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Biased Memory, Biased Verdicts:  
Memory Effects in Juror Judgments

Kristi A. Costabile

Ohio State University

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## Introduction

Researchers have long examined the strategies used by jurors to evaluate a defendant's guilt or innocence (for a review, see Hastie, Penrod, Pennington, 1983). The present chapter discusses how the juror decision-making task can be conceptualized as a specific example of a more general class of processing tasks referred to by Srull and colleagues as "comprehension-set objectives" (e.g., Lichtenstein & Srull, 1987; Wyer & Srull, 1986). This model specifies that tasks requiring comprehension encourage evaluators to understand each item of information as presented and provide a global evaluation of the information only when requested to do so, at which time the judgment is computed on the basis of items most readily accessible in memory. The present chapter explores the utility of applying this processing strategy to juror judgments and discusses the implications of comprehension-set objectives for legal decision making. In so doing, this chapter outlines how such memory-based judgments could be subject to memory biases, distortions, and errors.

### A Juror's Perspective

Consider the following scenario: One afternoon, Alice Parker is unexpectedly assigned to decide the fate of a complete stranger. She is instructed that her decision must be just, fair, and right. Despite feeling overwhelmed by this task, Alice is not given a choice as to whether she is willing to take on this responsibility. It is her duty.

Alice is told that her decision is simple. She is to decide whether the defendant in a given trial is guilty of the accused crime. After hearing her instructions, Alice is confounded by the discrete black-and-white nature of her decision and dedicates herself to making the correct decision. Before rendering her verdict, she is subjected to days of testimony and speeches in which attorneys and witnesses adversarially debate the merits of the evidence. The articulate, educated, and well-groomed performers stand, sit, and pace about the room, loudly pontificating in Alice's general direction. Alice is given no opportunity to ask questions or receive clarification on the statements provided. As such, she feels the information is presented haphazardly, without regard for chronological or causal order. Additionally, with no familiarity with the subject matter of the trial, she finds the speakers' language to be abstruse, technical, and confusingly complex. When the attorneys complete their dazzling wordplay, Alice is summarily dismissed to finalize her decision with a group of others. The group is not given instructions or guidance as to how to arrive at a decision, told simply that all twelve individuals must agree on a single verdict. Entering the deliberation room, she looks around tentatively. Twenty-two confused and wary eyes meet her own.

There are a number of theories and models posited to describe how jurors evaluate, synthesize, and weight the vast amount of information presented at trial when deciding on final verdicts (see Hupfeld-Heinemann & Helversen, this volume). Some researchers argue that jurors

construct a narrative of the trial information and use this story when selecting a verdict (Pennington & Hastie, 1992); others posit that jurors evaluate the defendant's guilt upon hearing the first piece of trial evidence and then adjust this initial judgment as new testimony is given (i.e., anchor-and-adjustment model, Chapman & Bornstein, 1996). Other scholars use social decision schemes (Kerr, Niedermeier, & Kaplan, 1999), linear discrepancy models (e.g., Boster, Hunter, & Hale, 1991), Bayesian models (e.g., Duggan & Martinelli, 2001), or mathematical calculations (e.g., Kerr, 1981; Penrod & Hastie, 1980) to uncover the strategies used to determine the defendant's guilt or innocence.

Juror decision making models often involve cognitive processes and strategies similar to those used in other decision-making situations (e.g., Hastie, Penrod, Pennington, 1983); however, a juror's task is unique. It cannot be easily equated with that of a company president deciding where invest funds, or of a consumer selecting a high-definition television set, or of a woman using an internet dating service to find potential suitors. Unlike other decision-makers, jurors are vested with the responsibility to make a decision regarding a subject matter of which they are intentionally naïve while using a manner of deliberation of which they are inexperienced. Additionally, the correctness of their decision will likely never be known. Unlike other decision-makers, jurors must render a verdict under the assumption that their decision will likely be final – and that errors in judgment will not likely be discovered or remedied. A jury, then, consists of a group of novices who are provided only minimal information about the case and given little instruction as to how to use the presented information when deciding upon a verdict (Kassin & Wrightsman, 1988). As Johnson (1993) writes,

“The rules and procedures used to govern the conduct of jury trials reflect a great deal of faith in jurors' ability to understand and retain information over long periods of time, often with much intervening information. Jurors are expected to

operate as passive recipients of information presented by the parties and generally are prohibited from taking notes, asking questions, or using other potentially memory-enhancing tools. . . . From this impoverished learning environment jurors are expected to recall the evidence and testimony presented at trial, recall the judge's instructions about the law applicable to the case, and reach a rational conclusion regarding the proper verdict in the case (p. 605)."

