking skills, assessing the scenario based on their understanding of the JIs and their own experiences. Participant #12 from Group 3 reasoned “*Although there is only one witness, their account is detailed evidence, as it was not objected to or rejected. I would say it holds more weight than more witnesses with vague testimonies.*” Along the same lines, participant #11 from the same group reported that “*The evidence is not to be determined by the amount of witnesses, but by its degree of persuasion. The plaintiff’s witness did have a higher degree of persuasion than the defendant’s.*”

In addition to the challenges posed by scenario 5, which prompted participants to select the ‘Don’t know’ option, another apparent reason for choosing this response could be some participants’ difficulty in accurately recalling specific instructions. This was particularly evident in groups without access to jury instructions during the comprehension task. For example, participant #3 from Group 1 stated regarding scenario 1 that “*I do not remember what the judge said about the burden of proof.*” Similarly, participant #2 from Group 4 remarked, “*I remember hearing about the burden of proof, but I can’t recall if it is sufficient to reach a verdict.*” These instances underscore the difficulty of recalling information accurately in comprehension tasks. Access to the jury instructions could mitigate confusion or errors, and it could potentially lead to a smoother deliberation process for jurors, which is further discussed in the subsequent section.

4.2 (To What Extent) Can Access to Written Jury Instructions During the Deliberation Process Improve Comprehensibility?

We hypothesized that groups, who had access to JIs while completing scenario-based assessment tasks (3 and 5), would outperform the other groups (2 and 4) ($N = 24$ for both access and no access groups). This expectation stemmed from the belief that participants could reference JIs whenever they faced challenges trusting their memory, encountered difficulty interpreting scenarios, or needed guidance in applying JIs to the scenarios. While this hypothesis was met (see Table 4), the difference between the two groups is rather small with a small effect size ($d = .17$), contrary to our expectations. This can be interpreted in several ways. Firstly, it may result from the fact that participants who had access to written JIs did not refer to them as much as we believed they would. Secondly, even though they may have referred to them, they had trouble applying and interpreting them. Thirdly, it is also likely that they were less focused and careful while completing the scenarios.

Table 4: Descriptive summary for JIs accessibility

Group	M	SD	CI 95%
Only listening, no access to JIs (Group 1)	3.42	1.08	2.73-4.10
No access to JIs (groups 2 and 4)	3.50	1.02	3.07-3.93
Have access to JIs (groups 3 and 5)	3.67	0.96	3.26-4.07

Even though it is not possible to completely confirm or reject any of these interpretations, we wanted to have a better understanding of the participants' thought process as well as the way they applied the JIs. Therefore, as explained in Section 3.5, we qualitatively analyzed the answers to the open-ended question in the survey where they briefly justified their answers. Table 5 summarizes the results of this analysis. We also ran another chi-square test to examine whether the distribution of the codes differed among groups for each scenario. The analysis revealed no statistical difference in the distribution of codes among the groups for any of the scenarios. No notable trends were observed in the distribution of the codes across the groups.

Table 5: Code distribution from the qualitative analysis of responses to the open-ended question

Scenario	Group	(0) No interpretation provided/Don't know chosen	(1) Correct answer and correct interpretation	(2) Correct answer but wrong interpretation	(3) Wrong answer and wrong interpretation	(4) Wrong answer but correct interpretation
1	1	4	3	4	1	0
	2	3	2	3	4	0
	3	0	6	4	2	0
	4	2	6	3	1	0
	5	0	9	1	2	0
Total		9	26	15	10	0
2	1	1	8	1	1	1
	2	1	9	0	2	0
	3	0	9	2	0	1
	4	2	7	3	0	0
	5	0	8	4	0	0
Total		4	41	10	3	2
3	1	0	6	2	3	1
	2	1	4	5	0	2
	3	0	10	0	2	0
	4	2	6	1	1	2
	5	1	5	0	3	3
Total		4	31	8	9	8
4	1	1	4	7	0	0
	2	1	7	3	1	0
	3	0	6	2	2	2
	4	0	8	4	0	0
	5	2	7	2	1	0
Total		4	32	18	4	2
5	1	5	2	3	1	1
	2	3	1	2	6	0
	3	3	4	3	2	0
	4	3	2	4	3	0
	5	5	2	2	0	3
Total		19	11	14	12	4

