

Perceptions of Inconsistent Reports of Long-Term Autobiographical Memory

by

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Abstract

Delayed criminal cases are prevalent in Canada, but how these delayed reports are perceived has not yet been investigated. The present study examined perceptions of delayed and inconsistent reports of autobiographical memory. Participants viewed a witness making a statement that was either consistent or inconsistent with a previous report about a crime that took place 1-day, 2-years, or 15-years ago. Participants were asked to rate the witness' credibility, make verdict decisions, and recommend a sentence length. Participants found an inconsistent witness to be less cognitively competent, honest, and more suggestible. Perceived credibility was not impacted by delay but verdict decisions were. This finding may have implications for the justice system if triers of fact do not consider the possibility that witnesses testifying after a long delay may recall fewer, and potentially different, details, and that inconsistencies across repeated interviews may not always be indicative of a completely inaccurate report.

Keywords: perceived credibility; memory; delay; consistency; witness

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Introduction

Judgments regarding the credibility of a witness are widespread in the justice system, for events that happened both recently and long ago. Circumstances in which a witness testifies about a crime after a long delay are common, as most crimes in Canada, and many other countries, do not have a statute of limitations (Connolly, Coburn, & Chong, 2017). Such cases may go to trial many years after the crime occurred. In delayed cases, a witness' testimony may be more likely than in timely cases to be the only form of evidence presented at trial due to the loss of corroborating evidence over time (e.g., biological evidence, video evidence). If only one piece of evidence (e.g., witness testimony) is present, triers of fact place significant weight on this evidence, making it important to understand how such evidence is perceived. Further, statements from witnesses will be evaluated not only at trial, but at various stages in the investigative process including disclosure to prosecution, friends, family, investigators, and lawyers. Despite the prevalence of delayed investigations, we know little about how reports of such memories are evaluated. It is imperative that we better understand how delayed statements are perceived by individuals in the justice system, as well as other individuals who may make judgements about the veracity of such statements.

There are several reasons why a case may not be prosecuted until after a long delay. Frequently, this delay can be attributed to a delayed disclosure of the crime. Many victims of crime, and often those who are victims of sexual assault, do not report their crime until long after the alleged crime occurred, if at all (London, Bruck, Wright, & Ceci, 2008). A review of sexual assault cases in Ireland revealed a majority of cases were reported 11 or more years after the crime occurred (Bunting, 2014). If the victim was a child when the crime occurred, such as in cases of child sexual assault, they may experience feelings of responsibility or shame, fear for their own safety, or worry they may not be believed, thus delaying reporting (Jensen, Gulbrandsen, Mossige, Reichelt, & Tjersland, 2005; Paine & Hansen, 2002). Additionally, children may not disclose an experience in order to protect the perpetrator, especially if he or she is a family member or loved one (Lewis, 2015). Although a central aim of most criminal justice systems is to prosecute cases in a timely manner (see *R. v Jordan*, 2016), crimes may not be prosecuted until after a delay has occurred (Euale & Turtle, 1999). This could be, in part, due to heavy caseloads for those in the justice system (i.e., lawyers, judges), inadequate

resources, or overly complex cases that require additional time investigating (Standing Senate Committee on Legal and Constitutional Affairs, 2017). Based on a review of over 4000 delayed (defined as over two years ago) child sexual assault cases in Canada, the length of delay to prosecution was, on average, 13 years after the crime ended (Connolly, Chong, Coburn, & Lutgens, 2015). Despite the prevalence of these delayed cases, whether due to a delayed disclosure or delayed prosecution, there is little research examining what can be expected from witnesses, and how these witnesses may be perceived.

Memory

Given the many practical issues that come with conducting research on extremely long-term autobiographical memory (e.g., ground truth is rarely known, attrition rates are high), there is a paucity of relevant literature. Wells, Morrison, and Conway (2014) investigated adults' memories of early childhood events, both positive and negative. Participants were asked to recall details about the memory, such as the time it occurred and clothing worn. Adults were able to remember details regarding the who, what, and where of the event, but struggled with more specific details such as clothing and weather. Likewise, Peterson and Whalen (2001) demonstrated that children were more likely to recall central details about a hospital visit that occurred five years earlier, while peripheral details faded from memory. Importantly, the details that were remembered were highly accurate.

There are also aspects of the broader memory literature that may be applied to the particular area of long-term autobiographical memory. A body of research has focused on the way in which forgetting occurs. The majority of forgetting will take place in a period after an event, with the absolute amount of forgetting tapering off over time (Ebbinghaus, 1964). As the total number of details in one's memory decreases, the total number of possible items to be forgotten also decreases. This pattern of memory loss is characterized as the forgetting curve. Based on this curve, it may be anticipated that the state of a memory, after initial forgetting has occurred, will not change much from that point forward. However, it is important to note that the timing of this curve has not been established and may depend on numerous factors (e.g., state of encoding). Although it has been proposed that the majority of forgetting will take place after an event has concluded, this stage could last a matter of hours, days, weeks, months, or years. An

accurate estimate of when the majority of forgetting will take place has not been determined. Since the original conceptualization of the forgetting curve, additional literature has further supported the pattern (e.g., Murre & Dros, 2015; Rubin & Wenzel, 1996; Wixted & Ebbesen, 1991).

The conditions under which a memory was encoded can impact how well a memory can be recalled. For example, an individual who was intoxicated at the time of encoding may be impaired in recall at a later time, although this is not always the case (Altman, Compo, McQuiston, Hagsand, & Cervera, 2018; Compo et al., 2011). Highly stressful events may also lead to impoverished memories (Deffenbacher, Bornstein, Penrod & McGorty, 2004) though others have found that highly emotional events may lead to improved memory (Talarico, LaBar, & Rubin, 2004). As well, memory rehearsal that occurs during the interval between encoding and retrieval can help slow forgetting (Dark & Loftus, 1976). The way in which a memory is retrieved can also impact the accuracy of the memory report. Using leading questions (e.g., 'When he touched you, what hand did he touch you with?', if no touch has been previously reported) can result in inaccurate reports (Loftus, 1975). Asking open ended questions (e.g., 'Tell me everything that happened') can help to reduce reported inaccuracies that are due to interviewer influence (Poole & Lamb, 1998).

Inconsistencies in memory reports

In order to gather information about a witness' memory, interviews regarding the target event are conducted, most often by police officers or investigators, but also by other individuals (e.g., lawyers). Sometimes, multiple interviews may take place, for instance, when new evidence is discovered and/or renewed effort is directed to an old case. These repeated interviews can result in inconsistencies occurring in a witness' statements. The three types of inconsistencies studied in the present research are contradictions, reminiscences, and omissions.

Contradictions

Contradictions are details that directly conflict with previous details reported by the witness (Krix, Sauerland, Lorei, & Rispens, 2015). Despite reporting at least one incorrect detail, witnesses who provide contradictory details may not be inaccurate in all

other details reported about the event. For example, Brewer, Potter, Fisher, Bond, and Luszcz (1999) asked participants to recall information about a mock theft they witnessed on two separate occasions, with a delay of two weeks between interviews. Participants' responses were coded for presence of contradictions, and overall accuracy (the number of correctly recalled items divided by the number of all recalled items). While contradictions were reported by almost all participants, this was not a significant predictor of overall accuracy. Participants were also more likely to provide a contradictory detail when forced to respond to a specific question (e.g., What color were they wearing?) rather than being given the option to not answer.

Reminiscence

Reminiscent details are details that an individual did not report initially, but that are recalled at a later date (Krix et al., 2015). Although these details are not originally recalled, they are often quite accurate and can happen frequently (Krix et al., 2015). It has also been shown that reminiscent details may be more common after a short (3 months) than long (6 months) delay between interviews (Peace et al., 2015). Oeberst (2012) found that, when asked to recount the same event multiple times, 100% of participants presented reminiscent details in subsequent reports of an event. Brewer and colleagues (1999) also demonstrated the presence of reminiscent details reported in a follow up interview that took place two weeks after an initial interview. Yuille and Cutshall (1986) further examined reminiscence in a study of individuals who had witnessed a shooting. Witnesses were first interviewed by a police officer in the course of the investigation, and were later interviewed by researchers for the study. A large number of reminiscent details was found in the second interview, although this could be a product of the more specific questions asked by the researchers.

Omissions

Details that were reported in an early interview but not in a later interview are known as omissions (Peace et al., 2015). As the delay between interviews increases, more omissions can be expected (Peace et al., 2015). In a case study involving multiple interviews of a 9-year-old discussing the abduction of her older sister, roughly one third of information detailed in the first interview was left out of subsequent interviews (Orbach, Lamb, La Rooy, & Pipe, 2012). From the information omitted, 88% was

categorized as peripheral to the event. Additional research has also reported that omissions may occur more frequently with peripheral details of an event as opposed to central details (see Peterson & Whalen, 2001; Wells, Morrison, & Conway, 2014). While this loss could be due to forgetting, the absence of details in a secondary interview has also been theorized to be due to alternative reasons, such as the belief of a witness that the interviewer already knows the information (Orbach et al., 2012).

