ABSTRACT

Knowledge Updating in Jurors: Cognitive Load Affects Juror Decision Making

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Mock jurors read a trial summary describing the armed robbery of a convenience store and rendered a verdict. Then, half of the jurors viewed an exculpatory videotape of the robbery; the remaining jurors completed an unrelated task. All jurors voted again. Those who watched the video were less likely to vote guilty at Time 2. In Experiment 2, we manipulated cognitive load by having the jurors memorize a series of numbers during summary reading and videotape viewing. Jurors in the cognitive load condition were less likely to vote guilty after reading the summary and were less likely to modify their verdict after viewing the exculpatory video. In Experiment 3, we manipulated cognitive load by adding extraneous details to the case summary and limiting the time available to read the summary. The results confirmed those of Experiment 2. These results are consistent with a resource-limited knowledge updating view of juror decision-making.

Knowledge Updating in Jurors: Cognitive Load Affects Juror Decision Making

by

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DEDICATION

To my family, who never stops believing in me

CHAPTER ONE

Introduction

The phrase "a jury of one's peers" is a part of the American lexicon, yet it appears nowhere in the Constitution. Nonetheless, we insist criminal trials be decided upon by a jury. Juries are one of the few social environments in which members of different socio-economic and ethnic groups work together to collaborate on a complex intellectual task, rendering the verdict. In theory, we rely on our court system because we believe collective decision-making will more likely produce a reliable evaluation of the evidence presented. Furthermore, we believe that a group consensus increases satisfaction on the part of the jurors and the likelihood that society‘s collective will is expressed. While memory, judgment, and decision-making are central to a juror‘s duties, jurors are not ―blank slates” (Devenport, Studebaker, & Penrod, 1999). Jurors come to trial with beliefs and knowledge that influences their decision-making both explicitly and implicitly. In addition, taxed cognitive resources can affect juror‘s decision-making process.

I investigated decision-making in mock jurors under differing cognitive loads. Jurors reviewed evidence in a trial, made initial determinants of guilt, reviewed additional evidence, and rendered a final verdict. Over a series of experiments, I varied demands placed on jurors, as well as when those demands were present either during initial evaluation of the evidence or during later re-evaluation of new evidence.

Memory Misconceptions

Memory is often compared to two common storage mechanisms: videotape recorders and computer hard drives. Both of these metaphors are fundamentally flawed because they represent memory as static and unchanging, and they imply what is stored in memory is always a faithful and durable representation of the actual event. But memory is not like a videotape or hard drive. In fact, the single most important principle underlying memory is this: memory is fallible. This is due to the dynamic, creative, and reconstructive nature of memory (Solso, 2002). Memory can be altered at the encoding, consolidation, or retrieval stages (Baddeley, Eysenck, & Anderson, 2009). Memory is particularly vulnerable to errors that intrude during encoding (Pollio & Foote, 1971). In fact, memory works by storing bits and pieces of the original events and later combining those fragments with other sources of information to reconstruct the original (Parra, Terrell, & Weaver, 2010). Bernstein and Loftus (2009, p. 373) described the reconstructive process of memory like this:

> In essence, all memory is false to some degree. Memory is inherently a reconstructive process, whereby we piece together the past to form a coherent narrative that becomes our autobiography. In the process of reconstructing the past, we color and shape our life‘s experiences based on what we know about the world.

The fallibility of memory is especially important to consider in a forensic setting. Eyewitness testimony often is used as evidence in a legal setting (Penrod & Cutler, 1995). However, eyewitness misidentification, that is, identification of an innocent person as the perpetrator of a crime, is the leading cause of wrongful convictions. The Innocence Project, in December, 2010, reports 75% of wrongful convictions are due to eyewitness misidentifications. Of these misidentifications, 25% had two eyewitnesses

identifying innocent individual as the perpetrator, while 13% had three or more eyewitnesses misidentifying the same innocent defendant (see Innocence Project, December, 2010).

Factors Contributing to Eyewitness Misidentifications

Many factors influence the accuracy of eyewitness memory. Researchers distinguish estimator and system variables (Wells, 1978). Estimator variables include those that cannot be controlled by the legal system, such as the contextual circumstances surrounding the crime. This includes presence of a weapon, whether the race of the perpetrator is different than the race of the eyewitness, the stress felt during the crime, and other factors such as distance from perpetrator, interaction with perpetrator, and the lighting where the crime occurred. System variables are those which can be controlled by the legal system. As such, most legal reforms target system variables. For example, investigators can control the instruction given to the witness before a line-up or photo-array identification, whether they use sequential or simultaneous line-ups, the selection of foils used during the line-up, and communication before or after an identification is made. Also, attorneys and judges can control what type of question is asked to the witness during a trial. For example, leading questions can distort a memory.

While witnesses may be asked about their memories for a number of different things, their ability to recognize faces is paramount. Recognition for faces is generally better than other types of images, particularly when faces are attended to at exposure (Hancock, Bruce, & Burton, 2000). Kellogg (1980) showed faces to participants and manipulated attention using multiplication as a distractor. Facial recognition was poor when faces were not fully attended to. However, Kellogg compared facial recognition

using either fully attended or fully unattended stimuli. A divided-attention manipulation may more closely resemble diverted attention in real life, such as that experienced by witnesses during a crime.

Reinitz, Morriseey, and Demb (1994) compared divided and full attention in face recognition. In Experiment 1, participants studied six faces constructed with a simple identification kit. Those in the divided-attention condition simultaneously completed a shadowing task that involved counting dots presented rapidly on the top of the face or on the bottom of the face. Participants indicated the location and number of dots presented in the longest single sequence (i.e., for each trial, participants were shown 45 shadowing stimuli). Those in the full-attention condition did not count the dots across the faces. Instead, participants attended to the faces, but kept their eyes on the dots. Next, participants completed a filler task (i.e., a vocabulary test), which lasted approximately 15 minutes. Finally, participants took a surprise recognition test, in which they responded by circling either ―old" or ―new" on a response sheet. Researchers presented participants with two old stimuli (i.e., faces already studied), two conjunction stimuli (i.e., new faces constructed by combining features of old stimuli), two featured stimuli (i.e., new faces containing half old and half new features), and two new faces (i.e., faces containing only features not presented previously). Participants in the full-attention condition responded to old faces more accurately than conjunction, feature, and new faces (all pair-wise comparisons were significant). Participants in the divided-attention condition responded to old faces more than feature and new faces, but not conjunction faces.

Experiment 2 used the same procedure as Experiment 1, except participants responded to options, ―remember", ―know", or ―new" to each face presented. Participants chose ―remember" responses (i.e., explicit recollection) when they had a specific recollection experience of the face, while participants chose ―know" responses (i.e., implicit recollection) when they could not explicitly recollect the experience. Divided attention reduced explicit recollection more frequently than full attention; that is, those in the divided attention recalled previously seen faces accurately but did not explicitly recall seeing the faces earlier. Importantly, a line-up situation demands explicit recognition. Facial encoding is attentionally-demanding. Thus, a witness's ability to remember the perpetrator's face is impaired if the witness did not or could not pay full attention to the face during the crime.

The presence of a weapon during the crime also impairs facial recognitions. Weapon focus occurs when a person who witnesses a weapon-present crime has a decreased ability to identify the perpetrator due to focused attention on the weapon. Victims of violent crimes provide less complete descriptions of the perpetrator and spend more time fixating on the weapon than on other stimuli (Loftus, Loftus, & Messo, 1987). Attention is tunneled to relevant features in a stressful situation while peripheral features are ignored (Easterbrook, 1959).