As the results of the first code indicate, some participants opted not to provide a rationale for their Yes or No answers.⁷ In the case of scenario 3 however, we can also see that two of the participants indicated that they did not know the answer but provided a correct interpretation of the related JI in the open-ended question.⁸ Scenario 3 pertains to spoliation and asks, “Based on the jury instruction provided, should the jury assume that the destroyed evidence would have been favorable to the defendant?” For example, participant #7 from Group 5 provided the following response: *The instructions say unfavorable to “that party” if either party is destroying, concealing any evidence. So, not sure if it would be*

⁷ This can be claimed in comparison to ‘Don’t know’ distribution in Table 3.

⁸ There is a total of 7 ‘don’t know’ answers for scenario 3. However, qualitative analysis indicates there are only 4 instances of code 1, which should correspond to at least 6 instances, as this code also includes the ‘don’t know’ answer.

favorable to a defendant. In this example, it is evident that while the participant located the relevant instruction (CV131) and quoted it (given that Group 5 had access to JIs), they struggled to interpret it in a manner applicable to the scenario. This situation of providing an incorrect answer despite a correct interpretation occurred 16 times in our dataset, with scenario 3 being particularly prone to this issue. Another response to this scenario, provided by participant #2 from Group 4, is as follows: *The instructions said we do not need to abandon our common sense, and clearly the records were destroyed for a reason*. Despite providing a thorough interpretation, the participant ultimately answered the question incorrectly by selecting the option ‘Yes’. This could be attributed to a lapse in attention.

Another interesting code was the third one: Correct answer but wrong interpretation. In this situation, we observed that even though participants provided the correct answer and received comprehension points for that scenario, they did not achieve this by relying on the correct JI and its interpretation. This situation was rather prevalent across all scenarios. Upon further analysis of this code, two main patterns were identified: reliance on prior knowledge and confusion among JIs. Below are two examples that were categorized as “correct answer but wrong interpretation”, illustrating these patterns:

- (1) Yes, because everyone in the trial should be saying the truth, and a verdict should be reached from the evidence.
- (2) If any juror violates the general admonitions in such a manner, they must be reported.

The first response to the scenario 1 is from participant #2 in Group 1. This scenario pertained to the preponderance of evidence and highlighted how the standard of ‘proof beyond reasonable doubt’ does not apply to civil cases. The second response to the scenario 4 is from participant #8 in Group 3. This scenario concerned the weighing the evidence and emphasized the importance of quality over quantity in deliberations.

These examples are particularly intriguing. In the first example, it appears that the participant may not recall the preponderance of evidence standard from the JIs and instead attempted to deduce an answer based on common sense and their prior experiences with jury trials.⁹ In the second example, however, the participant concentrated on that jurors were having a discussion regarding the trial, overlooking the fact that it was during deliberations. Although they referenced a real and valid JI, it was not pertinent to the scenario at hand.

Similar instances occurred across various groups and conditions, many of which also resulted in incorrect answers. These findings of qualitative analysis indicate a reliance on reliance on prior knowledge and wrong instructions rather than a strict interpretation of the relevant instructions. More importantly, these findings along with the discussion regarding choosing ‘don’t know’ (see Section 4.1.2) lend support to May’s (1995) claim that although jurors can sometimes understand the meanings offered by words

⁹ It is likely influenced by the well-known jury oath often portrayed in media, which emphasizes the importance of “telling the truth and nothing but the truth.”

and sentences in instructions, they struggle with interpreting and applying them to reach a verdict.

4.3 What Are the Perceptions of Potential Jurors Regarding the Mode of Jury Instruction Presentation and Assessment Task?

Apart from assessing their comprehension levels, we also aimed to gather participants' perceptions of the JIs and the scenario-based task. Our hypothesis centered on Group 1, expecting them to have negative emotions and attitudes towards both the JIs and the task itself. This anticipation stemmed from their sole exposure to JIs through listening, which we assumed would pose significant challenges and discomfort to them during data collection. On the other hand, given their awareness of access to written JIs during scenario completion, we anticipated a contrasting experience for groups 3 and 5.