Perceptions

General beliefs about memory

When it comes to knowledge about memory, potential jurors, as well as some other legal professionals, may be lacking in their understanding. Schmechel, O'Toole, Easterly and Loftus (2006) surveyed mock jurors and found that a large percent had misunderstandings about the way memory works. Many laypeople believed that memory works much like a camera (52%), and a witness could easily play back a memory in their mind (46%) (see also Simons & Chabris, 2011). Additionally, mock jurors were overconfident in their own memory abilities, agreeing that they have excellent memory and would never forget a face (66%). Simons and Chabris (2011) found a portion of potential jurors believed that memories will not change after initial encoding (48%). Further, although the forgetting curve has been established in research, it appears many potential jurors are unaware of its effect. In a survey of over 100 jurors, only roughly 30% agreed with the statement "The rate of memory loss for an event is greatest right after the event" (Benton, Ross, Bradshaw, Thomas, & Bradshaw, 2006). Laypeople also struggle to accurately estimate how memory may decay over time. Oeberst (2012) compared the results of a memory task with participants' estimations of how peers would perform on the task. Participants were given a brief description of the task (i.e., recalling information after an hour, day, and week), and sample graphs of how memory might decay. Participants believed memory performance would drop drastically over a period of time (up to a week), while actual memory performance stayed significantly higher than estimations. Krix and colleagues' (2015) participants, in this case police officers, significantly underestimated the accuracy of other individuals' memory recall after a week's delay, demonstrating laypeople and police officers alike may not be able to accurately assess the level of recall an individual may have at a given time. This body of

research suggests that overall, individuals struggle with understanding how memory works, although the way in which they are mistaken is inconsistent.

Inconsistencies

Inconsistencies in a witness' testimony are often seen as indicators of low credibility or inaccuracy (Brewer et al., 1999). For some, an inconsistent report given by a witness outweighs any other potential discrediting factor (e.g., lack of confidence). Inconsistencies are so well known to be problematic for witness credibility that legal professionals routinely attempt to elicit inconsistent answers from a witness in order to discredit them in the eyes of triers of fact (Glissan, 1991). Brewer and colleagues (1999) assessed the impact of inconsistencies on mock juror's beliefs by asking participants to rate several behaviours as to how indicative the behaviour was of accuracy. Participants believed inconsistencies were highly suggestive of inaccurate testimony. Potter and Brewer (1999) surveyed police officers, lawyers, and mock-jurors and found that similar views were present across all groups: inconsistencies in a witness' testimony was a sign of inaccuracy. In a mock juror study, Berman, Narby, and Cutler (1995) demonstrated that even a single inaccuracy in a witness' testimony in an armed robbery trial, on either a central detail (e.g., was the perpetrator clean shaven) or a peripheral detail (e.g., what type of bag the perpetrator was carrying), diminished the witness' credibility as a whole.

Layperson beliefs about specific types of inconsistencies, reminiscences in particular, have also been examined. Brewer and colleagues (1999) found that reminiscent details were predictors of beliefs of inaccurate testimony. Potter and Brewer (1999) reported similar beliefs held by police officers and lawyers. Oeberst (2012) examined perceptions of accuracy of reminiscent details compared to actual accuracy, and found that participants significantly underestimated the accuracy of such recollections. These findings demonstrate that, though they can actually be quite accurate, reminiscent details are often not perceived as such. As well, participants judged reminiscent details as significantly less accurate than consistent details, although the actual accuracy between these forms of details was not significantly different. Similarly, Krix and colleagues (2015) compared estimations of accuracy of reminiscent details with contradictory details, finding both were underestimated in accuracy.

Inconsistencies in witness testimony may also impact verdict decisions, demonstrating the effect they can have on a witness' perceived credibility. Berman and Cutler (1996) compared perceptions of consistent testimony with contradictory (either on the witness stand, or between pre-trial interviews and the witness stand) and reminiscent testimony (between pre-trial interviews and the witness stand) on a mock-jury scenario. Those in the consistent witness condition were more likely to convict (69%) than those in the reminiscent (37%) or contradictory conditions (20%). These results suggest that, while any form of inconsistency will lower the credibility of a witness, outright contradictions might be the most damaging to perceived credibility.

Delay

As it has been established that many cases may go to trial after a delay (see Connolly & Read, 2006), it is important to understand how this delay may impact perceptions of a witness. A large portion of the literature on delayed memory testimony has focused on the perceived credibility of individuals who have reported a repressed memory (i.e., a memory that was out of one's consciousness, and later came to awareness; see Golding, Sanchez, & Segó, 1999 for an example of a mock-jury study involving repressed memories). However, as continuous memories are far more commonly reported (Pathihis, Ho, Tingen, Lilienfeld, & Loftus, 2014), it is important to also focus on perceptions of continuous memories. Pozzulo, Dempsey, and Crescini (2010) examined the impact of delayed testimony of a continuous memory on perceived credibility. Participants were presented with a mock trial transcript in which a complainant described a single instance of a crime perpetrated in her childhood, either 2-, 15-, or 30-years earlier. The delay in trial was due to a delayed disclosure by the complainant. Participants were more likely to convict if the alleged offence occurred 2-years ago than 30-years ago. Conviction rates in the 15-year condition were intermediate and did not differ from the other two conditions. Ellison and Munro (2009) found that, when presented with a mock trial of a sexual assault case, participants questioned a witness' credibility when they delayed their disclosure by only three days compared to disclosing immediately after the attack. An analysis of participants' reasoning in the study demonstrated that individuals believed if the crime occurred in the way that the witness described, they would not have waited to disclose the event. Another study found that when presented with a similar mock trial of a sexual assault

case, participants believed a witness who reported the crime immediately after it occurred, rather than 18 months later, to be significantly more credible (Balogh, Kite, Pickel, Canel, & Schroeder, 2003). The immediate report condition also led to higher guilt ratings. This body of research demonstrates a delay in allegation of a crime may result in a loss of perceived credibility.

Present study

Given that an individual's statement about an event that occurred long ago is often evaluated for credibility, it is important to understand more about these judgements of credibility. Research has demonstrated that after an initial drop in number of details reported, although the timing of which is unknown, very little forgetting will occur and details of a memory will remain stable, in the absence of outside influence (Ebbinghaus, 1964). Additionally, various forms of inconsistencies may be present in witness' testimony across repeated interviews (Krix et al., 2015). Previous research has examined the independent effects these two important factors (delay and consistency) have on ratings of witness credibility and verdict decisions, however it has yet to be studied how a long delay and inconsistencies together may influence credibility ratings. As delayed reports and repeated interviews are both conditions under which inconsistencies are likely, and are both prevalent in the justice system, it is important to understand how these factors may interact. Additionally, previous research has focused primarily on short delays (e.g., a month), and has often investigated the impact of repressed memories when a longer delay has been examined. Those studies that do examine witness credibility after a long delay (e.g., Pozzulo et al., 2010) focus on situations of delayed disclosure, but do not reflect another likely scenario: immediate disclosure but a delayed follow-up interview or trial. This can happen in many instances, such as when an individual discloses first to a friend or loved one and then chooses not to disclose again until a delay has passed (Malloy, Brubacher, & Lamb, 2013), or if the investigation is stalled due to, for example, a lack of evidence. The present study focuses on circumstances of immediate disclosure and delayed investigation. The current research aimed to investigate the impact of consistency and delay on perceptions of reports of long-term autobiographical memory by exploring the following question: How are inconsistencies (i.e., contradictions, reminiscences, and omissions) in

repeated reports of autobiographical memory after variable delays perceived in term of witness credibility, verdict decisions, and sentence length?

Participants watched a portion of a mock interview between a lawyer and witness discussing details of a crime. The witness described what he saw on the night of the crime, with the delay between the crime (first interview) and the second interview varying across conditions (i.e., 1-day delay, 2-year delay, 15-year delay). The witness' testimony also varied in terms of consistency; the witness was consistent, or had contradictions, reminiscences, or omissions. Participants were asked to rate the witness on the dependent variables of interest: cognitive competency, honesty, and suggestibility based on a three-factor model of credibility (Andrews, Warren, Kehn, Schweitzer, & Nunez, 2018). Participants were also asked to take on the role of a mock juror and make a verdict decision as well as recommend a sentence length, to gather further insight into their opinions about the witness.

It was anticipated that participant ratings of the witness' credibility would be influenced by both delay and consistency. Based upon Ebbinghaus' (1964) forgetting curve, the completeness of a memory after about a 2-year delay should be similar to that after a 15-year delay. However, it was not anticipated that participants would perceive it as such. Thus, it was hypothesized that there would be a decline in perceived credibility across conditions, with the highest ratings of perceived credibility for a witness retelling their story after a 1-day delay, lower levels of perceived credibility after a 2-year delay, and lower still after a 15-year delay, as demonstrated in previous research (see Pozzulo, Dempsey, & Crescini, 2010, for example). It was also anticipated that participants would be aware that inconsistencies can occur in repeated interviews, but not that these inconsistencies do not necessarily lead to errors in overall memory or reduced accuracy. Thus, it was hypothesized that one inconsistency would discredit the entirety of the witness' testimony, as reflected in lower ratings of witness credibility, fewer convictions, and lower ratings of likelihood of suspect guilt for conditions in which a witness presents any inconsistency compared to one who is consistent (Berman & Cutler, 1996). In particular, I anticipated that contradictions would be seen as the most detrimental type of inconsistency, as suggested by previous research (e.g., Berman & Cutler, 1996). Therefore, the contradictory condition would result in lowered perceived credibility, fewer convictions, and lower likelihood of suspect guilt ratings than any other form of inconsistency. Additionally, it was hypothesized that participants would recommend a

shorter sentence to the defendant in a case with an inconsistent witness giving their account after a delay as a further reflection of the lower perceived credibility of these types of reports.