A crime is a novel and stressful situation for most eyewitnesses. The witness tends to focus on the features of the weapon, a salient stimulus, and not the features of the perpetrator, which may be thought of as peripheral. Kramer, et al. (1990) investigated this in a series of studies. In Experiment 1, Kramer, Buckhout, and Eugenio (1990) simulated a real-world demonstration of weapon focus (weapon high visibility, weapon

low visibility) and arousal using a slideshow of a staged assault. Sixty-four participants viewed 40 slides while listening to a soundtrack of the assault. The participants viewed the end of a card game in which the winner was accused of cheating. The players walked out of the room angrily while the winner stayed and counted his earnings. For the Weapon High Visibility (WHV) condition, a visibly angry man comes into the room, carrying an empty liquor bottle. He cursed the winner and smashed the bottle over the winner‘s head. The attacker took the money and exited while the victim screamed in pain. In the Weapon Low Visibility (WLV) condition, an angry man came into the room with the weapon hidden behind him. While it is obvious he was angry, participants cannot see the weapon or anticipate the attack. The remainder of the video was identical to the WHV condition. Participants answered a questionnaire about the attacker‘s features, the weapon‘s features, and their arousal during the attack. Participants were then asked to identify the attacker in a 6-picture photo spread, though the researchers warned that the attacker may or may not be in the photo spread. Those in the WLV condition had more accurate descriptions of the perpetrator. In fact, not a single person in the WHV condition correctly identified the perpetrator. All participants in WHV group correctly identified the weapon as a bottle while less than half of the WLV group identified the weapon, indicating the weapon focus effect occurred. Also, self-reported high arousal impaired facial recognition in both conditions, but especially in the WHV condition.

Facial encoding is also important to consider when the perpetrator is of a different race than the witness. The own-race bias is a robust phenomenon in which people more accurately identify features of people of their own race. In a review of own-race versus

other-race facial recognition literature, about 80% of participants exhibited the own-race bias (Bothwell, Bringham, & Malpass, 1989). Delay between initial facial view and subsequent recognition test decreases own-race identifications (Shepard, Gibling, & Ellis, 1991) and increases misidentifications (Barkowitz & Brigham, 1982). Varying levels of attention and arousal may impact recognition in own-race and other-race faces. These two factors are especially important in weapon focus (see Kramer, Buckhout & Eugenio, 1990). Attention and arousal differentially affect own-race facial recognition (Tooley, Brigham, Maass, & Brothwell, 1987). Simultaneous presentation of a face with another picture (i.e., competition for attention) may also affect facial recognition.

MacLin, MacLin, and Malpass (2001) studied own-race bias in a series of experiments. In Experiment 1, MacLin, MacLin, and Malpass (2001) examined the effects of four factors, arousal (high, low), delay (none, minutes), presentation (simultaneous, sequential) and race of face (Hispanic, Black), on subsequent facial recognition. International Affective Picture System (IAPS), developed by Lang (1988), was utilized to test arousal. The IAPS is a normative set of pictures used to target specific emotions and arousal. Hispanic participants viewed faces and would answer questions about these faces after all 60 faces were shown. Participants also rated their affect after each presentation. Facial images (30 Hispanic and 30 Black) were paired with a low or high arousal IAPS picture, presented in either a simultaneous or sequential fashion. Participants then identified previously seen (old) faces from a mixture of 30 old and 20 new faces. Researchers used *A*-prime to measure facial recognition. High *A*-prime scores (scores near 1) indicate superior performance; low *A*-prime scores (scores near 0.5) indicate near chance performance. Participants recognized own-race faces more

accurately, especially with sequential presentation. This confirms the own-race bias using a Hispanic population. Participants in the high-arousal condition had low *A*-prime scores for own-race and other-race conditions. With high arousal, simultaneous presentation negatively affected facial recognition for own-race faces. That is, own-race faces were more negatively affected by competition for attention during high arousal states. However, it is important to note these *A*-prime scores were higher (i.e., more accurate) than sequential and simultaneous presentation of other-race faces. Increased delay negatively affected facial recognition for participants in the high arousal and simultaneous conditions.

Diverted attention, cross-race bias, and weapon focus all impair the accuracy of eyewitness memory. In addition, confidence of the memory poorly reflects the accuracy of that memory (Krug & Weaver, 2005; Penrod & Cutler, 1995).

Juror Acceptance of Eyewitness Memory

Potential errors extend beyond eyewitness misidentification. An equally disturbing issue is the ease with which jurors accept the accuracy of the eyewitness's memory and the apparent weight attributed to eyewitness testimony. This is likely due to the lack of knowledge regarding eyewitness memory and specifically, memory in general. Jurors tend to believe eyewitnesses, and ignore such factors as weapon-focus, cross-race bias, stress effects, and confidence malleability, which may affect jurors' decisions (Benton, Ross, Bradshaw, Thomas, & Bradshaw, 2006; Kassin, Tubb, Hosch, & Memon, 2001; Schmechel, O'Toole, Easterly, & Loftus, 2006).

As a result of this basic misunderstanding, a number of false beliefs are commonly accepted by typical jurors. Simons and Chabris (2011) collected data from

1,838 members of the general population and weighted the responses to represent a 1,500 person, nationally-representative sample (Table 1).

Table 1. *Statements concerning the reliability of eyewitnesses, and percentage agreement with those statements among typical jurors, experts, and attorneys (based on *Simons & Chabris, 2011, and **Parra, Terrell, & Weaver, 2011, October).*

Statement	General Population*	Experts*	Attorneys**
Video memory: Human memory works like a video camera, accurately recording the events we see and hear so that we can review and inspect them later.	63% agreement	0% agreement	11% agreement
Permanent memory: Once you have experienced an event and formed a memory of it, that memory does not change.	55% agreement	0% agreement	14% agreement
Hypnosis: Hypnosis is useful in helping witnesses accurately recall details of crimes.	48% agreement	0% agreement	20% agreement
Confident testimony: In my opinion, the testimony of one confident eyewitness should be enough evidence to convict a defendant of a crime.	37% agreement	0% agreement	34% agreement
Amnesia: People suffering from amnesia typically cannot recall their own name or identity	83% agreement	0% agreement	26% agreement
Attention: People generally notice when something unexpected enters their field of view, even when they're paying attention to something else	78% agreement	19% agreement	39% agreement

Astonishingly, 63% of the sample agreed with the statement, ―Human memory works like a video camera, accurately recording the events we see and hear so that we can review and inspect them later." Of course, none of the memory researchers agreed with the statement. Also, 55% of the sample agreed with the statement, ―Once you have experienced an event and formed a memory of it, that memory does not change." Again, 0% of the experts agreed with this statement. This data show the general public have little understanding of the way memory works. This is especially troubling because our jurors are drawn from the general public.

Parra, Terrell and Weaver (2011, October) asked Texas attorneys the same questions, 70% of prosecution attorneys agreed that the testimony of one confident eyewitness should be enough evidence to convict, compared to 32% of other respondents. This represented the most marked difference between groups. Attorneys' opinions regarding the two most prominent myths of memory—that memory is verbatim and permanent—were more closely-aligned with eyewitness memory experts than those of the general population. As such, attorneys may well over-estimate the knowledge of jurors. For cases involving eyewitness testimony, jury members would likely benefit from expert testimony regarding memory.

Kassin and colleagues (2001) surveyed 64 eyewitness experts for their opinions on reliability of eyewitness memory phenomena (―Do you think this phenomena is reliable enough for psychologists to present in courtroom testimony?"), research basis (Is your opinion ―based on published, peer reviewed, scientific research?"), and if they believed the phenomena to be a common sense notion among jurors (―Most jurors believe this statement to be true as a matter of common sense."). The survey included 30

eyewitness topics. On the topic of weapon focus, 87% of experts deemed it reliable, 97% said it had a research basis, and 64% said it was not common sense for jurors. On the topic of own-race bias, 90% of experts deemed it reliable, 97% said it had a research basis, and 35% said it was not common sense for jurors.

Using the same 30 eyewitness topics as Kassin et al. (2001), Benton and colleagues (2006) surveyed 111 jurors, 42 judges, and 52 law enforcement officials. Of interest, they asked potential jurors in Tennessee to read and evaluate 30 statements about eyewitness memory and reliability (Table 2). A panel of eyewitness memory experts also evaluated these statements. The responses of jurors diverged from those of the experts nearly 90% of the time.

Schmechel and colleagues (Schmechel, O'Toole, Easterly & Loftus, 2006) recently surveyed more than a thousand potential jurors, and identified more than 10 different areas in which jurors' "common sense" beliefs regarding memory were flawed. The Public Defender Survey shows the majority of jurors polled come to trial with misconceptions of memory at the most basic level and especially eyewitness memory topics (Schmechel et al., 2006). Jurors disagreed with eyewitness experts on 87% of eyewitness topics and statements. Judges and law enforcement disagreed with experts on 60% of the issues. Specifically, the researchers found only 39% jurors agreed with experts on the topic of weapon focus (i.e., 61% of jurors did not believe weapon presence impairs eyewitness identification) and only 47% agreed with experts on the topic of own-race bias (i.e., 53% of jurors did not believe eyewitness are more accurate at identifying members of their own race).