Table 6 below summarizes participants' perceptions of the JIs and their emotional responses. Although we did not observe considerable differences among the groups' mean scores, it is evident that Group 1 exhibited more doubts than the other groups and encountered more difficulties in remembering the JIs, as expected. Surprisingly, participants in Group 5 reported experiencing more challenges in applying the JIs to scenarios, despite feeling less stressed. As previously discussed, it was anticipated that groups 3 and 5 would not experience strong negative emotions during the process due to their advantage of JIs access. However, their struggle with scenarios appears to align with the overall comprehension success of Group 5 compared to their counterpart, Group 3, both of whom had access to written JIs (see Table 1). It is possible that their perceived difficulties in applying the JIs to scenarios correlate with their lower comprehension performance compared to Group 3.

Table 6: Descriptive summary of perceptions towards JIs

Question	Group	M	SD	CI 95%
1. I had doubts	1	2.40	1.00	1.78-3.04
	2	2.10	0.74	1.57-2.63
	3	1.83	0.83	1.30-2.36
	4	2.25	0.62	1.85-2.64
	5	1.91	0.67	1.49-2.34
2. I felt distressed	1	1.58	0.67	1.16-2.00
	2	1.40	0.70	0.90-1.90
	3	1.25	0.62	0.85-1.64
	4	1.33	0.65	0.91-1.75
	5	1.08	0.28	0.90-1.27
3. I was confused	1	2.00	0.85	1.46-2.54
	2	2.30	1.16	1.47-3.13
	3	1.50	0.90	0.99-2.00
	4	1.58	0.90	1.01-2.15
	5	1.67	0.49	1.35-1.98
4. There were problems with the length of the jury instructions	1	1.75	0.97	1.14-2.36
	2	1.50	0.85	0.89-2.10
	3	1.67	1.07	0.98-2.35
	4	2.25	1.05	1.58-2.92
	5	1.83	0.94	1.24-2.43
5. There were problems with the language of the jury instructions	1	1.25	0.62	0.85-1.64
	2	1.20	0.42	0.90-1.50
	3	1.33	0.65	0.92-1.74
	4	1.58	0.79	1.08-2.09
	5	1.42	0.51	1.09-1.74
6. There were problems with the technical information in the jury instructions	1	1.58	0.67	1.16-2.00
	2	1.30	0.48	0.95-1.64
	3	1.33	0.65	0.92-1.75
	4	1.50	0.67	1.07-1.93
	5	1.33	0.65	0.92-1.75
7. There were problems with remembering the jury instructions	1	2.25	1.29	1.43-3.07
	2	2.00	0.94	1.32-2.67
	3	1.58	0.67	1.16-2.00
	4	2.08	0.97	1.45-2.72
	5	1.83	1.03	1.18-2.49
8. There were problems applying the jury instructions to scenarios	1	1.92	1.16	1.18-2.66
	2	1.80	0.92	1.14-2.46
	3	1.67	0.78	1.17-2.16
	4	1.92	1.00	1.28-2.55
	5	2.25	0.45	0.96-1.54

Another noteworthy finding from this scale is related questions 5 and 6. It appears that participants across all groups generally found the JIs' language and technical information within them to be relatively easy, with no significant challenges encountered. This trend may be attributed to the JIs utilized in the recording, which were sourced from the instructions revised by the MUJI project. The MUJI project's efforts to offer more accessible and comprehensible JIs seem to be effective. However, it is important to recognize that comprehending the instructions does not necessarily equate to seamless application of them in real-life scenarios (May, 1995).

The results concerning participants' perceptions towards the scenario-based tasks indicate overall satisfaction across all groups. However, Group 2 perceived the task as less easy compared to the other groups while Group 3 found it considerably easy. These perceptions are reflected in their comprehension performances (see Table 1): Group 1 demonstrated the lowest performance, while Group 3 achieved one of the two best performances. Interestingly, despite their lower performance, Group 2 exhibited more confidence in the accuracy of their answers compared to Group 1, which actually outperformed them. Similarly, Group 5 displayed high confidence in the accuracy of their answers, yet they were not the best-performing group. Group 5 also reported that it took them longer than expected to complete the task compared to the other groups.