Methods

Participants

A total of 465 participants took part in the study. Participants were recruited from undergraduate psychology courses, and participated in exchange for course credit. Participant responses were checked to ensure manipulation check questions were answered correctly. A large number of participants failed one ($N = 137$) and a small number of participants failed both ($N = 16$) manipulation check questions. When examining what types of failures were made, the majority of participants (74.4% of participants who failed one manipulation check) failed the manipulation check regarding the type of inconsistency present. Participants were asked to identify what type of inconsistency was present in the materials; participants frequently correctly identified that an inconsistency occurred, but not which type. It is believed that participants may have been confused about which response accurately described the inconsistency they saw (e.g., presented new information in the second interview misconstrued as describing a contradiction rather than reminiscence), resulting in a high failure rate. As such, it is believed only one manipulation check question (i.e., how long ago did the crime occur?) truly worked as intended. Given that such a large number of participants failed the question about consistency, and the likelihood that the question was not understood as intended, data were analyzed both with and without the “failed” participants. Keeping the participants who failed the manipulation check question regarding consistency in with the full sample did not alter the conclusions; as such, these participants were included in the following analyses. Only those who failed the question regarding the delay were excluded from analyses. This resulted in a total of 415 participants. Based on an *a priori* power analyses, this was an adequate sample to detect a medium effect, $f = .25$, $\alpha = .05$, power = .8, $N = 279$.

Participants were primarily female¹ (60.2%), and Caucasian (31.70%), East Asian (30.50%), and South Asian (21.90%). The mean age of participants was 20.13 years ($SD = 3.15$). The majority of participants were Canadian Citizens (85.90%),

¹ Two participants did not provide their gender.

identified English as their primary language (79.10%), and reported being a student as their primary occupation (78.10%).

Design

The present study was a 3 (Delay: 1-day delay, 2-year delay, 15-year delay) x 4 (Consistency: consistent, contradictions, reminiscent, omissions) between-subjects design. The primary dependent variables of interest were participants' ratings of the witness' honesty, cognitive competence, suggestibility, dichotomous and continuous ratings of guilt, and sentencing recommendations.

Materials

Video

Participants watched one of 24 videos (two versions were created for each condition of the 3 x 4 design) of a witness describing a crime they observed (see Appendix A for script). The witness explained having observed a man being assaulted and robbed late one evening. The witness indicated that he was interviewed by the police immediately after the crime took place, and is now speaking with a prosecuting lawyer. The lawyer was attempting to gain further information from the witness about what occurred, after having examined the initial police statement. The witness was speaking with the lawyer after a 1-day delay, a 2-year delay, or a 15-year delay from the time of the initial police statement and crime. The witness was 50 years old at the time of the second interview, and would have been 50, 48, or 35 years at the time of the crime. The witness' statement also included a manipulation of varying levels of consistency in his account of what happened. The witness was either consistent in his recall (i.e., story stays the same), contradictory (i.e., in the first interview said the man had a knife, in the second said he had a gun, or vice versa), reminiscent (i.e., in the first interview did not mention a weapon, in the second said the man had a gun or a knife) or omitted previously reported information (i.e., in the first interview said the man had a gun or a knife, in the second did not mention a weapon). These inconsistencies were verbally emphasized by the lawyer asking the questions. Two versions of the set of 12 videos were created to counterbalance the type of weapon discussed. Videos that only mentioned one weapon (i.e., consistent, reminiscent, omissions) mentioned a gun in half

the videos, and a knife in the other half. Videos that mentioned both weapons (i.e., contradictory) were counterbalanced as to which weapon was mentioned first. All videos were similar in length.

Questionnaire

Participants answered a series of questions regarding the video they had just watched (See Appendix B). Two manipulation check questions regarding the delay and inconsistencies were presented. The scale of credibility used in the present study has been adapted from the Child Credibility Assessment Scale (Andrews et al., 2018) with each question rated on a 7-point Likert type scale. Participants were also asked to provide a dichotomous verdict and rate the likelihood of the suspect's guilt from 0% to 100%, with a higher percentage reflecting a greater likelihood of guilt. Participants were also asked to rate their confidence in their verdict decision on a scale of 1-10. They were then asked if they would like to make a sentencing recommendation beyond the suggested minimum sentence of 5 years. If they chose to, they were asked to choose an appropriate number of years before parole eligibility, up to 25 years. Participants were asked to provide a reason for their verdict and sentencing recommendations as well as what role the witness' testimony had in their sentencing recommendation. Participants were then asked, ignoring the criminal law in the jurisdiction, what sentence type, duration, and fine (if applicable) would be appropriate. Participants were provided with information on different potential sentence options (e.g., imprisonment, conditional sentence of imprisonment) to help guide their decision. Finally, participants were asked to complete a questionnaire regarding their demographic information (e.g., age, sex, primary language, nationality, ethnicity, and occupation).

Procedure

Participants came into the lab to complete the study in groups of up to four. Participants were given a consent form detailing the study, and a chance to ask questions. After signing the consent form, groups were randomly assigned to watch one of 24 videos on a projector screen in a mock jury room. After viewing the video, participants were asked to complete a written questionnaire about the video they had just watched, as described above. Following the questionnaire, participants were given a

debriefing form that explained the study, and given another chance to ask questions. Participants were then thanked for their participation and the study concluded.

Coding

Participant's open-ended responses were coded. All responses were read by two coders, common themes were identified, and categories were created. Each response was then coded for as many reasons as provided by the participant. However, for the purposes of analyses, the first response from each open-ended question was used as it is hypothesized that this was the participant's most salient reason. Interrater for each open-ended variable was established at Kappa > .80. All responses were then coded by two coders and disagreements were discussed. For the question regarding participant's verdict decision, 15 categories were identified (see Appendix C for categories and examples). Responses regarding participant's reason for their sentencing recommendation were coded into six categories. Finally, responses to the question regarding what role the witness' testimony had in making a sentencing recommendation were coded into ten categories. Open-ended responses to questions regarding demographic information (i.e., primary language, occupation) were also coded into categories.

Results

A one-way analysis of variance (ANOVA) was conducted to examine effects of order of weapon discussion in the stimuli on the variables of interest (e.g., cognitive competence, honesty, suggestibility, verdict, likelihood of suspect guilt). As no significant difference was found between responses for those that watched videos with a knife mentioned first and those who watched videos with a gun mentioned first, p 's > .37, weapon order was collapsed across conditions.

Cognitive competence

An aggregate score was computed for participants' overall ratings of witness cognitive competence by taking the mean of six questions related to cognitive competence. See Table 1 for means and standard deviations. A 3 (Delay) \times 4 (Consistency) ANOVA was conducted to examine the effects of the independent variables on perceived cognitive competence. A significant impact of consistency was found on cognitive competency, $F(3, 397) = 16.19, p < .001, \eta_p^2 = .11$. Post hoc analyses revealed there was a significant difference in the perceived cognitive competence of a witness who was consistent compared to one who showed any type of inconsistency, p 's < .001. There were no significant differences between any levels of inconsistency, p 's > .797. Participants found a consistent witness to be significantly more cognitively competent than an inconsistent witness. Delay did not have a significant effect on the perceived cognitive competence of the witness, $F(2, 397) = 0.71, p = .492, \eta_p^2 < .01$. There was also no significant interaction of delay and consistency on cognitive competence, $F(6, 397) = 0.50, p = .806, \eta_p^2 = .01$.

Honesty

A mean score of witness honesty was calculated by taking the mean of four questions regarding the honesty of the witness. Two questions were worded in such a way that a high score indicated low perceived honesty, and were reverse coded for purposes of analyses. See Table 1 for means and standard deviations. An ANOVA revealed a significant impact of consistency on perceived honesty, $F(3, 399) = 7.10, p <$

.001, $\eta_p^2 = .05$. Follow up tests indicated a significant difference between the consistent condition and all levels of inconsistency, $p < .01$. There were no differences between levels of inconsistency, $p > .67$. Participants viewed a witness who was inconsistent to be significantly less honest than a witness who was consistent. There was no significant influence of delay on witness honesty, $F(2, 399) = 0.71, p = .490, \eta_p^2 < .01$. Similarly, there was no significant interaction present, $F(6, 399) = .85, p < .533, \eta_p^2 = .01$.