Table 2. *Statements concerning the reliability of eyewitnesses, and percentage agreement with those statements among experts and jurors (based on Benton, et al., 2006) (see also Schmechel, et al., 2006).*

Concept *(Brief description of question)*	Agreement by Experts	Agreement by Jurors
Lineup Instructions *(Instructions prior to lineup can influence outcome)*	98%	41%
Exposure Time (*Less time an eyewitness sees event, less well remembered event will be)*	81%	47%
Forgetting Curve *(Forgetting is greatest right after event, then levels off)*	83%	33%
Witness Confidence *(Witness's confidence is not a good predictor of witness accuracy)*	87%	38%
Source Confusion *(Witnesses sometimes identify things seen in other contexts or situations)*	81%	30%
Hypnotic Suggestibility *(Hypnosis increases susceptibility to leading/misleading questions)*	91%	24%
Confidence Malleability *(Witness confidence can be influenced by factors unrelated to accuracy)*	95%	50%
False Childhood Memories *(Memories recovered from childhood often false or distorted)*	68%	35%
Presentation Format *(Formats that encourage relative judgments increase misidentifications)*	81%	31%
Child Witness Accuracy *(Young children are less accurate than adults)*	70%	32%

Juror insensitivity to factors influencing eyewitness memory plays a role in how they accept testimony from eyewitnesses. If jurors believe –memory is like a video camera," they may accept the eyewitness without question. The data collected by Schmechel et al (2006), Simons and Chabris (2011), Kassin et al. (2001), and Benton et al. (2006) demonstrate jurors do not fully understand the mechanism of memory and as such, memory is indeed beyond the ken of the majority of jurors.

These misperceptions influence how jurors evaluate memory loss. In a recent study (Kassam, Gilbert, Swencionis, & Wilson, 2009), inspired by the recent trial of the former Chief of Staff for Vice President Dick Cheney, individuals were asked to judge memory errors committed by others. Those making evaluations consistently expected people to recall more than they did. They were particularly insensitive to the conditions present at the time of encoding. That is, they believed there was little difference between individuals motivated to remember at retrieval, compared to those motivated to remember at encoding. They did not recognize that if the importance of information became apparently well after an event occurred, that this would have little impact on memory.

Hastie (as cited in Hastie, Penrod & Pennington, 1983) states that there are four basic weaknesses regarding jurors' reaction to eyewitness memory: Jurors are insensitive to bias that may be introduced during a crime investigation, jurors possess insufficient awareness of factors that interfere with accurate retention, jurors lack sophistication regarding tests of facial recognition, and jurors place excessive emphasis on a witness's statements about the confidence of his/ her identification. The lack of knowledge concerning memory and factors that influence eyewitness memory lends credence to the notion expert testimony on the topic of memory will assist jurors with the challenge of

rendering a verdict based on the accuracy of an eyewitness (see Weaver, Parra, & Terrell, 2010 and Parra et al., 2011, October). An analysis of memory- related factors in a case could assist members of a jury in their deliberations.

Biases in Jurors

Bornstein, O'Bryant, and Zickafoose (2008) demonstrated prior beliefs influenced mock jurors' verdicts. These biases are important to measure as they can play an important role in the verdict without the juror's awareness (Devenport, Stedbaker, & Penrod, 1999). These ―enduring personal characteristics" may lead to a bias towards the prosecution (i.e., a conviction bias) or reasonable doubt (i.e., a defense bias; Kassin &Wrightsman, 1983).

Boehm (1968) noted that people high in legal-authoritarian traits are biased towards conviction. Boehm (1968) developed the Legal Attitudes Questionnaire (LAQ) to measure legal authoritarianism based on the three constucts of antiauthoritarianism (to encompass liberal sentiments), equalitarian (to describe endorsed traditional position), and authoritarism (to cover the conservative philosophy). She demonstrated persons high in legal-authoritarian characteristics, i.e., conservative traits, consistently convict although the evidence indicates innocence. Kravitz, Cutler, and Brock (1993) developed and revised the Legal Attitudes Questionnaire (RLAQ-23) to measure legal authoritarianism, based in part by the Boehm's (1968) notion that authoritarian traits are high in those that are conviction-prone. A high score of the RLAQ-23 indicates high legal authoritarian traits and a legal bias towards conviction. Internal reliability was .71, higher than it was for Boehm's original LAQ's reliability of .63.

Kassin and Wrightsman (1983) developed the Juror Bias Scale (JBS) to assess legal biases or individual differences in legal attitudes. The 22-question scale assesses reasonable doubt or conviction prone traits. A person high in reasonable doubt would strongly disagree with a statement such as ―For serious crimes like murder, a defendant should be found guilty if there is a 90% chance that he committed the crime," and would strongly agree with the statement ―The death penalty is cruel and inhumane." A person high in conviction proneness would strongly agree with statements such as ―A suspect who runs from the police probably committed the crime," and ―The defendant is often a victim of his own bad reputation." A high score on the JBS indicates a conviction-prone juror. Test-retest reliability of the JBS after a 5-week period was .67.

Lecci and Myers (2008) developed the 29-item Pretrial Juror Attitude Questionnaire (PJAQ) based on the JBS scale items. They identified subscales with the survey such as racial bias, innate criminality, social justice, conviction proneness, system confidence, and cynicism toward the defense to more accurately describe the legal bias. Example items include, ―If a suspect runs from the police, then he probably committed the crime" (system confidence), ―Defense lawyers are too willing to defend individuals they know are guilty" (cynicism towards the defense), ―Criminals should be caught and convicted by any means necessary" (conviction proneness), ―A black man on trial with a predominately white jury will always be found guilty" (social justice), ―Minorities use the race issue only when they are guilty" (racial bias), and ―Once a criminal, always a criminal" (innate criminality). A high score on the PJAQ indicates a conviction-prone juror. Lecci and Myers (2009) reported the PJAQ more accurately predicts verdict change compared to the JBS.

Biases can impact how information learned during the trial is attended, processed, recalled, and weighed. Carlson and Russo (2001) demonstrated a biased juror may favor a particular verdict from the onset of the trial and use new evidence to selectively confirm that verdict. Also, a biased juror may implicitly use prior beliefs and preconceived notions to influence the case verdict.

Many, if not most, biases operate outside our consciousness (Malavanti, Johnson, Rowatt & Weaver, 2012). Kahneman (2011) now distinguishes between two systems: System 1, characterized by rapid, effortless, and largely unconscious processes, and System 2, characterized by effortful, slow, and deliberate processes. Decision makers, jurors included, often assume they are relying on System 2 processes. In reality, most attributions are driven by System 1 processes. Although jurors may deny that decisions might be influenced by racial factors, for example, they undoubtedly are.

Adams, Bryden, and Griffin (2011) investigated these processes in mock jury deliberations involving White and Middle Eastern witnesses, victims, and defendants. During deliberations, where Kahneman‘s System 2 processes might be expected, racial biases were mediated by juror discussions. When the authors invoked stereotypes of Middle Eastern terrorists (a System 1 process), however, jury biases were not mediated by deliberations. These subtle forms of racial biases are likely to elicit their effects outside the realm of consciousness.

Models of Decision Making

Jurors must process information presented during the trial and update that knowledge when new information is available. An explanation for juror decision-making is that jurors use episode schema to organize the implicit and explicit information and

evidence presented. Bartlett's schema theory (1932) suggests we have a framework in which we organize existing information. We add new information to these frameworks. In a trial scenario, we can form a schema of criminal case and evidence presented in the trial will just be added to the schema.