Table 7: Descriptive summary of perceptions towards the task

Question	Group	M	SD	CI 95%
1. Easiness of the task	1	4.00	1.04	3.33-4.66
	2	3.91	1.37	3.04-4.79
	3	4.50	0.52	4.16-4.83
	4	4.16	0.83	3.63-4.69
	5	4.25	0.62	3.85-4.64
2. Satisfaction with your performance	1	2.50	1.16	1.75-3.24
	2	3.25	1.13	2.52-4.27
	3	3.58	1.08	2.89-4.27
	4	3.50	1.00	2.86-4.13
	5	3.50	1.08	2.80-4.19
3. Readiness to serve as a juror	1	2.58	0.99	1.95-3.21
	2	2.66	1.30	1.83-3.49
	3	3.33	1.37	2.46-4.20
	4	3.00	0.95	2.39-3.60
	5	3.58	1.08	2.89-4.27
4. Clarity of the task instructions	1	3.41	0.99	2.67-3.46
	2	3.25	0.77	2.63-3.86
	3	4.08	0.79	3.57-4.58
	4	3.33	0.96	2.83-3.82
	5	3.91	1.16	3.28-4.54
5. Accuracy of task completion	1	2.75	1.05	2.07-3.42
	2	3.08	0.79	2.57-3.58
	3	3.91	0.66	3.49-4.34
	4	3.41	0.79	2.91-3.92
	5	4.00	0.73	3.53-4.46
6. Time taken to complete task	1	3.50	0.90	2.92-4.07
	2	3.00	0.85	2.45-3.54
	3	3.50	0.67	3.07-3.92
	4	3.66	0.98	3.04-4.29
	5	2.83	0.57	2.46-3.20

It is also worth noting that the analysis of task perception showed that while Group 1 did not perform significantly worse than the other groups and that they considered the task to be easy ($M = 4.00$), they felt less confident compared to all other groups in their accuracy ($M = 2.75$) and also declared to feel less ready to serve as a juror. Notably, there is a big disparity in the readiness to serve as a juror between Group 1 and Group 5 ($M_1 = 2.58$, $M_5 = 3.58$). These negative perceptions of Group 1 may be attributed to their lack of access to written jury instructions, highlighting the importance of such access in enhancing confidence and preparedness.

5. Conclusion

The results of this study provide valuable insights into the impact of different modes of jury instruction presentation and accessibility on participants' comprehension levels. The hypotheses regarding the influence of presentation mode and access to written jury instructions were not fully supported by the quantitative analyses, specifically, the group exposed to synchronous reading and listening instructions (Group 2), which lacked access to jury instructions during the scenario assessment, performed slightly worse ($M = 3.17$) than the group that solely listened ($M = 3.47$, Group 1), while other groups (Group 3 and 4) performed marginally better ($M = 3.88$), despite variations in exposure to JIs and access to written materials.

It should be underscored that Group 1 expressed more negative perceptions towards the JIs and the comprehension task. The negative views held by Group 1 could be linked to their lack of exposure to JIs in written mode or access to them while taking the task. This points out the significance of such access in bolstering confidence and readiness. We also believe that simplicity and clarity of MUJI instructions might have minimized performance differences across groups, which can suggest reduced comprehension challenges typically associated with legal language and mitigated impact of presentation mode. Future replication research utilizing non-plain language JIs is needed to test the influence of plain language effect on the mode of JI presentation. However, it should be highlighted that Group 1 expressed more negative perceptions towards the JIs and the comprehension task. The negative views held by Group 1 could be linked to their lack of exposure to JIs in written mode or access to them while taking the task. This points out the significance of such access in bolstering confidence and readiness.

When asynchronous exposure was compared to synchronous exposure, the findings pointed out that asynchronous exposure to both spoken and written jury instructions demonstrated slightly superior performance. Past literature has focused on the impact of RWL, meaning synchronous exposure (Randall, 2014), but no prior research has directly compared the effect of synchronicity of written and oral JIs. It is clear that exposure to different modalities has a positive impact on comprehension, but there is a need for more investigation into which combinations and sequences of modalities best support jurors' understanding of JIs while reducing the cognitive burden they pose.