Suggestibility

Participants' overall ratings of witness suggestibility were taken from the mean of four questions intended to measure the perceived suggestibility of the witness. Means and standard deviations can be found in Table 1. A 3×4 ANOVA demonstrated a significant effect of consistency on perceived suggestibility, $F(3, 398) = 4.25, p = .006, \eta_p^2 = .03$. Post hoc analyses revealed a significant difference between the consistent condition and the omission condition, $p = .004$. Participants rated a witness who had an omission as significantly more suggestible than a consistent witness. There were no other significant differences between conditions (e.g., consistent, contradictory, reminiscent). There was no significant impact of delay on participants' ratings of witness suggestibility, $F(2, 398) = 0.95, p = .389, \eta_p^2 < .01$, nor a significant interaction of delay and consistency on perceived suggestibility, $F(6, 398) = 1.39, p = .218, \eta_p^2 = .02$.

Verdict

Dichotomous verdict

Participants rendered a dichotomous verdict decision regarding the guilt of the defendant (i.e., guilty/not guilty). See Table 2 for frequencies of verdict decisions. The consistency of the witness had no significant impact on verdict decision, $\chi^2(2, N=411) = 0.37, p = .946, \phi = .03$. There was also no significant impact of delay on verdict decision, $\chi^2(2, N=411) = 4.77, p = .092, \phi = .11$. A chi-square analysis of delay at levels of consistency was also conducted to examine the impact of the independent variables on dichotomous verdict decisions. There were no significant differences in delay across the

consistent, $\chi^2(2, N=109) = 0.50, p = .78, \phi = .07, \phi = .12$, reminiscence, $\chi^2(2, N=100) = 0.07, p = .97, \phi = .03$, and omission conditions, $\chi^2(1, N=95) = 3.13, p = .07, \phi = .18$. There was a significant impact of delay in the contradictory condition, $\chi^2(2, N=107) = 8.13, p = .017, \phi = .28$. Follow up z-tests revealed a significant difference between the 15-year delay condition and the 1-day delay condition for a contradictory witness, $p = .004$. There were significantly fewer guilty verdicts in the 15-year delay contradictory condition when compared to the 1-day delay contradictory condition. No other differences were found, $p > .064$.

Likelihood of suspect guilt

Participants also rated the likelihood of the suspect's guilt on a scale from 1-100. Means and standard deviations can be found in Table 3. A significant effect of delay was found on likelihood of suspect guilt, $F(2, 397) = 5.05, p = .007, \eta_p^2 = .03$. Follow up tests showed a significant difference between participants ratings of likelihood of suspect guilt in the 1-day delay condition when compared to the 2-year delay, $p = .047$ and 15-year delay conditions, $p = .011$. Compared to a 1-day delay, participants rated the likelihood of suspect guilt lower when the witness had a 2-year delay or 15-year delay between the crime and their retelling. There was no difference between the 2-year delay condition and 15-year delay, $p = .839$. There was no significant impact of consistency on likelihood of suspect guilt, $F(3, 397) = 0.06, p = .981, \eta_p^2 < .01$. There was also no significant interaction of delay and consistency present in ratings of likelihood of suspect guilt, $F(2, 397) = 0.81, p = .561, \eta_p^2 = .01$.

Verdict confidence

Participants gave a rating of their confidence in their verdict on a scale of 1-10. See Table 3 for means and standard deviations. A 3×4 ANOVA was conducted and revealed a significant impact of delay on participant's confidence in their verdict decision, $F(2, 395) = 4.18, p = .016, \eta_p^2 = .02$. Post hoc analyses revealed a significant difference between the 1-day delay condition and the 2-year delay, $p = .015$. No significant difference was found between the 1-day and 15-year delay conditions, $p = .168$, and the 2-year and 15-year delay conditions, $p = .616$. Participants reported higher confidence in

their verdict for a witness retelling their story after a 1-day delay compared to a 2-year delay. There was no significant impact of consistency on verdict confidence, $F(3, 395) = 1.46, p = .226, \eta_p^2 = .01$, nor was there a significant interaction, $F(6, 395) = 0.24, p = .962, \eta_p^2 < .01$.

Reasons for verdict decision

Participants were also asked an open-ended question regarding their reasons behind their verdict decision and their first reasons given were analyzed. See Table 4 for a complete list of categories and frequencies. Of all participants, 408 provided a reason for their verdict decision. The largest portion of participants (31.90%) described the amount of evidence provided as a reason for their verdict decision. Participants also cited the consistency of the witness (19.90%), the witness' demeanour during the interview (14.50%), and the overall credibility of the witness (10.30%).

Sentencing

Sentencing recommendation

Participants were asked if they would like to make a recommendation for a length of sentence beyond the legal minimum of five years. Participants primarily found five years to be a reasonable sentence (82.60%). Of the participants who chose to make a more severe recommendation (17.40%), the average recommendation was 8.81 years ($SD = 2.22$; range 6-15 years). There was no impact of consistency on the amount of time participants recommended, $F(3, 42) = 0.42, p = .738, \eta_p^2 = .03$. Similarly there was no impact of delay on what sentence length participants recommended, $F(2, 42) = 0.46, p = .738, \eta_p^2 = .03$. Additionally, there was no significant interaction of delay and consistency on recommended sentence duration, $F(2, 81) = 3.14, p = .208, \eta_p^2 = .20$.

Sentencing Reason

Participants were asked to provide a reason for their sentencing recommendation. See Table 5 for all categories and frequencies. A total of 401

participants provided a reason for their decision. Of participants' first reasons given, 34.90% of participants stated that they believed 5 years was an appropriate sentence. Participants also discussed that they believed the crime was not severe enough to warrant a longer sentence (20.90%) or that a serious crime occurred, therefore meriting the sentence they chose (17.50%).

Witness testimony in sentencing reason

Participants were then asked what role the witness' testimony had in their sentencing recommendation. Of all participants, 386 provided a response. Of participants' first reason provided in their response, 23.80% said they relied on the witness' testimony in making their sentencing decision while 16.30% said they did not use the testimony in making their recommendation. See Table 6 for all categories and frequencies.

Sentence and durations

Participants were also given the chance to ignore the mandatory minimum sentence given by the criminal code and suggest a different sentence, duration, and fine should they choose. If multiple responses were given, the first choice was used for analysis. Four hundred and four participants provided a sentence. Primarily, participants believed imprisonment to be an appropriate sentence (38.90%), followed by probation, (25.70%), a conditional sentence of imprisonment (21.50%), a fine (5.20%), conditional discharge (6.40%), and absolute discharge (1.70%). For participants who recommended imprisonment, the average duration was 4.88 years ($SD = 2.94$; range 0 to 20). Participants who chose a sentence of probation suggested an average duration of 3.60 years ($SD = 2.69$; range 0 to 20). For those who selected a conditional sentence of imprisonment, the mean duration was 4.01 years ($SD = 2.42$; range 1 to 10). For participants who only recommended a fine, the average amount was \$57,157.14 ($SD = 18,5217.73$; range \$200 to 70,000). For those who recommended a fine in addition to a sentence (17.33%), the average amount was \$17,484.12 ($SD = 77067.93$, range 100 to 100,000).

Discussion

The present study aimed to examine potential triers of facts' perceptions of inconsistencies and delays in a witness' retelling of a crime. Participants' ratings of perceived credibility (i.e., cognitive competence, honesty, and suggestibility) were affected by inconsistencies across interviews but not delay, whereas ratings of the guilt of the accused were impacted by delay but not inconsistencies across interviews.

A witness who showed any type of inconsistency (i.e., contradiction, omission, reminiscence) was seen as less cognitively competent and less honest than a consistent witness, and the type of inconsistency did not matter. Only a witness who had an omission in his second interview was seen as more suggestible than a consistent witness. Interestingly, there was no difference in perceptions of suggestibility when the witness reported contradictions or reminiscences across interviews when compared to the consistent condition.

The delay between the initial and second witness had a limited impact on dichotomous verdict decisions. When a witness described the crime after 15 years, there were fewer guilty verdicts than if the witness described the crime after a 1-day delay, but only in the contradictory condition. Delay also influenced participants' ratings of the likelihood of the suspect's guilt. Participants rated suspect guilt as more likely when the witness recalled the event after 1-day, when compared to after 15-years. Additionally, participants who viewed a witness telling their story after a 1-day delay were more confident in their verdict decision than those who saw a witness discussing the event after a 2-year, but not a 15-year delay. There was no impact of delay on sentencing recommendations.

Impact of Consistency

In the present study, potential triers of facts' perceptions of witness credibility were impacted by inconsistencies in the witness' story. For the most part, these results were expected, as previous research (e.g., Berman & Cutler, 1996) has revealed similar findings: any inconsistency lowered the credibility of a witness. This was true for perceived cognitive competence and honesty, however the present findings for perceived suggestibility differed from previous literature.