Hastie and colleagues (1983) find jurors often adopt a narrative early in the trial and then use evidence to modify this narration. For example, 80% to 90% of jurors favor one verdict before deliberation (Hastie, Penrod, & Pennington, 1983). The way a juror reaches a verdict can be explained by the 3-stage explanation-based Story Model: story construction, verdict representation, and story classification (Pennington & Hastie, 1986). First, jurors use the evidence presented to form a narrative story. Then, the juror uses possible verdict alternatives as end-result decision categories. Third, jurors try to find the best fit between the narrative story formed and the verdict category. The verdict with the best fit to the story is thought to be the verdict chosen by the juror. Thus, new information or evidence given throughout the trial serves to enhance the prevailing narrative story. Thus, this model is in contrast to the assumption of rational decision-makers.

In the knowledge-updating model of decision-making, individual juror decisions are assumed to be rational in nature. That is, thoughts are presumed to go through a series of mental processes such as attention, recognition, and further processing to arrive at a single decision, the verdict. Knowledge-updating is simply the process of updating the story after some kind of feedback or additional information. Therefore, evidence will be weighed appropriately by jurors if it is properly attended to.

Cognitive Load

Complicating matters further, jurors seldom have ideal circumstances under which to gather information and make decisions. Rather, jurors must selectively identify critical evidence from an abundance of information presented to them in court. Jurors must keep track of facts, evidence, testimony, and attorney statements. As such, jurors are thought to be operating under conditions of "high cognitive load". Cognitive load, or cognitive busyness, can be described as information we hold in mind while performing other tasks (Gilbert, Pelham, & Krull, 1988). Examples of cognitive load functions used in the laboratory are making participants switch back and forth between different tasks or having them hold some task-unrelated material (e.g., memorizing a sequence of digits) in their working memory.

Lavie (2010) states the ability to focus attention improves when people are under conditions of high perceptual load, while attention worsens under higher working memory load (i.e., cognitive load). The load theory of selective attention and cognitive control (Lavie, Hirst, De Fockert, & Viding, 2004) assumes perception is limited in capacity and is an automatic process. Therefore, high perceptual load will employ full attention and exclude irrelevant distractions, while low perceptual load will not occupy full attention and will allow room for irrelevant distractions. The level of load on cognitive-control functioning plays an important role on the effectiveness of automatic processing (e.g., working memory). According to Jenkins, Lavie, and Driver (2005), cognitive load in a non-face domain (e.g., memorizing numbers) will impair face recognition.

Cognitive load can have a direct effect on decision-making by basing decisions on emotion instead on reason (Shiv & Fedorikhin, 1999). Shiv and Fedorikhin (1999) investigated the relationship between affect and cognition on decision-making. The first experiment examined cognitive load (low, high) and presentation mode (symbolic, real) on decision-making. Participants were asked to memorize a number when exiting one room and asked them to recall the number in a second room. Half of the participants memorized a seven-digit number (i.e., high cognitive load condition), while the other half memorized a two-digit number (i.e., low cognitive load condition). The experimenter displayed the number to be memorized and asked participants to walk over to a cart that held either pictures of a slice of chocolate cake and a bowl of fruit (i.e., symbolic presentation mode) or an actual chocolate cake and a bowl of fruit (i.e., real presentation mode). Respondents chose which snack they would like to have and moved on to the second room to recall their number. In the second room, participants also described what went through their minds when choosing between the two snacks and respondents filled out questions on their decision basis, cognitions, and affect.

Neither the choice of cake nor the load condition impacted performance when the presentation mode was symbolic. Participants in the high cognitive load and real presentation mode conditions chose chocolate cake more frequently and based their decisions on affect, while participants in the low cognitive load and real presentation condition chose a healthy snack and based their decisions on cognitions. This has several implications in the legal decision-making literature. Perhaps jurors overloaded with information of the case will be more likely to base their decisions on affect instead of

cognition. In regards to the knowledge updating, higher cognitive load may affect the amount of resources available to acquire new information during a trial.

Increased cognitive load can cause errors in decision-making. According to Gilbert, Pelham, and Krull (1988), busy perceivers (i.e., those with high cognitive load) do not fail to notice or recall information, but rather are too busy cognitively to use information from situational contexts to correct their initial impressions. Importantly, characterization of a person requires fewer cognitive resources than later correction. These issues may be especially important in juror decision-making.

Kleider, Knuycky, and Cavrak (2012) recently studied the effects of available cognitive resources in the decision-making of racially prejudiced mock jurors. Increased cognitive load jurors, with high racial prejudice and low working memory capacity, found Black defendants guiltier than no load jurors did in ambiguous cases. Our study is more general in nature: examining cognitive load and exculpatory evidence effects in mock jurors.

The Present Experiments

I investigated how jurors formed and then updated courtroom "stories" as a function of differing cognitive load. I also collected scores on the PJAQ to examine juror characteristics leading to differing verdicts. In all three experiments, I measured verdict changes over time. In Experiment 1, I measured the effect of exculpatory evidence on decision-making. In Experiment 2, I followed similar procedures but included a classic cognitive load task (i.e., memorizing a set of numbers). In Experiment 3, I used extraneous details rather than having participants memorize a set of numbers.

In all three experiments, participants completed the PJAQ and then read a case summary, which described an armed robbery of a convenience store. The summary included both prosecutorial and defense presentations of evidence. The prosecutorial statement included a positive identification of the defendant from a line-up, a gun registered to the defendant‘s name that used the same caliber of bullet used in the robbery, and money found in the defendant‘s home that was close to the amount taken from the crime scene. The defense statements included an alibi from the defendant‘s girlfriend, an explanation of the money found in a closet in the defendant‘s home, an explanation of the gun registered to his name, and an alternate suspect. In the conclusion, the summary also included a statement from the eyewitness and victim of the armed robbery, the clerk of the convenience store. The eyewitness was highly confident that he had pointed out the correct person as the robber (i.e., confidence/accuracy effect), was of a different race than the defendant (i.e., own race bias), and admitted to paying very close attention to the gun used in the robbery (i.e., weapon focus effect). The case summary was purposefully ambiguous in nature, as the main goal of Experiment 1 was to measure verdict changes over time, when one condition was given evidence, exculpatory in nature. In the video, an adult black male with a hood over his head commits an armed robbery of the convenience store. However, the video is of poor quality, as is the product of most surveillance cameras. Also, the robber does not quite match the photograph of the defendant, given to participants with the case summary.

Experiment 2 introduced a cognitive load manipulation (memorization of an 8-digit list of numbers) during the reading of the case summary and watching of the video. All participants watched the exculpatory video in this experiment. Experiment 3 utilized

the same procedures as Experiment 2, but the cognitive load manipulation was changed to extraneous information in the case summary in addition to directed attention direction from the experimenter for the video.

Verdict changes over time were assessed following the presentation of new information. This allowed us to observe how jurors use information initially and how new information alters their decisions. Knowledge-updating models and story models of juror decision-making predict different outcomes. According to the knowledge-updating model, jurors should weigh the evidence appropriately, and exculpatory evidence should increase votes of acquittal. Story-based models, on the other hand, would predict exculpatory evidence would have less of an impact if the new information does not conform to existing schema. Will jurors, who most likely have already chosen a verdict from the onset of the trial, adjust their prevailing story and thus, their verdict, accordingly? Or will they choose to ignore the exculpatory evidence in favor of the established story? We hypothesized the knowledge-updating model would be supported.

In addition, we investigated several questions with respect to the PJAQ. First, does the PJAQ reliably predict conviction-prone jurors (those who are more likely to vote guilty) in an American collegiate sample? Second, are conviction-prone jurors more or less likely to be impacted by cognitive load?

In addition, we tested cognitive load demands using a traditional cognitive load task (Experiment 2) and a task that mimics more closely the tasks real jurors experience (Experience 3). We hypothesized that increased cognitive load would affect jurors‘ ability to process information initially and over time. Relatively few studies have

investigated the performance of jurors under high cognitive load demands; thus, Experiments 2 and 3 are unique.

CHAPTER TWO

Methodology, Materials, Procedure, Design, Results, Discussion

Experiment One

In Experiment 1, I investigated knowledge updating by jurors of differing conviction-prone scores in a mock-trial. Jurors read about evidence in a trial and rendered a verdict, and then viewed an exculpatory videotape and again rendered a verdict.

Participants

One hundred and thirteen Baylor University undergraduates (Female = 92, Male = 21, Mean age = 19.28) volunteered their participation in the experiment, earning experimental participation credit for introductory psychology courses in return. All participants signed an informed consent for research participation and received a copy of the form for their records. The study was approved by Baylor‘s Institutional Review Board and met the American Psychological Association‘s standards for minimal risk to the well-being of participants.