Our second research question and accompanying hypothesis was that providing participants with access to JIs while attempting to apply them to real-life scenarios – in a court trial, this equates to the deliberation process, and in our study, to a scenario-based assessment task – would enhance comprehension and facilitate this demanding process. The results partially support this hypothesis: groups with access to written JIs during scenario-based tasks demonstrated slightly better performance compared to those without access. Moreover, the perception survey showed that groups with access to JIs reported experiencing more positive emotions during the process and expressed greater confidence in the accuracy of their answers and their ability to serve as jurors. Considering these findings, we can infer that sending jurors to deliberations with a written version of JIs presented to them during a trial might be an effective practice.

A qualitative examination of participant responses shed light on the nuanced reasoning behind their choices, particularly revealing that correct answers did not always align with correct interpretations. Instances where correct answers were provided alongside incorrect interpretations underscored the complexity of juror reasoning processes and the potential influence of extraneous factors on decision-making such as reliance on prior knowledge, confusion in applying the relevant JI to the scenario and issues with recollection. This analysis underscores the importance of adopting a multifaceted approach to comprehension assessment, encompassing both quantitative and qualitative methodologies, to capture the intricacies of juror decision-making accurately.

Similarly, when participants are faced with a more complex situation where they need to use more evaluative critical thinking skills combining multiple sections of JI, they need to truly understand the language of JIs to be able to make an informed decision. Our qualitative investigation showed that comprehension assessment of JI can be quite tricky as giving a correct answer does not necessarily mean that it is because of full comprehension of the instructions or similarly, comprehension of JIs does not necessarily lead to successful application of them into real-life situations. This could lead to potential legal consequences such as arbitrary and lawless verdicts (May, 1995). Access to the jury instructions could mitigate confusion or errors, and it could potentially lead to a smoother deliberation process for jurors.

Finally, we would like to offer some suggestions to researchers interested in studying the mode of jury instruction presentation or replicating our study while considering its limitations. Firstly, we aimed to form five different juries, each representing a specific mode of jury instruction, resulting in a total of 60 participants with 12 in each group. Future studies could benefit from a larger sample size to enable more robust statistical analysis using inferential methods. Additionally, including participants with a more diverse demographic representation, particularly in terms of age and educational background, may yield different insights.

Secondly, conducting our data collection process in a single classroom where participants were divided in the 5 groups posed challenges, and having all groups carry out the activity simultaneously may have introduced confounding factors into our results. For

example, participants being aware that others are receiving different mode of instructions may lead to perceived inequality or unfairness, which can impact their motivation or effort. Similarly, if they feel their version was “easier” or “harder,” they may underperform or overperform, either intentionally or unintentionally. Moreover, this data collection setup can cause distraction or curiosity about what other groups are doing, rather than focusing on their own task. Therefore, researchers aiming for a similar study design should consider collecting data from each group separately to mitigate potential biases.

Thirdly, incorporating qualitative data contributed insightful understanding of participants' thought processes while applying jury instructions to real-life scenarios. An easier way to better understand participants' thought processes would be to replace binary or multiple-choice options with open-ended responses, allowing them to explain how they interpret and apply the jury instructions. Furthermore, triangulating interpretations of qualitative data with participant interviews could offer further understanding of participants' cognitive processes while listening to and applying jury instructions. Another method to gain insight into jurors' perspectives and gather more qualitative data would involve conducting mock deliberations. Through this approach, researchers can observe more clearly what aspects jurors prioritize, how they utilize and apply JIs and the rationale behind their verdicts. In addition, the kind of input that jurors exposed to different modes of JI presentation provide during deliberation can be examined. Therefore, we recommend that future studies integrate rigorous qualitative data collection methods in order to better explore jurors' comprehension of JIs and the effect of mode of presentation.

Our research underscores the need for deeper exploration into the mode of jury instruction presentation, shedding light on its significant impact on comprehension and decision-making processes. Moreover, our findings emphasize the ongoing necessity for evaluating and refining jury instruction practices. This continual process is vital for providing jurors with the necessary support to fulfill their indispensable role within the legal system effectively.