Participants only found a witness who left something out of the second interview to be more suggestible than the consistent witness. No other differences were found. There may be something unique about omissions that require further exploration in regards to their impact on perceived witness suggestibility. It may also be that the contradiction and reminiscence conditions had an impact on perceived suggestibility, but that this effect was too small to detect in the present study

This anomalous finding may be a result of not something unique about omissions, but rather something unique about perceived suggestibility. Perceived suggestibility may play a large role in assessing the credibility of a child witness, as is indicated by Andrews and colleagues (2018), but its impact may be different when evaluating an adult witness. Replication of the current findings is needed before exploring the cause behind the difference in the effect of inconsistencies on perceived suggestibility when compared to perceived cognitive competency and honesty.

Contrary to my hypothesis, there was no difference in the impact that different types of inconsistencies had on perceived cognitive competence and honesty. It was predicted that contradictions would be the most detrimental to perceived credibility, however this was not found in the present study. All inconsistencies had an equally negative impact on perceived cognitive competence and honesty, and omissions were actually the most detrimental to perceived suggestibility. As previous research has indicated contradictions may be the most harmful to perceived credibility (Berman & Cutler, 1996), this finding was unexpected. One possible explanation is that participants, while aware an inconsistency was present, did not recognize what *type* of inconsistency was present. To explore this possibility, analyses were rerun with only those participants who correctly identified the type of inconsistency. This did not alter the finding; contradictions did not have a more negative impact on perceived credibility than other types of inconsistencies. As such, it appears participants truly found no differences in the impact of types of inconsistencies on perceived cognitive competence and honesty in the present study. Further exploration into inconsistencies is necessary to examine why this finding differs from previous research.

Despite an impact of consistency on the perceived credibility of the witness, consistency did not influence participants' verdict, likelihood of guilt, or verdict confidence. While an inconsistent witness was enough to discredit their credibility, it was

not enough to impact further legal decisions. The null effect of consistency on verdict, likelihood of suspect guilt, or verdict confidence may be a result of the threshold at which participants decided guilt. The strength of a variable needed to affect dichotomous verdict decisions will vary as a function of how close to threshold to convict participants are. While inconsistencies produced lowered perceived credibility, participants may not have been close enough to threshold to alter their verdict decisions or likelihood of suspect guilt. This is promising in that an inconsistent witness may not always determine the outcome of a trial, however it is still important to understand the loss in perceived credibility as witnesses are often relied upon in the courtroom. If the facts of the case bring a trier of fact close to their guilt threshold, and there is no other evidence, a reported inconsistency could be a deciding factor in the case.

Impact of Delay

In the present study, delay did not have a main effect on dichotomous verdict decisions. This null effect cannot be attributed to participants' insensitivity to delay. Participants rated the likelihood of suspect guilt as lower after a delay. Additionally, participants were less confident in their verdict decision after a 2-year delay compared to a 1-day delay, but the same was not found for a 15-year delay. This finding suggests that participants were aware of and responded to delay, but it did not have a similar impact on their dichotomous verdict decisions. It may be that the effect of delay was not strong enough to alter participants' dichotomous verdict decisions, as they may have been well below the threshold to convict. A large effect of delay may have resulted in a change in verdict decisions. It is also possible that delay was not important to participants in the present study, and therefore would not have impacted verdict decisions, regardless of the strength of the effect. This is evidenced in the finding that only a small portion of participants (6.40%) discussed the delay as having any impact on their verdict decision, with even fewer participants discussing the delay having a negative impact (4.40%).

Contrary to what was hypothesized, potential triers of fact were not impacted by delay in their judgements of the witness. Previous research (e.g., Pozzulo et al., 2010) has demonstrated that potential triers of fact are sensitive to a delay, and this often negatively impacts credibility. However, previous research has focused on delayed disclosure. In the present study, participants were provided a reason for the delay that

was outside the witness' control (i.e., previously no suspect identified). The present research suggests that the effect of delay on perceived credibility is impacted by the reason for delay. A delay caused by the witness impacts their credibility whereas a delay that is outside the control of the witness has no effect on their perceived credibility. Participants judged the credibility of the witness based on the testimony itself, and the witness' memory for the event, rather than looking to the motive behind the delay.

As such, participants' responses regarding perceived credibility may not be surprising after all; previous surveys (e.g., Simons & Chabris, 2011) have demonstrated individuals' lack of understanding of the way in which memory works. Many believe that memory can be played back like a video recording, and that memory will not change after initial encoding (Simons & Chabris, 2011). If participants held these beliefs, they may have believed that no amount of time could diminish the initial memory the witness held for the event, and therefore the witness's level of perceived credibility (i.e., cognitive competence, honesty, and suggestibility) would not be impacted by the delay. Other decisions in the case, unrelated to perceived credibility (e.g., verdict confidence), may still be impacted by delay.

It was anticipated that participants would be more tolerant of inconsistencies in a delayed report than an immediate one. This would have been revealed in an interaction between delay and consistency but only one interaction was observed. It is known that memory after a delay will be less complete than an immediate memory (Murre & Dros, 2015; Rubin & Wenzel, 1996; Wixted & Ebbesen, 1991), and as such, inconsistencies may be present. However, it appears participants generally did not view inconsistencies after a delay more leniently when assessing the credibility of a witness. Instead, a memory presented after a 2-year or 15-year delay was rated similarly as a memory presented after only 1-day.

There was one exception to the lack of interactions present. Participants made fewer guilty verdict decisions when a contradictory witness was telling their story after a delay of 15 years compared to a delay of 1 day. This finding is consistent with previous research that has suggested contradictions may be the most detrimental to perceived credibility (e.g., Berman & Cutler, 1996), and suggests that participants were in fact harsher on contradictions after a long delay (i.e., more convictions), rather than more lenient as might be expected by the knowledge that memory decays with time. This

result may again be due to participants' possible lack of understanding of what memory after a delay may look like. However, because only one interaction was found to support this inference, additional exploration is first needed before firm conclusions can be drawn.

There was no impact of either consistency or delay on sentencing recommendations. This is not necessarily surprising. Consistency and delay speak to the guilt of a defendant; once guilt has been decided, these variables should not impact sentence. Rather, it is the severity and nature of the crime that should impact a participant's sentencing recommendations.

Overall, potential triers of fact were influenced by the presence of inconsistencies when it came to the perceived credibility (i.e., honesty, cognitive competence, suggestibility) of the witness, but not when making guilt decisions (i.e., dichotomous verdict, likelihood of suspect guilt, verdict confidence). The opposite was true for delay. Participants were not influenced by delay when assessing the perceived credibility of the witness, but delay did have an impact on guilt decisions.

Limitations and Future Directions

The present study utilized undergraduate students as potential triers of fact. While all participants were of jury eligible age, this sample may not be representative of those who would act as triers of fact in a real criminal case. In addition, this sample is limited to laypersons. In the justice system, a witness will be evaluated by many individuals, both those without expertise, as demonstrated here, and those with expertise (e.g., lawyers, police officers, judges). Further research is needed with other individuals in the justice system to investigate if the effects found here are present in those with experience with witnesses.

The present research also relied upon individual decisions; no jury deliberation was present. In the justice system, jurors would have time to deliberate together before deciding a case. This hinders the external validity of the present research, however it also offers the opportunity to examine individual's initial perceptions of a witness. This method allowed for a basic understanding of how a delayed report with inconsistencies may be seen by potential triers of fact, outside of external influence. Further exploration

into how a group deliberative process may impact these findings is a necessary step to understanding how a jury may decide such cases.

In the present study, there was no effect of delay on the perceived cognitive competence, honesty, or suggestibility of a witness. While the present study was adequately powered to find a medium effect ($f = .25$, $\alpha = .05$, power = .8, $N = 279$), the effect of delay on perceived credibility may be small ($\beta < .21$), and therefore a larger sample may be required to detect such an effect. Direct replication and then further research is needed to explore and explain the null effect of delay on witness credibility. A first step is to investigate the impact of reason behind a delay in a witness' testimony (i.e., delay in disclosure or delay in investigation). This may help explain why the present research found no impact of delay while others found the opposite (e.g., Pozzulo et al., 2010). Additionally, exploring interactions of delay with other variables, such as witness age, number of times the crime was committed, and type of crime is important to understanding this area.

As unexpected results were found regarding the impact of inconsistencies on the perceived suggestibility of the witness, further exploration of this variable is also needed. It has been theorized that perceived cognitive competency, honesty, and suggestibility each contribute to overall beliefs about witness credibility (Andrews et al., 2018), thus, understanding how each of these factors is impacted by inconsistencies may help explain lowered perceived credibility of a witness found in prior research (e.g., Berman & Cutler, 1996). Additionally, the present study utilized an inconsistent detail that was central to the crime (i.e., the weapon used). Patterns of results may differ if the inconsistent detail was a peripheral detail, although previous research suggests this may not matter (e.g., Berman, Narby, & Cutler, 1995), a different type of central detail (e.g., witness description), or if multiple inconsistent details are reported.


Further, no impact of consistency was found on verdict decisions. It is possible that, because participants were not provided with a witness in a courtroom setting in the present study, simply a pre-trial interview, they may have not found the situation realistic enough to apply the witness' testimony into a courtroom setting where legal decisions such as verdict are made. A follow up study in which similar manipulations are presented in a trial setting, may be useful in understanding if the setting impacted verdict decision making in the present research. Participants in the present study were also presented

with only a snapshot of an interview; limited information was provided. Participants expressed the need for further information on the case when explaining their verdict decisions (10.90%). Replication of the current study, with more information provided to participants, may be helpful to explore how additional information could impact verdict decisions.