Materials and Procedure

The participants were tested individually. Upon entering the experimentation session, the participants were given a file folder containing the experimental procedure and asked to be seated in front of a computer. At this time, participants were assigned an ID number to safeguard their identity and were referred to by the number during analysis,

thus preserving their privacy and anonymity. Participants were randomly assigned to the no video condition (i.e., control) or to the video condition (i.e., experimental). Neither the researcher nor the research assistant knew which condition the participant was assigned to. Participants were told that we were investigating decision-making in jurors. All mock jurors first completed the Pre-trial Juror Attitudes Questionnaire (PJAQ). Upon completion of the survey, they then read the case summary (see Appendix A) and were handed a picture of the defendant in the case summary. Participants were told to pay careful attention to the summary. Following the reading of the summary (Time 1), participants rendered verdicts, using a 6-point Likert scale ranging from 1= clearly innocent, to 6= clearly guilty (See Appendix B). Then, half of the participants (i.e., the video condition) viewed a video of the crime while the other half completed an unrelated anagram task for the length of the video (i.e., the no video condition). The video showed a man similar in description to the defendant robbing a convenience store with a gun. The individual shown in the video matched the description of the suspect only in the most general terms: ethnicity and gender. However, the man in the video was neither the man shown in the photograph nor did he match the specific characteristics described in the summary. All participants were asked to render verdicts again (Time 2), considering all the information presented during the session. All jurors then voted again.

Design

Participants were randomly assigned to one of two separate experimental conditions; No Video (N=56) and Video (N=57). All participants were tested twice, following initial information and again following presentation of new evidence. Unless stated otherwise, the data were analyzed using a 2 (video condition, 2 levels between-

subjects) by 2 (verdict decision time, 2 levels within-subjects) MANOVA in PASW Statistics v. 17.0.3 software (SPSS: An IBM Company). Subjects rated their verdicts using a 1-6 sale. The rating scale was presented with verbal descriptions aside each number: (1) clearly not guilty, (2) not guilty, (3) somewhat not guilty, (4) somewhat guilty, (5) guilty, (6) clearly guilty. Verdict scores were recoded so that verdicts ranging from 1-3 (clearly not guilty, not guilty, and somewhat not guilty) were recoded to equal 0 (a not guilty verdict) and verdicts ranging from 4-6 (somewhat guilty, guilty, and clearly guilty) were recoded to equal 1 (a guilty verdict). Results were confirmed using SAS ® v. 8 software (SAS: SAS Institute Inc.).

Results

As expected, we found that those who rendered guilty verdicts had significantly higher scores on the PJAQ, indicating a more conviction-prone juror, at Time 1 ($F_{(1, 111)}$= 10.972, p = .001) and at Time 2 ($F_{(1, 111)}$= 5.570, p = .020) (See Figure 1).

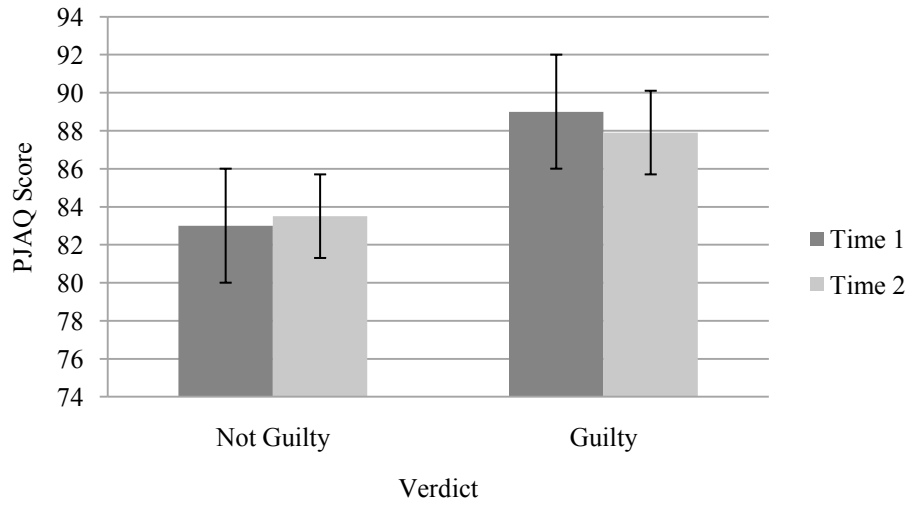

Figure 1. PJAQ score as a function of verdict and time of verdict decision, Experiment 1.

We also measured verdict changes over time. Time 1 is the verdict given immediately after reading the case summary, and Time 2 is the verdict after video viewing. Overall, verdicts changed over time ($F_{(1,111)} = 5.376$, $p = .022$, $\eta_p^2 = .046$). In addition, the video had no significant effect ($F_{(1,111)} = .985$, $p = .323$, $\eta_p^2 = .009$). However, the variables interacted. Those in the control group showed no change from Time 1 to Time 2. Those who watched the exculpatory video were significantly less likely to vote guilty at Time 2, reflected in the Time by Video interaction ($F_{(1, 111)} = 6.251$, $p = .014$, $\eta_p^2 = .053$) (See Figure 2).

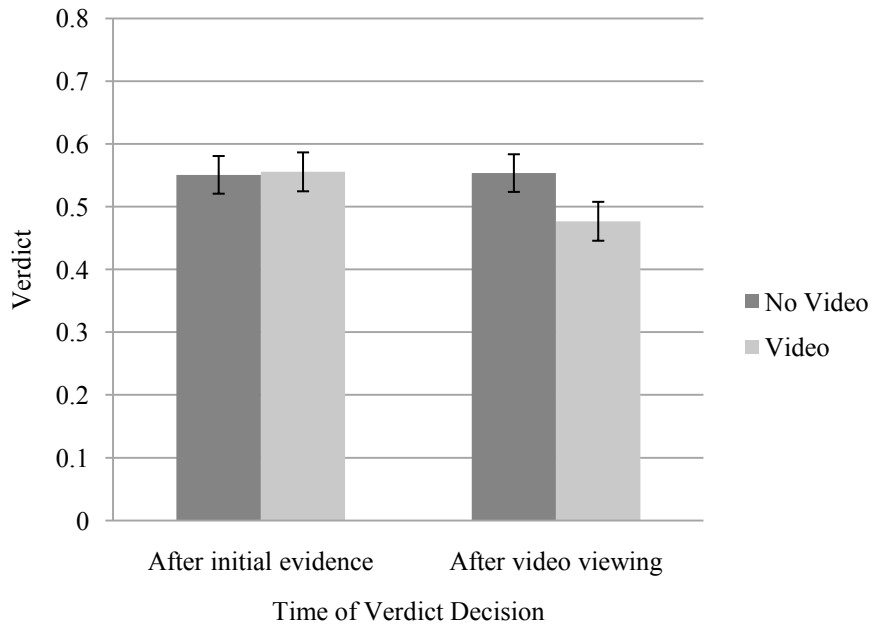

Figure 2. Verdict as a function of time of verdict decision and video-watching, Experiment 1.

When the PJAQ scores were entered as a covariate, the overall model did not change. Verdicts did not change over time ($F_{(1,111)} = .126$, $p = .724$, $\eta_p^2 = .001$). In addition, the video had no significant effect ($F_{(1,111)} = .915$, $p = .341$, $\eta_p^2 = .008$). Bias did have an effect ($F_{(1,111)} = 9.340$, $p = .003$, $\eta_p^2 = .079$). However, the variables that

produced a significant interaction were Time and Video condition. Those in the control group showed no change from Time 1 to Time 2. Those who watched the exculpatory video were significantly less likely to vote guilty at Time 2, reflected in the Time by Video interaction ($F_{(1, 109)}$= 7.798, p = .006, η_p^2=.067) (see Figure 3).