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Appendix A

PREPONDERANCE OF THE EVIDENCE	
JIFU No. 3.1 (1957)	MUJI No CV117 (2011)
<p>The term “preponderance of the evidence” means that evidence which, in your minds, seems to be of the greater weight; the most convincing and satisfactory. The preponderance of the evidence is not determined by the number of witnesses, nor the amount of the testimony, but by the convincing character of the testimony, weighed impartially, fairly and honestly by you. If the evidence is evenly balanced as to its convincing force on any allegation, you must find that such allegation has not been proved.</p>	<p>You may have heard that in a criminal case proof must be beyond a reasonable doubt, but this is not a criminal case. In a civil case such as this one, a different level of proof applies: proof by a preponderance of the evidence.</p> <p>When I tell you that a party has the burden of proof or that a party must prove something by a “preponderance of the evidence,” I mean that the party must persuade you, by the evidence, that the fact is more likely to be true than not true.</p> <p>Another way of saying this is proof by the greater weight of the evidence, however slight. Weighing the evidence does not mean counting the number of witnesses nor the amount of testimony. Rather, it means evaluating the persuasive character of the evidence. In weighing the evidence, you should consider all of the evidence that applies to a fact, no matter which party presented it. The weight to be given to each piece of evidence is for you to decide.</p> <p>After weighing all of the evidence, if you decide that a fact is more likely true than not, then you must find that the fact has been proved. On the other hand, if you decide that the evidence regarding a fact is evenly balanced, then you must find that the fact has not been proved, and the party has therefore failed to meet its burden of proof to establish that fact.</p>

Appendix B

- **CV101 General admonitions.**

Now that you have been chosen as jurors, you are required to decide this case based only on the evidence that you see and hear in this courtroom and the law that I will instruct you about. For your verdict to be fair, you must not be exposed to any other information about the case. This is very important, and so I need to give you some very detailed explanations about what you should do and not do during your time as jurors.

First, although it may seem natural to want to investigate a case, you must not try to get information from any source other than what you see and hear in this courtroom. You may not use any printed or electronic sources to get information about this case or the issues involved. This includes the Internet, reference books or dictionaries, newspapers, magazines, television, radio, computers, iPhones, Smartphones, or any social media or electronic device. You may not do any personal investigation. This includes visiting any of the places involved in this case, using Internet maps or Google Earth, talking to possible witnesses, or creating your own experiments or reenactments.

Second, although it may seem natural, you must not communicate with anyone about this case, and you must not allow anyone to communicate with you. You may not communicate about the case by any means, including by emails, text messages, tweets, blogs, chat rooms, comments, other postings, or any social media.

You may notify your family and your employer that you have been selected as a juror and you may let them know your schedule. But do not talk with anyone about the case, including your family and employer. You must not even talk with your fellow jurors about the case until I send you to deliberate. If you are asked or approached in any way

about your jury service or anything about this case, you must respond that you have been ordered not to discuss the matter. And then please report the contact to the clerk or the bailiff, and they will notify me.

Also, do not talk with the lawyers, parties or witnesses about anything, not even to pass the time of day.

I know that these restrictions affect activities that you consider to be normal and harmless and very important in your daily lives. However, these restrictions ensure that the parties have a fair trial based only on the evidence and not on outside information. Information from an outside source might be inaccurate or incomplete, or it might simply not apply to this case, and the parties would not have a chance to explain or contradict that information because they wouldn't know about it. That's why it is so important that you base your verdict only on information you receive in this courtroom.

Courts used to sequester-or isolate-jurors to keep them away from information that might affect the fairness of the trial, but we seldom do that anymore. But this means that we must rely upon your honor to obey these restrictions, especially during recesses when no one is watching.

Any juror who violates these restrictions jeopardizes the fairness of the proceedings, and the entire trial may need to start over. That is a tremendous expense and inconvenience to the parties, the court and the taxpayers. Violations may also result in substantial penalties for the juror.