Conclusion

This study provides the beginning of an understanding on how witnesses testifying after a long delay are perceived by potential triers of fact. Results suggest that the presence of a delay that is outside of a witness' control does not diminish the perceived credibility of a witness, but may influence other decisions in the case (e.g., likelihood of suspect guilt, confidence in verdict). Inconsistencies across interviews impact perceived witness credibility, but may not influence other legal decisions (e.g., verdict). Importantly, potential triers of fact may be no more lenient on inconsistencies after a delay than after no delay. As delays between the occurrence of a crime and a witness' report and testimony are prevalent in the justice system, and inconsistencies can be present in repeated interviews, becoming better informed on how these reports are seen by triers of fact can be important to improving the justice system.

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Appendix A.

Interview script

Lawyer: Hello Mr. Perry, nice to officially meet you. I'm Ms. Mitchells. We spoke on the phone?

Witness: Yes, hello. Nice to meet you.

W: Mr. Perry, do you know why I asked to speak with you today?

W: Yes, it's about the crime I witnessed.

L: Yes, that's correct. A suspect has been identified and charged, so we would like to get some more information from you before the trial. Is it okay if I ask you some questions about what happened?

W: Yes, of course.

L: Excellent, thank you. I have here a statement you gave to the police regarding the incident. When did you make this statement?

W: Immediately after the crime took place. ***About 15 years ago/2 years ago/yesterday***

L: Okay thank you. Let's get started. You were there on the evening of August 5th when Mr. Robinson was attacked and his wallet was stolen, correct?

W: Yes.

L: What were you doing on that evening, August 5th?

W: I was walking home from a friend's house.

L: And what time was this?

W: Around 10:30 at night.

L: Were you drinking that night?

W: No. We had just hung out and watched a movie.

L: Alright, and on your way home you saw Mr. Robinson?

W: Yes. I saw him walking as well. He was walking ahead of me on the sidewalk.

L: What happened next?

W: A man came up to him and said something to him. ***The man had a gun/the man had a knife/the man was wearing a black sweatshirt.*** They got into a fight and the other man punched Mr. Robinson. Mr. Robinson fell to the ground, and hit his head, smacking it into the cement sidewalk. I guess that's when he passed out. The other man grabbed his wallet and ran off.

L: Did the man who attacked Mr. Robinson say anything to you?

W: Yes. He saw me after Mr. Robinson fell to the ground, and told me not to tell anyone or he would find me.

L: Can you remember anything else?

W: I think that's it.

L: In your earlier statement ***you said the man had a gun/you didn't say anything about a gun. Now you maintain the man had a gun/said the man had a gun/said the man had a knife/you didn't say anything about a weapon?***

W: Yes that's true/Oh, um, well... I just remembered/Oh well I must have forgotten.

L: Did you recognize the man who attacked Mr. Robinson?

W: No, I didn't.

L: Can you describe him?

W: He was about 5'8 to 6". Short brown hair. Caucasian.

L: Is there anything else you can tell me?

W: No, I think that's it.

L: Okay thank you Mr. Perry. I will be in touch if I have any further questions.

Consistent Condition

W: A man came up to him and said something to him. *The man had a gun.*

L: In your earlier statement *you said the man had a gun. Now you maintain the man had a gun?*

W: *Yes that's true.*

Contradictory Condition

W: A man came up to him and said something to him. *The man had a knife.*

L: In your earlier statement *you said the man had a gun. Now you say the man had a knife?*

W: *Yes that's true.*

Omission Condition

W: A man came up to him and said something to him. *The man was wearing a black sweatshirt.*

L: In your earlier statement *you said the man had a gun. Now you didn't say anything about a weapon?*

W: *Oh well I must have forgotten.*

Reminiscent Condition

W: A man came up to him and said something to him. *The man had a gun.*

L: In your earlier statement *you didn't say anything about a gun. Now you say the man had a gun?*

W: *Oh, um, well... I just remembered.*

Appendix B.

Questionnaire

Please answer the following questions in regards to the video you just watched:

How long ago did the crime occur?

- Yesterday
- 2 years ago
- 15 years ago

Was the witness consistent in their story across both interviews?

- Yes, they were consistent
- No, they reported two contradictory details
- No, they left something out of their second interview
- No, they reported something new in their second interview

Credibility Assessment Scale

We would like to understand more about people's perceptions of individuals when reporting past events. For each of the items below, you will be rating the witness from the scenario you just watched.

How would you rate the witnesses':

1) Ability as a witness

() 1 Low () 2 () 3 () 4 () 5 () 6 () 7 High

2) Ability to remember and answer questions

() 1 Low () 2 () 3 () 4 () 5 () 6 () 7 High

3) Accuracy in describing/reporting events

() 1 Low () 2 () 3 () 4 () 5 () 6 () 7 High

4) Adequacy in recounting events

() 1 Low () 2 () 3 () 4 () 5 () 6 () 7 High

5) Communication skills

1 Low 2 3 4 5 6 7 High

6) Likelihood that accuracy is affected by stress

1 Low 2 3 4 5 6 7 High

7) Honesty

1 Low 2 3 4 5 6 7 High

8) Likelihood of reporting things that did not really happen

1 Low 2 3 4 5 6 7 High

9) Likelihood of being influenced by questions

1 Low 2 3 4 5 6 7 High

10) Likelihood of forgetting to report things that really happened

1 Low 2 3 4 5 6 7 High

11) Likelihood of lying

1 Low 2 3 4 5 6 7 High

12) Likelihood of making up the event

1 Low 2 3 4 5 6 7 High

13) Likelihood of being misled by the individual asking questions

1 Low 2 3 4 5 6 7 High

14) Ability to recall events

1 Low 2 3 4 5 6 7 High

15) Reliability of memory

1 Low 2 3 4 5 6 7 High

Verdict

1. Imagine the crime discussed went forward to a trial and you are a juror deciding the case. Based on the information provided, how would you find the accused with respect to the crime of assault and theft?

Please check **one** of the following boxes below:

Not Guilty

Guilty

2. Based on the information provided in the transcript, how likely is it that the accused is guilty of assault and theft? Please indicate a number between 1 and 100, with 1 being "Not at all likely that he is guilty" and 100 being "Extremely likely to be guilty."

Verdict Number: _____

3. How confident are you in the verdict decision you just made (circle **one number**)?

1.....10.....20.....30.....40.....50.....60.....70.....80.....90.....100

Not Confident

Moderately Confident

Absolutely Confident

4. Please describe in the space below how you made your final verdict decision (i.e., what factors did you consider in reaching your verdict of not guilty or guilty?).

Sentence Recommendation

Assume the accused was convicted and you are asked to help decide an appropriate sentence. Please answer the following questions.

Subject to section 256, and section 322(1), where a jury finds an accused guilty of assault and theft, the judge presiding at the trial shall, before discharging the jury, put to them the following question:

Judge Instruction: You have found the accused guilty of assault and theft, and the law requires that I now pronounce a sentence of a minimum of 5 years against the accused. Do you wish to make any recommendation with respect to the number of years that the accused must serve before the accused is eligible for release on parole? You are not required to make any recommendation but if you do, your recommendation will be considered by me when I am determining whether I should substitute for the 5 year period, which the law would otherwise require the accused to serve before the accused is eligible to be considered for release on parole, a number of years that is more than 5 years but not more than 25 years.

1. Please indicate, by circling "yes", if you think the 5 year period is a suitable sentence for the accused. If you think a more serious sentence is appropriate, please circle "no" and state the length of sentence that would be appropriate in the next part of this question.

Yes

No

If **NO**, Please indicate, in your opinion, the appropriate time length, in years, before the accused should be considered before parole.

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2. Please describe why you chose this length of time before the accused should be considered for parole.

3. Describe what role, if any, the witness' testimony had in your decision for sentence length?

4. If you could ignore the Criminal Code, what do you think would be the appropriate sentence and duration of time, if any, for the defendant? (*You may refer to the list of sentences available in Canada below to assist you in your answer*).

Sentence: _____

Duration: _____

Amount (if imposing a fine): _____

Absolute Discharge: A sentence that releases him or her into the community with no conditions, and no criminal record.

Conditional Discharge: A sentence that releases him or her into the community with a set of conditions, and no criminal record.

Conditional Sentence of Imprisonment: A prison sentence served in the community, under the watch of a supervisor. Conditions can be punitive, and usually involve house arrest.

Probation: Offender is released on conditions prescribed in a probation order. Conditions are rehabilitative, not punitive, and directly relate to the offenders needs. Can be combined with imprisonment.

Fine: A fee made payable to Her Majesty, the province in which the crime is committed. Can be combined with imprisonment.

Imprisonment: A sentence served in an institution. Two years less a day is served in a provincial jail, two years or more is served in a federal penitentiary.

Demographic Information

Please answer the following questions in the spaces provided.