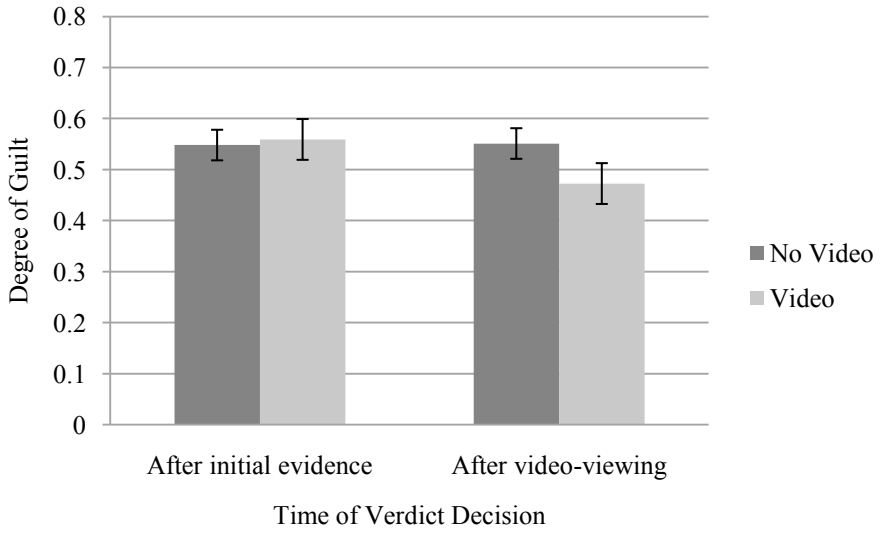

Figure 3. Verdict as a function of time of verdict decision and video-watching, with PJAQ as a covariate: Bias=85.08, Experiment 1.

Discussion

The two groups received the same information in the initial case summary and their verdicts reflect this; they did not differ at Time 1. However, those who watched the video were significantly less likely to vote guilty at Time 2.

Mock jurors were able to process initial information and make changes when new information becomes available: jurors modified their verdicts after viewing an exculpatory video. In addition, the PJAQ was validated in our sample: those with higher PJAQ scores were in fact more likely to vote "guilty." However, PJAQ scores did not change the model.

The design of the present experiment allowed us to view verdict changes over time. Furthermore all jurors, not just those less conviction-prone, updated their schema with new information when it became available.

Experiment Two

In Experiment 2, we investigated whether initial schema formations and later knowledge updating would be affected by cognitive load in a mock trial procedure similar to that in Experiment 1. All participants watched the video in this experiment, but in Experiment 2, cognitive load was manipulated using a working memory task of memorizing a series of numbers. We expected increased cognitive load to affect juror decision-making by making them more likely to base their decisions on affect and not cognition. Additionally, we expected cognitive load to moderate changes in verdicts associated with new information.

Participants

Seventy seven Baylor University undergraduates (Female = 62, Male = 15, Mean age = 19.21) volunteered their participation in the experiment, earning experimental participation credit for introductory psychology courses in return. All participants signed an informed consent for research participation and received a copy of the form for their records. The study was approved by Baylor‘s Institutional Review Board and met the American Psychological Association‘s standards for minimal risk to the well-being of participants. Participants who previously participated in Experiment 1 were excluded from this experiment.

Materials and Procedure

This experiment used a mock trial procedure similar to the one used in the Experiment 1. All participants were tested individually and were randomly assigned to a condition. They first completed the PJAQ. Once the questionnaire was completed, the participants memorized a set of 8-digit set of numbers as part of the experiment. They were told they would be asked to recall the set of numbers at some point in the experiment. All mock jurors read a trial summary in which eyewitness testimony played a central role. Those in the experimental condition were asked to repeat the number they previously memorized. Then, they rendered their verdict (Time 1). Participants in the cognitive load condition were given another 8-digit set of numbers to memorize. Then, all participants watched the video. Those who memorized the numbers recalled them and then all participants rendered a verdict again (Time 2). All jurors were then asked a series of questions regarding details of the case.

Design

Participants were randomly assigned to one of two separate experimental conditions; No Load (N=39) and Cognitive Load (N=38). All participants were tested twice, following initial information and again following presentation of new evidence. Unless stated otherwise, the data were analyzed using a 2 (cognitive load condition, 2 levels between-subjects) by 2 (verdict decision time, 2 levels within-subjects) MANOVA in SPSS. Subjects rated their verdicts using a 1-6 sale. The rating scale was presented with verbal descriptions aside each number: (1) clearly not guilty, (2) not guilty, (3) somewhat not guilty, (4) somewhat guilty, (5) guilty, (6) clearly guilty. Verdict scores were recoded so that verdicts ranging from 1-3 (clearly not guilty, not guilty, and

somewhat not guilty) were recoded to equal 0 (a not guilty verdict) and verdicts ranging from 4-6 (somewhat guilty, guilty, and clearly guilty) were recoded to equal 1 (a guilty verdict). Results were confirmed using SAS.

Results

As expected, those who rendered a guilty verdict at Time 1 had significantly higher scores on the PJAQ, indicating a more conviction-prone juror ($F_{(1,75)} = 7.658$, $p = .011$) (see Figure 4). Those who rendered a guilty verdict at Time 2 had significantly higher scores on the PJAQ ($F_{(1, 75)} = 10.527$, $p = .002$).

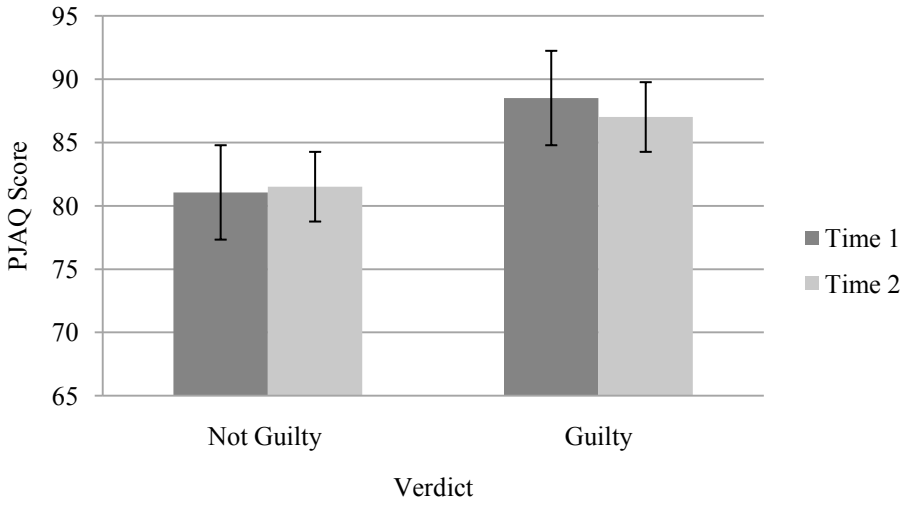

Figure 4. PJAQ score as a function of verdict and time of verdict decision, Experiment 2.

Overall, verdicts changed over time ($F_{(1, 75)} = 2.717$, $p = .003$, $\eta_p^2 = .035$). In addition, the cognitive load condition had no significant effect ($F_{(1,75)} = .155$, $p = .695$, $\eta_p^2 = .002$). However, the variables interacted. Mock jurors under cognitive load during both reading the case summary and watching the video did not change their verdict. Mock jurors under no cognitive load were more likely to vote the defendant guilty at Time 1 and less likely to vote guilty at Time 2, reflected in the Time by Cognitive Load

condition interaction ($F_{(1, 75)} = 5.070$, $p = .027$, $\eta_p^2 = .038$) (See Figure 5). When the PJAQ is entered as a covariate, the model did not change significantly.