If any of you have any difficulty whatsoever in following these instructions, please let me know now. If any of you becomes aware that one of your fellow jurors has done something that violates these instructions, you are obligated to report that as well. If anyone tries to contact you about the case, either directly or indirectly, or sends you any information about the case, please report this promptly as well. Notify the bailiff or the clerk, who will notify me. These restrictions must remain in effect throughout this trial. Once the trial is over, you may resume your normal activities. At that point, you will be free to read or research anything you wish. You will be able to speak-or choose not to speak-about the trial to anyone you wish. You may write, or post, or tweet about the case if you choose to do so. The only limitation is that you must wait until after the verdict, when you have been discharged from your jury service.

So, keep an open mind throughout the trial. The evidence that will form the basis of your verdict can be presented only one piece at a time, and it is only fair that you do not form an opinion until I send you to deliberate.

- **CV117 Preponderance of the evidence.**

You may have heard that in a criminal case proof must be beyond a reasonable doubt, but this is not a criminal case. In a civil case such as this one, a different level of proof applies: proof by a preponderance of the evidence.

When I tell you that a party has the burden of proof or that a party must prove something by a "preponderance of the evidence," I mean that the party must persuade you, by the evidence, that the fact is more likely to be true than not true.

Another way of saying this is proof by the greater weight of the evidence, however slight. Weighing the evidence does not mean counting the number of witnesses nor the amount of testimony. Rather, it means evaluating the persuasive character of the evidence. In weighing the evidence, you should consider all of the evidence that applies to a fact, no matter which party presented it. The weight to be given to each piece of evidence is for you to decide.

After weighing all of the evidence, if you decide that a fact is more likely true than not, then you must find that the fact has been proved. On the other hand, if you decide that the evidence regarding a fact is evenly balanced, then you must find that the fact has not been proved, and the party has therefore failed to meet its burden of proof to establish that fact.

- **CV118 Clear and convincing evidence.**

Some facts in this case must be proved by a higher level of proof called "clear and convincing evidence." When I tell you that a party must prove something by clear and convincing evidence, I mean that the party must persuade you, by the evidence, to the point that there remains no serious or substantial doubt as to the truth of the fact.

Proof by clear and convincing evidence requires a greater degree of persuasion than proof by a preponderance of the evidence but less than proof beyond a reasonable doubt.

I will tell you specifically which of the facts must be proved by clear and convincing evidence.

- **CV119 Evidence.**

"Evidence" is anything that tends to prove or disprove a disputed fact. It can be the testimony of a witness or documents or objects or photographs or certain qualified opinions or any combination of these things.

You must entirely disregard any evidence for which I sustain an objection and any evidence that I order to be struck.

Anything you may have seen or heard outside the courtroom is not evidence and you must entirely disregard it.

The lawyers might stipulate-or agree-to a fact or I might take judicial notice of a fact. Otherwise, what I say and what the lawyers say is not evidence.

You are to consider only the evidence in the case, but you are not expected to abandon your common sense. You are permitted to interpret the evidence in light of your experience.

- **CV128 Objections and rulings on evidence and procedure.**

From time to time during the trial, I may have to make rulings on objections or motions made by the lawyers. Lawyers on each side of a case have a right to object when the other side offers evidence that the lawyer believes is not admissible. You should not think less of a lawyer or a party because the lawyer makes objections. You should not conclude from any ruling or comment that I make that I have any opinion about the merits of the case or that I favor one side or the other. And if a lawyer objects and I sustain the objection, you should disregard the question and any answer.

During the trial I may have to confer with the lawyers out of your hearing about questions of law or procedure. Sometimes you may be excused from the courtroom for that same reason. I will try to limit these interruptions as much as possible. Please be patient even if the case may seem to go slowly.

- **CV131 Spoliation.**

If I have determined that either party intentionally concealed, destroyed, altered, or failed to preserve evidence, then you must assume that the evidence would have been unfavorable to that party.

- **CV153 Legal rulings**

During the trial I have made certain rulings. I made those rulings based on the law, and not because I favor one side or the other. However

- if I sustained an objection,
- if I did not accept evidence offered by one side or the other, or
- if I ordered that certain testimony be stricken, then you must not consider those things in reaching your verdict.