1. Gender: _____
2. What is your age? _____
3. What is your primary language? _____
4. What is your nationality? (please check one)

Canadian citizen _____
Landed Immigrant _____
Student Visa _____
Other (please specify) _____
5. What is your primary occupation? _____
6. **Ethnicity (optional):** Please indicate which ethnic group you would consider yourself to belong to:

 White (e.g., European)
 Aboriginal (e.g., First Nations, Métis, Inuit)
 Black (e.g. African, African American, African Canadian, Caribbean)
 East Asian (e.g. Chinese, Japanese, Korean, Polynesian)
 South Asian (e.g. Indian, Pakistani, Sri Lankan, Bangladeshi)
 Southeast Asian (e.g. Burmese, Cambodian, Filipino, Laotian, Malaysian, Thai, Vietnamese)
 West Asian (e.g. Arabian, Armenian, Iranian, Israeli, Lebanese, Palestinian, Syrian, Turkish)
 Latin American (e.g. Mexican, Indigenous Central and South American)
 Other, please specify: _____

Appendix C.

Examples of Open-Ended Responses

Examples of Reasons for Verdict Decisions

Inconsistency of the Witness had a Negative Impact

The witness seemed to forget details about the crime.

The witness' story included a knife whereas the previous interview he didn't mention it.

I am not 100% sure the accused is guilty because the witness forgot a detail that the accused was holding a knife.

Inconsistency of the Witness was Allowable

Although the witness was not 100% accurate in recalling the event, there is still some truth to it.

Both accounts matched up perfectly, aside from the weapon used.

I believe the accused is guilty because other than one details, the witness reported the same story as he did right after witnessing the crime.

Witness was Consistent

The verdict is guilty because the witness stated consistent facts.

The witness was consistent and confident.

The witness's second testimony was consistent with the first.

Time Delay had a Negative Impact

The crime took place a long time ago, and the witnesses ability to recall the identity of the person committing the crime may be inaccurate.

Since the crime happened 15 years ago, memories can be altered.

The crime happened a long time ago so the witness may have forgotten many things.

Time Delay was Allowable

Accused was remembered, even after 15 years.

Ability of a witness to recall information of a crime that took place 2 years ago.

The recent nature of the event.

More Evidence was Needed

The witness did not reveal too much information about the assault.

Can't be proven guilty until more information is given.

We cannot make this decision based off of one interview.

Enough Evidence was Present/Witness' Statement Provided Information

I made my final verdict after hearing the witness give his statement.

The witness described the man and the event clearly.

Witness saw accused harm the victim, knocking him down.

Witness Demeanour at the Time of Interview had Negative Impact

He was blinking very frequently, and I think he was either very scared after the crime or very nervous of lying.

It is worth noting that the witness was extremely nervous and constantly looked around / avoided eye contact.

I chose my final verdict decision as not guilty because the witness had stuttered a few times when he was asked questions.

Witness Demeanour at the Time of Interview had Positive Impact

He did not seem restless, answered all the questions and made sufficient eye contact.

Sounded confident when speaking.

The witness looked calm and spoke calmly.

Witness Behaviour at Time of Crime had Negative Impact

The witness saw the crime late at night. It may have been too dark to see how the offender looked like or what exactly happened.

The witness may have been flustered by the threat made by the person to remember exactly what he looked like.

It was late at night and so the witness could have impaired recall of the witness's features.

Witness Behaviour at Time of Crime had Positive Impact

The witness did not run away from the scene.

The witness had reported to the police right after the incident.

The witness was not impaired at the time of the crime.

Negative Witness Credibility/Honesty

One major factor is I believe the witness could be lying about particular events.

The witness didn't seem reliable at all.

The witness testimony is somewhat fake in my opinion.

Positive Witness Credibility/Honesty

Man didn't appear to have a reason to lie.

The witness seemed to be telling the truth.

The man had little to no reason to lie about what he saw, anything he said would be weighed against the words of the man who was robbed.

Crime Occurred/Defendant Guilty

He did commit crime so he deserved it.

He did steal the man's wallet by using excessive amount of force (knocking the man out), as well as threatening the witness's life if he spoke the authority about the situation.

The accused did harm the victim and caused a serious injury.

Other

The emotion of the crime.

The events are related to each other.

The witness was being misled a little bit by the woman asking questions.

Examples of Sentencing Recommendation Reasons

Crime was Not Severe Enough

It could have been a worse crime.

The accused didn't actually kill the man, just attacked and stole his wallet.

I felt like this crime is not as serious as other violent crimes.

Crime was Severe/Committed

Theft is a serious offense.

The accused's actions were severe and harmful to society as he didn't hesitate to hurt another individual and he threatened another person's life.

The assault resulted in physical damage and property damage to the victim, psychological trauma could be produced as well.

More Information Needed

The history of the accused is unknown with the information given.

I don't have enough information on the case to make a judgement on time before parole.

I still don't feel like I know enough about the instance to suggest an alternative sentence.

Recommended Time of Five Years is Appropriate

5 years is reasonable for such a crime.

I think 5 year period is an enough time for a person to make some changes in his behaviour and get some life lessons.

Required by law: what law states is appropriate for assault and theft

Sentence Should be Longer than Five Years

Because I think 5 years is too short to warn people don't do this anymore.

5 years seems too easy and will not prevent the crime from happening again.

I think 10 years is enough.

Other

Because he should be given a second chance.

Because putting people in jail doesn't actually decrease their likelihood to re-offend.

I believe that the prison system should work to heal and reform people.

Examples of Role of Witness Testimony in Sentencing

Witness Credible

The witness seems to be telling the truth.

The witness was very clear with their testimony.

The witness was credible in most cases and I believe that they told the truth.

Witness Not Credible

The witness does not seem reliable.

The witness testimony felt ill-prepared and hard to verify for truth.

The witness did not seem 100% sure about what he saw.

Witness Consistent/Accurate

The fact that the witness stayed true to his answers.

It was accurate.

The witness testimony appeared to be consistent.

Witness Not Consistent/Inaccurate

The witness' change of mind for the weapon the accused apparently had.

Witness gave 2 different statements.

Because the witness testimony was not consistent and a major detail was left out, I believe it would be unfair to base the sentencing solely on that.

Discussion of Facts of Crime Led to More Severe Sentence

He brought up a weapon and injury to the victim.

The accused was threatening the witness.

How violent the assault was.

Discussion of Facts of Crime Led to Less Severe Sentence

The witness was told that tell nobody of the crime and was safe to go and was not being hurt at all.

The assaulter could have used the knife, or assaulted the witness, but he only uttered a threat not to tell before he ran away.

His recount of the event did not seem too serious.

Witness Testimony Relied On

The witness played a big role in my decision.

The witness testimony had great influence.

My decision is solely based on the witness' testimony.

Witness Testimony Not Relied On

I do not believe the witness' testimony influenced my sentence length.

No role since I came to the conclusion all because of the actual circumstance.

The witness didn't affect my decision about length of time.

Need More Information/Witness was Only Information

The witness testimony was the only point of view I was presented.

The words exchanged between the assaulter and Mr. Robinson were not shown.

The only help the witness had to offer is painting an almost obscure picture of the events, barely proving enough information for me to make a decision.

Other

2 years of sentence length.

I have no idea about any role.

See the whole things.

Appendix D.

Tables

Table 1. Means, standard deviations, and confidence intervals of credibility ratings

		1 Day Delay		2 Year Delay		15 Year Delay		Total	
		M (SD)	95% CI	M(SD)	95% CI	M(SD)	95% CI	M(SD)	95% CI
Consistent	Cognitive Competence	5.11 (0.96)	[4.79, 5.44]	4.93 (1.06)	[4.60, 5.25]	5.18 (1.12)	[4.81, 5.55]	5.07 (1.04)	[4.88, 5.27]
	Honesty	5.48 (1.07)	[5.10, 5.85]	4.90 (1.21)	[4.52, 5.29]	4.34 (1.24)	[4.91, 5.78]	5.23 (1.19)	[5.01, 5.47]
	Suggestibility	4.19 (1.29)	[3.85, 4.53]	4.34 (1.14)	[4.00, 4.68]	4.08 (1.35)	[3.70,4.72]	4.21 (1.25)	[4.00, 4.41]
Contradictory	Cognitive Competence	4.28 (0.95)	[3.91, 4.65]	4.31 (1.11)	[3.98, 4.61]	4.06 (1.12)	[3.73, 4.39]	4.21 (1.07)	[4.02, 4.42]
	Honesty	4.81 (1.20)	[4.38, 5.23]	4.67 (1.25)	[2.23, 5.06]	4.70 (1.31)	[4.31, 5.08]	4.71 (1.25)	[4.49, 5.96]
	Suggestibility	4.18 (0.93)	[3.79 4.56]	4.31 (0.98)	[3.97, 4.66]	4.53 (1.11)	[4.18, 4.88]	4.35 (1.02)	[4.13, 4.55]
Omission	Cognitive Competence	4.29 (1.00)	[3.96, 4.61]	4.36 (1.14)	[3.98, 4.74]	4.10 (0.86)	[3.73, 4.47]	4.25 (1.00)	[4.04, 4.46]
	Honesty	4.56 (1.18)	[4.18, 4.93]	4.68 (1.23)	[4.25, 5.12]	4.71 (1.12)	[4.27, 5.14]	4.64 (1.17)	[4.41, 4.89]
	Suggestibility	4.99 (0.94)	[4.65, 5.33]	4.40 (0.89)	[4.01, 4.79]	4.71 (1.01)	[4.31, 5.12]	4.73 (0.97)	[4.48, 4.92]