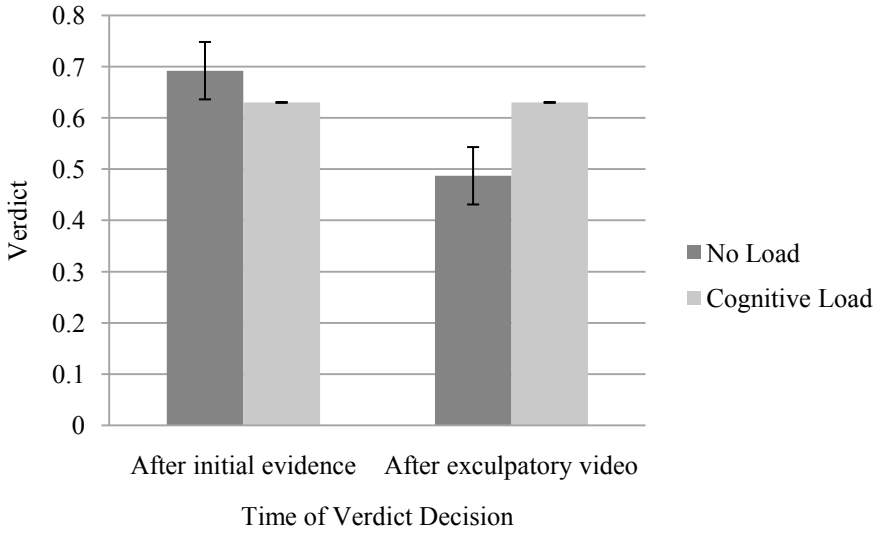

Figure 5. Verdict as a function of time of verdict decision and cognitive load condition, Experiment 2. Note: error bars are pictured, but they are very small.

Discussion

When jurors' ability to acquire and update knowledge was compromised by demanding cognitive loads, both the acquisition and knowledge updating processes were impaired. Those who read under conditions of high cognitive load were less likely to vote guilty initially, and those who watched the video under high cognitive load were less likely to modify their verdict after viewing exculpatory evidence. Experiment 2 demonstrated effects of increased cognitive load on verdict information formation and change. However, the cognitive load task in Experiment 2 is quite unlike demands faced by real jurors.

Experiment Three

In Experiment 3, we used a more ecologically valid cognitive load manipulation: the addition of extraneous and often irrelevant details in the case summary. We hypothesized that extraneous details would produce results similar to laboratory-induced cognitive load measures.

Participants

One hundred and seven Baylor University undergraduates (Female = 77, Male = 30, Mean age = 19.52) volunteered their participation in the experiment, earning experimental participation credit for introductory psychology courses in return. All participants signed an informed consent for research participation and received a copy of the form for their records. The study was approved by Baylor‘s Institutional Review Board and met the American Psychological Association‘s standards for minimal risk to the well-being of participants. Participants who previously participated in the previous studies in the lab were excluded from this experiment.

Materials and Procedure

In Experiment 3, we followed the same basic procedure as in Experiment 2. All participants were tested individually and were randomly assigned to a condition. They completed the PJAQ. To vary cognitive load, related but irrelevant exculpatory details were included in the case summary of half of the participants (i.e. the cognitive load condition); (example of case summary in Appendix C). The other half of the participants read the case summary as it was in Experiment 1 and 2. All of the participants rendered a verdict based on the case summary and then viewed the exculpatory video of the crime in

which the perpetrator clearly did not match the witness's description (Time 1). Those assigned to the increased cognitive load condition were given additional instructions to pay close attention to the details in the video. As before, jurors rendered a verdict (Time 2). All jurors were then asked a series of questions regarding details of the case.

Design

Participants were assigned to one of two separate experimental conditions; No Load (N=56) and Cognitive Load (N=57). All participants were tested twice, following initial information and again following presentation of new evidence. Unless stated otherwise, the data were analyzed using a 2 (cognitive load condition, 2 levels between-subjects) by 2 (verdict decision time, 2 levels within-subjects) MANOVA in SPSS. Subjects rated their verdicts using a 1-6 sale. The rating scale was presented with verbal descriptions aside each number: (1) clearly not guilty, (2) not guilty, (3) somewhat not guilty, (4) somewhat guilty, (5) guilty, (6) clearly guilty. Verdict scores were recoded so that verdicts ranging from 1-3 (clearly not guilty, not guilty, and somewhat not guilty) were recoded to equal 0 (a not guilty verdict) and verdicts ranging from 4-6 (somewhat guilty, guilty, and clearly guilty) were recoded to equal 1 (a guilty verdict). Results were confirmed using SAS.

Results

As expected, those who rendered a guilty verdict at Time 1 had significantly higher scores on the PJAQ, indicating a more conviction-prone juror ($F_{(1,105)} = 5.847$, $p = .017$) (see Figure 6). Those who rendered a guilty verdict at Time 2 had significantly higher scores on the PJAQ ($F_{(1, 105)} = 9.427$, $p = .004$).

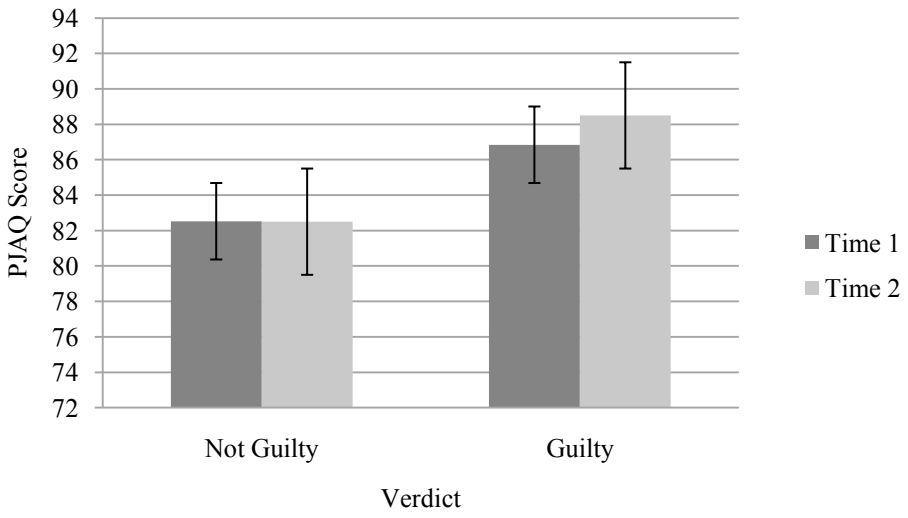

Figure 6. PJAQ score as a function of verdict and time, Experiment 3.

Overall, verdicts changed over time ($F_{(1, 105)} = 3.797$, $p < .06$, $\eta_p^2 = .035$). Across all groups, the cognitive load manipulation produced no main effect ($F_{(1,105)} = .463$, $p = .498$, $\eta_p^2 = .004$). However, the variables interacted (See Figure 7).

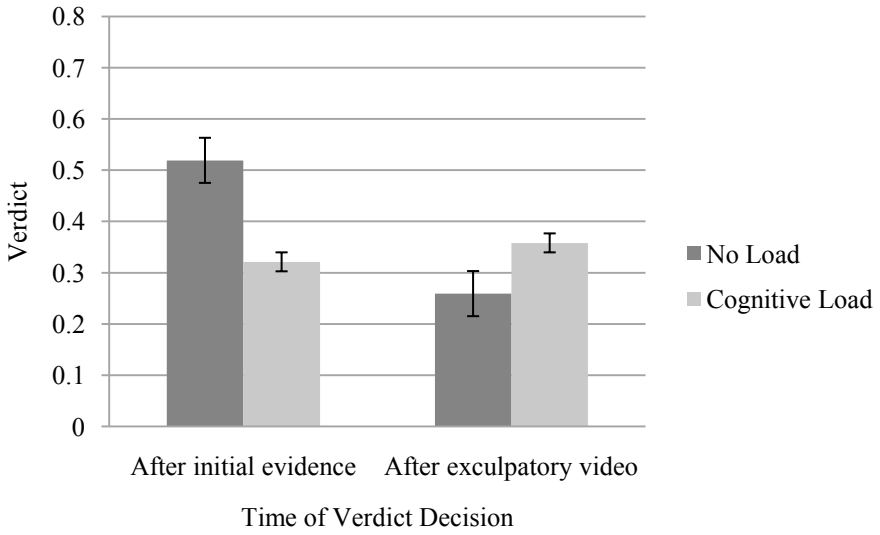

Figure 7. Verdict as a function of time of verdict decision and cognitive load condition, Experiment 3.

Mock jurors under cognitive load during both reading the case summary and watching the video did not change their verdict. Mock jurors under no cognitive load were more likely to vote the defendant guilty at Time 1 and less likely to vote guilty at Time 2, reflected in the Time by Cognitive Load condition interaction ($F_{(1, 105)} = 6.825$, $p = .01$, $\eta_p^2 = .061$). When PJAQ was entered as a covariate, the model did not significantly change.