Appendix C

PART I

Please read the scenarios below and answer the questions to the best of your ability. Do not leave any of the questions blank.

Scenario 1: John is involved in a civil lawsuit against his neighbor regarding a property boundary dispute. During the trial, both parties present evidence and testimony to support their claims. At the conclusion of the trial, the judge instructs the jury regarding the burden of proof, as you have just heard in the recording.

Question: During a civil case like this one, is it enough to reach a verdict if the fact is more likely to be true than not true?

- a) Yes
- b) No
- c) Don't know

Please briefly justify your answer (why yes or why no?):

Scenario 2: You are a member of a jury deliberating whether someone is guilty of stealing money. During the trial, the judge made decisions about what evidence and testimony could be used. Sometimes, the judge said certain things couldn't be considered because they weren't relevant to the case or were unreliable.

As the jury talks about what they think, some people are unsure if they should think about the things the judge said to ignore. They worry that not thinking about all the evidence might make it harder to understand what really happened and make a fair decision.

Question: Based on the jury instruction provided, should the jury deciding if someone is guilty take into consideration the evidence the judge said wasn't relevant during the trial?

- a) Yes
- b) No
- c) Don't know

Please briefly justify your answer (why yes or why no?):

Scenario 3: You are a member of a jury deliberating on a personal injury case. During the trial, the judge determined that the defendant intentionally destroyed crucial medical records related to the plaintiff's injuries.

Question: Based on the jury instruction provided, should the jury assume that the destroyed evidence would have been favorable to the defendant?

- a) Yes
- b) No
- c) Don't know

Please briefly justify your answer (why yes or why no?):

Scenario 4: You are part of a jury in a civil trial regarding a contract dispute. During deliberations, a fellow jury member says you should think about how many people each side brought to speak as witnesses to decide who's right.

Question: Based on the jury instruction provided by the judge, would you, as a juror, agree that would be a good method?

- a) Yes
- b) No
- c) Don't know

Please briefly justify your answer (why yes or why no?):

Scenario 5: You are part of a jury in a civil trial involving a contested will. The plaintiff presents one witness who gives a detailed account of their interactions with the deceased and the circumstances surrounding the creation of the will. On the other hand, the defendant brings in a few witnesses to support their claim that the will is valid. While their testimonies lack detail, they also show some old letters to prove their relationship with the deceased.

Question: According to the instructions given by the judge, do you think the evidence presented by the plaintiff meets the standard of clear and convincing evidence?

- a) Yes
- b) No
- c) Don't know

Please briefly justify your answer (why yes or why no?):

PART II

Perception Survey

Indicate the degree of agreement with the following statements under the rating scale: Never (1), Little (2), Somewhat (3), Very Much (4)

1. I had doubts	1	2	3	
2. I felt distressed	1	2	3	
3. I was confused	1	2	3	
4. There were problems with the length of the jury instructions	1	2	3	
5. There were problems with the language of the jury instructions	1	2	3	
6. There were problems with the technical information in the jury instructions	1	2	3	
7. There were problems remembering the jury instructions	1	2	3	
8. There were problems applying the jury instructions to scenarios	1	2	3	

How would you rate these items on a scale from 1-5?

1. Easiness of the task	1 (not difficult at all)	2	3	4	5 (very difficult)
2. Satisfaction with your performance	1 (not satisfied at all)	2	3	4	5 (very satisfied)
3. Readiness to serve as juror	1 (not ready at all)	2	3	4	5 (very ready)
4. Clarity of task instructions received	1 (not clear at all)	2	3	4	5 (very clear)
5. Accuracy of task completion	1 (not accurate at all)	2	3	4	5 (very accurate)
6. Time taken to complete the task	1 (much longer than expected)	2	3	4	5 (much shorter than expected)

PART III

Demographic information

Age:

Gender:

Major:

Grade:

Are you an American (USA) citizen: Yes / No

Do you speak/know any languages other than English? If yes, which languages?

Is there anyone in your family whose job is related to law? If yes, who and what is their job?

Have you ever served as a juror before? If yes, please briefly explain when and what type of case (civil or criminal). How was your experience as a juror?

Should you be given the chance, would you be willing to serve as a juror in the future?