		1 Day Delay		2 Year Delay		15 Year Delay		Total	
		M (SD)	95% CI	M(SD)	95% CI	M(SD)	95% CI	M(SD)	95% CI
Reminiscence	Cognitive Competence	4.46 (0.91)	[4.11, 4.81]	4.36 (1.08)	[4.00, 4.72]	4.20 (1.11)	[3.81, 4.59]	4.35 (1.03)	[4.13, 4.55]
	Honesty	4.67 (1.18)	[4.26, 5.08]	4.57 (1.28)	[4.15, 4.99]	4.31 (1.24)	[3.87, 4.75]	4.53 (1.23)	[4.27, 4.76]
	Suggestibility	4.68 (1.13)	[4.31, 5.05]	4.34 (1.16)	[3.96, 4.73]	4.70 (1.03)	[4.29, 5.10]	4.60 (1.11)	[4.35, 4.80]
Total	Cognitive Competence	4.55 (1.01)	[4.36, 4.71]	4.51 (1.11)	[4.32, 4.67]	4.37 (1.15)	[4.20, 4.57]	4.48 (1.09)	[4.37, 4.57]
	Honesty	4.89 (1.20)	[4.68, 5.08]	4.72 (1.23)	[5.04, 4.91]	4.76 (1.27)	[4.55, 4.98]	4.79 (1.23)	[4.67, 4.90]
	Suggestibility	4.68 (1.13)	[4.33, 4.69]	4.35 (1.04)	[4.17, 4.53]	4.50 (1.15)	[4.31, 4.70]	4.46 (1.12)	[4.35, 4.56]

Note: Participants rated cognitive competence, honesty, and suggestibility on a scale from 1 to 7.

Table 2. Frequencies (percentage of total decision in condition) of guilty verdicts

	1 Day Delay	2 Year Delay	15 Year Delay	Total
Consistent	27 (69.23%)	26 (66.67%)	19 (61.30%)	72 (66.06%)
Contradictory	27 (87.10%)	26 (68.42%)	21 (55.26%)	74 (69.16%)
Omission	27 (67.50%)	21 (70.00%)	21 (70.00%)	69 (69.00%)
Reminiscence	27 (79.41%)	19 (59.38%)	20 (68.97%)	66 (69.47%)
Total	108 (75.00%)	92 (66.19%)	81 (63.28%)	281 (68.36%)

Table 3. Means, standard deviations, and confidence intervals of likelihood of suspect guilt, verdict confidence, and sentence duration.

		1 Day Delay		2 Year Delay		15 Year Delay		Total	
		M (SD)	95% CI	M(SD)	95% CI	M(SD)	95% CI	M(SD)	95% CI
Consistent	Likelihood of Suspect Guilt	71.35 (20.42)	[63.09, 79.60]	69.12 (21.09)	[60.86, 77.37]	62.20 (21.95)	[53.78, 70.62]	67.62 (21.23)	[62.75, 72.35]
	Verdict Confidence	72.69 (16.14)	[65.05,80.33]	64.23 (23.69)	[56.59, 71.87]	66.80 (17.49)	[59.01,74.59]	67.92 (19.49)	[63.47, 72.35]
	Sentence Duration in Years	8.75 (1.50)	[6.37, 11.14]	10.00 (4.36)	[7.25, 12.75]	9.57 (3.74)	[7.77, 11.37]	9.43 (3.18)	[8.09, 10.80]
Contradictory	Likelihood of Suspect Guilt	73.92 (18.80)	[65.50, 82.34]	65.13 (29.03)	[56.54, 73.72]	62.80 (20.87)	[54.38, 71.22]	67.31 (23.42)	[62.39, 72.18]
	Verdict Confidence	72.80 (16.46)	[65.01, 80.59]	67.60 (19.21)	[59.81, 75.39]	67.60 (18.77)	[59.81, 75.39]	69.33 (18.11)	[64.84, 73.83]
	Sentence Duration in Years	8.67 (1.51)	[6.72, 10.61]	8.25 (2.06)	[5.87, 10.64]	9.00 (1.12)	[6.62, 11.39]	8.64 (1.50)	[7.34, 9.94]

		1 Day Delay		2 Year Delay		15 Year Delay		Total	
		M (SD)	95% CI	M(SD)	95% CI	M(SD)	95% CI	M(SD)	95% CI
Omission	Likelihood of Suspect Guilt	66.73 (18.20)	[58.48, 74.98]	66.46 (20.69)	[57.87, 75.05]	66.68 (17.74)	[58.26, 75.10]	66.63 (20.63)	[61.76, 71.49]
	Confidence	71.54 (19.53)	[63.90, 79.18]	66.04 (27.27)	[58.09, 73.99]	61.20 (18.78)	[53.41, 68.99]	66.33 (21.09)	[61.76, 70.76]
	Sentence Duration in Years	9.40 (3.36)	[7.27, 11.53]	7.50 (0.71)	[4.13, 10.87]	9.00 (1.41)	[6.87, 11.13]	8.92 (2.31)	[7.13, 10.14]
Reminiscence	Likelihood of Suspect Guilt	73.50 (18.20)	[65.55, 81.45]	61.88 (20.01)	[53.46, 70.30]	63.82 (22.27)	[55.87, 71.77]	66.57 (20.63)	[61.72, 71.08]
	Confidence	69.82 (18.58)	[62.46, 77.18]	60.00 (21.26)	[52.05, 67.95]	62.86 (21.58)	[55.50, 70.22]	64.44 (10.64)	[59.86, 68.59]
	Sentence Duration in Years	9.00 (1.41)	[5.63, 12.37]	7.50 (1.05)	[5.55, 9.45]	8.83 (1.84)	[6.89, 10.78]	8.29 (1.54)	[6.99, 9.90]
Total	Likelihood of Suspect Guilt	71.39 (20.29)	[67.26, 75.48]	65.68 (22.73)	[61.41, 69.88]	63.87 (20.59)	[59.72, 68.03]	67.03 (21.38)	[64.56, 69.37]
	Confidence	71.67 (17.55)	[67.61, 75.52]	64.49 (22.04)	[50.55, 68.39]	64.56 (19.19)	[60.77, 68.46]	66.97 (19.86)	[64.71, 69.16]
	Sentence Duration in Years	8.94 (2.05)	[7.69, 10.21]	8.20 (2.24)	[6.98, 9.64]	9.14 (2.34)	[8.06, 10.14]	8.81 (2.22)	[8.09, 9.49]

Note: Participants rated likelihood of suspect guilt and confidence out of 100.

Table 4. Frequencies and percentage of total comments for reasons for verdict.

Category	Frequency	% of All Comments
Amount of Evidence	130	31.90%
Require Additional Evidence	45	10.90%
Adequate Evidence Presented	85	20.60%
Consistency of Witness	81	19.90%
Witness Consistent	16	3.90%
Witness Inconsistent Allowable	28	6.80%
Witness Inconsistent Negative Impact	37	9.10%
Witness Demeanour at Time of Interview	59	14.50%
Witness Demeanour Positive Impact	25	6.10%
Witness Demeanour Negative Impact	34	8.30%
Witness Credibility/Honesty	42	10.30%
Witness Credible/Honest	31	7.50%
Witness Not Credible/Dishonest	11	2.70%
Delay	26	6.40%
Delay Allowable	8	1.90%
Delay Negative Impact	18	4.40%
Defendant Guilty	27	6.60%
Witness Behaviour at Time of Crime	17	4.20%
Witness Behaviour Positive Impact	12	2.90%
Witness Behaviour Negative Impact	5	1.20%
Other	26	6.40%
Total	408	

Table 5. Frequencies and percentage of total comments for reasons for sentencing.

Category	Frequency	% of all comments
5 Years is Appropriate	140	34.90%
Crime Not Severe Enough	84	20.90%
Serious Crime Committed	70	17.50%
Require More Information	31	15.20%
Sentence Should be Longer than 5 Years	15	7.70%
Other	61	3.70%
Total	401	

Table 6. Frequencies and percentage of total comments for role witness played in sentencing decision.

Category	Frequency	% of all comments
Relied on Witness Testimony	92	23.80%
Did not Rely on Witness Testimony	63	16.30%
Details of Crime led to More Severe Sentence	65	16.80%
Details of Crime led to Less Severe Sentence	41	10.60%
Credible Witness	22	5.70%
Not Credible Witness	28	7.30%
Witness Inconsistent	28	7.30%
Witness Consistent	4	1.00%
Require More Information	16	4.10%
Other	27	7.00%
Total	386	