Discussion

Adding related extraneous and irrelevant details produced results much like prior cognitive load (Experiment 2). The jurors in conditions of high cognitive load again were less likely to vote guilty after reading the case summary and were less likely to modify their verdicts after receiving exculpatory evidence from the video.

CHAPTER THREE

General Discussion

Jurors have a difficult task. They must process information presented during the trial, and update that knowledge when new information is available. Finally, they must retrieve and attend to this information during deliberation. Many factors influence jurors‘ receptiveness to evidence and subsequent decision-making (Bornstein, O‘Bryant & Zickafoose, 2008; Kassin & Wrightsman, 1983). Jurors, above all else, must evaluate evidence and adjust their decision accordingly. As was discussed in the Introduction, some jurors are more conviction-prone than others; we replicated that finding in all three Experiments. In truth, though, all jurors form stories or schema early in the decision-making process. Then, they modify those views as new evidence is brought forth. Our results show that one important factor in this process is cognitive resources available to evaluate evidence. That is, some evidence may be more persuasive simply by the conditions under which the information is presented. In particular, jurors with few available cognitive resources were less likely to process initial information successfully, and less likely to update decisions when new information became available.

The original paradigm introduced in these studies involved making verdict decisions based on information provided which included reading a case summary and solving an anagram or reading a case summary and watching a video of the crime. One advantage of using a between-subjects design was that we were able to control for the effects of decay of memory over time between the two groups. Mock jurors are able to

process initial information, and make changes when new information becomes available: jurors modified their verdicts after viewing an exculpatory video (Experiment 1).

In Experiments 2 and 3, all participants viewed the video so that the only variable different between groups was whether the participant viewed it under a high cognitive load. When jurors‘ ability to acquire and update knowledge is compromised by demanding cognitive loads (Experiment 2 and 3), both the acquisition and knowledge updating processes are impaired. This suggests that when presenting vital information, anything that taxes jurors‘ resources will compromise their decision making. This is particularly important if the information significantly alters the ―story” the jurors may have formed (Pennington & Hastie, 1986). Many attorneys use similar tactics in their efforts to sway the jury. By increasing the number of facts or diverting attention to irrelevant details, the juror will have increased cognitive load demands. Likewise, particularly impactful evidence should be presented with as little extraneous information present as possible.

Jurors indeed have a difficult task, and they come with existing biases. Even so, jurors update their knowledge and change the verdict with the presence of new information. Anything that reduces their amount of available cognitive resources, though, initially compromises their knowledge acquisition and their ability to update that knowledge with new information. Therefore, attorneys should be aware of the limitations of jurors and present information in a clear and concise manner, so as to not increase cognitive demands on the juror.

One variable we know affects cognitive performance generally is affect. For example, anxiety may either consume cognitive resource itself or reduce the total

available total of resources (Vytal, Cornwell, Arkin, & Grillon, 2012). Affect may have similar effects to increased cognitive load demands. Information may not be evaluated appropriately under conditions of decreased or increased affect. The affect of the witness may play a key role in juror decision-making, by increasing cognitive load in jurors. The emotional victim effect is a robust phenomenon in which nonverbal displays of emotion (e.g., displays of tears, a visibly upset demeanor, an agitated appearance) from a victim increase their perceived credibility by police officers, jurors, and the like (Ask & Landström, 2010). In future studies, the eyewitness statement could come from a neutral eyewitness or an emotional eyewitness. Empathetic responding is cognitively demanding (Batson, O'Quin, Fultz, Vanderplas, & Isen, 1983). This empathetic responding may increase cognitive load in jurors in a way that replicates the findings in Experiments 2 and 3.

Ironically, then, an emotionally-moving witness may actually impair a juror's ability to acquire and update relevant knowledge. In any case, these findings produce powerful evidence that increasing cognitive demands on jurors harms their ability to process critical information.

APPENDICES

APPENDIX A

Case Summary

Please completely read this summary.

Court Case Summary

The crime to be tried is of Alan Crowtzer, a 28-year old male, who was indicted for the armed robbery of a local convenience store.

The local convenience store was robbed at gunpoint on September 26, 2007. At 7:03 P.M., a heavy-set dark-skinned black male matching the defendant‘s description entered the convenience store wearing a hooded jacket. He approached the counter, lifted his hood onto his head and proceeded to rob the manager of the store at gunpoint. The suspect, and his ―look out," fled with an undisclosed amount of money in a gold Jeep Cherokee.

The prosecution contends that the defendant robbed a convenience store at gunpoint. The evidence presented by the prosecution included a positive identification of the defendant by the store clerk in a police line-up. The police also found money in the defendant‘s closet that was very close to the amount reported stolen.

The defense claimed that the defendant was in the convenience store as a customer earlier that day, and that the defendant‘s girlfriend provided an alibi indicating that he was not present at the store at the time of the robbery. The defense also claimed that the gun registered in the defendant‘s name was stolen several years earlier, though no police report was ever made. The defense also claimed that the money in the closet

represented savings from the defendant‘s job. The defense contends that the defendant has no prior criminal record and no history of violence.

The eyewitness, an Indian man who served as the cashier on the night of the incident, positively identified the defendant as the man who robbed the convenience store the night of September 26, 2007. He was very confident in his identification. He stated that he would never forget the defendant‘s face or the type of gun used during the robbery. He stated that he feared for his life during the robbery and that is why he gave up the money. He rebuked the defense‘s notion that the defendant was in the store earlier on the same day, although he acknowledged that he didn‘t remember the face of every person who walked in the store that day. He was then shown a photograph of a man who was known to be in the store earlier that day, before the robbery was committed. The eyewitness stated that the man did resemble the defendant, but stood by his identification of Alan Crowtzer, the defendant, as the man who robbed the store.

APPENDIX B

Verdict Sheet

Subject Number: _____

Please consider the evidence presented to you. Then, make a judgment as you would if you were passing final judgment on this particular case.

On the case against Alan Crowtzer, do you find the defendant:

1. Clearly not guilty
2. Not guilty
3. Somewhat not guilty
4. Somewhat guilty
5. Guilty
6. Clearly guilty

APPENDIX C

Case Summary with Extraneous Details

Please completely read this summary. Pay careful attention to the details in the summary.

Court Case Summary

The crime to be tried is of Alan Crowtzer, a 28-year old male, who was indicted for the armed robbery of a local convenience store.

The local convenience store was robbed at gunpoint on September 26, 2007. At 7:03 P.M., a heavy-set dark-skinned black male matching the defendant‘s description entered the convenience store wearing a hooded jacket. He approached the counter, lifted his hood onto his head and proceeded to rob the manager of the store at gunpoint. The suspect, and his ―look out," fled with an undisclosed amount of money in a gold Jeep Cherokee.

The prosecution contends that the defendant robbed a convenience store at gunpoint. The evidence presented by the prosecution included a positive identification of the defendant by the store clerk in a police line-up. The police also found money in the defendant‘s closet that was very close to the amount reported stolen.

The defense claimed that the defendant was in the convenience store as a customer earlier that day, and that the defendant‘s long-time girlfriend provided an alibi indicating that he was not present at the store at the time of the robbery. She testified the defendant was watching a movie with her at her house. The defense also claimed that the gun registered in the defendant‘s name was stolen several years earlier, though no police

report was ever made. The defense also claimed that the money in the closet represented savings from the defendant‘s job. The defense contends that the defendant has no prior criminal record and no history of violence. He is an upstanding member of the community and attends church every Sunday. He is also a student at the local university with many friends in the area. The defense also contends that the convenience store in question has been robbed four times in the last year, and that his client was not implicated in those robberies.

The eyewitness, an Indian man who served as the cashier on the night of the incident, positively identified the defendant as the man who robbed the convenience store the night of September 26, 2007. He was very confident in his identification. He stated that he would never forget the defendant‘s face or the type of gun used during the robbery. He stated that he feared for his life during the robbery and that is why he gave up the money. He rebuked the defense‘s notion that the defendant was in the store earlier on the same day, although he acknowledged that he didn‘t remember the face of every person who walked in the store that day. He was then shown a photograph of a man who was known to be in the store earlier that day, before the robbery was committed. The eyewitness stated that the man did resemble the defendant, but stood by his identification of Alan Crowtzer, the defendant, as the man who robbed the store.

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