So, how might jurors approach their decision-making task? A "good" juror might listen attentively to the testimony and arguments provided during the trial. As witnesses are examined, the juror might consider each statement carefully with the goal of comprehending the information provided and thus, might have difficulty integrating evidence presented by different witnesses into a coherent understanding of the trial events. Additionally, this dedicated juror would likely assume the defendant is innocent until the evidence proved otherwise and would therefore withhold judgment until all information has been presented. The emphasis on withholding judgment differs dramatically from the strategies used in other evaluation tasks in which an evaluator might consider early information to be the most relevant to take into account when making a decision. For example, impression formation goals often enhance attention to early information, and this early information, in turn, colors interpretation of subsequent information (Anderson, 1959). By contrast, the nature of the trial process encourages jurors to remain impartial and thus, cautions against using evidence presented early to inform the interpretation of subsequent information.

#### Comprehension-Set Processing Model of Decision-Making

Together with Stanley Klein, I proposed that the juror decision-making task can be usefully conceptualized as a specific example of a more general class of processing tasks referred to by Srull and colleagues as "comprehension-set objectives" (Costabile & Klein, 2005) .

According to these researchers, tasks that require comprehension encourage the evaluator to focus attention on understanding each item of information as it is presented. Global evaluation of the information target is assumed to be deferred until a judgment is explicitly requested, at which time it is computed on the basis of those items most readily accessible from memory (e.g., Lichtenstein & Srull, 1987; Wyer & Srull, 1986).

For example, in a study by Lichtenstein and Srull (1987), participants were shown a list of behavioral statements attributed to a target person and asked to comprehend each statement as it was presented. After the presentation phase of the study, participants were asked to recall the target's behaviors and then evaluate the target's personality (to control for possible order effects, half the participants performed the judgment task before the recall task). Lichtenstein and Srull reasoned that participants should refrain from forming a summary representation of the target until a judgment was requested, thus, judgments would be based on behavioral evidence retrieved from memory. Because information is easier to recall the more recently it has been encountered (i.e., the recency effect; for a review, see Murdock, 1974), Lichtenstein and Srull further predicted that judgments would disproportionately be influenced by behavioral statements presented late in learning about the target. An analysis of participants' recall and judgment performance strongly supported these predictions (see also Wyer & Srull, 1986). Extrapolating these findings to the domain of juror decision-making predicts a positive correlation would be observed between juror verdict and memory of the evidence presented.

The judicial system regards the members of a jury as impartial, dispassionate, and objective, such that jurors are able to reach the truth of case by correctly weighing the evidence presented by each side of the adversarial system (Findlay, 1988). The impartiality of the jury is considered so integral to ensuring justice that legal safeguards have been put in place to make

certain that jurors are not influenced by factors outside the courtroom (e.g., prejudicial publicity; jury sequestering). However, applying the comprehension-set model to an examination of jury decision making suggests that such safeguards might be insufficient in producing unbiased verdicts: If juror *memories* are fallible, imperfect, or biased, then verdicts based on these memories would be similarly flawed. Biased memories can come from the structure of the evidence (e.g., particularly salient testimony), from extralegal factors (e.g., pretrial publicity), from the jurors themselves (e.g., juror schemata), or from jury deliberation (e.g., incorrect information introduced by fellow jurors). In the present chapter, I hope to elucidate implications of the comprehension-set model by reviewing recent work on juror memory and its impact on legal decision making.

#### *Trial Event Structure*

It is irrational to assume that jurors are able to remember all pieces of evidence presented during a trial. With such a vast amount of complex information presented during modern trial proceedings, the hope is that individual jurors will be able to weight the evidence in such a manner as to facilitate memory of important trial events and information (Findlay, 1988). However, being inexperienced with trial events, jurors often are unable to discern important evidence (i.e., that which should be used when deciding on a verdict) from less important evidence (i.e., that which is irrelevant to the decision-making process). In this section, I outline how the structure of the trial proceedings could influence the recollection and integration of trial information and how these memories guide juror verdicts. Taken together, this work provides a strong foundation suggesting that the comprehension-set model can be fruitfully applied to the examination of juror judgments.

*Evidence salience.* In my own work, I have found consistent evidence in support of the comprehension-set model as a cognitive process used in juror decision making (Costabile & Klein, 2005). In a series of experiments, we had participants read a summary of a murder trial in which the defendant was charged with two counts of first-degree murder. The trial transcript (adapted from Kassin and Sommers, 1997) described the fictional case of *New York v. Bradley Givens*, in which Givens was accused on murdering his estranged wife and her neighbor in a jealous rage. The prosecution argued that Givens became enraged when his wife asked for a separation such that, when he found his wife with a neighbor, the defendant became enraged, strangling his wife and stabbing the neighbor. Givens then fled, disposed of his knife, and called a friend to help with the situation. On the opposing side, the defense attorney argued that Givens arrived home and found the victims already dead. After unsuccessfully trying to revive the victims, Givens ran from the house in shock. After a few minutes, Givens called the police and waited for them to arrive.

For the most part, the evidence presented in trial was largely circumstantial: A private investigator testified that Givens appeared jealous, but clearly loved his wife; a coroner testified that the murder weapon was readily available; a witness testified that he saw a person who resembled the defendant run from the house with something in his hand, but he could not see the assailant's face. However, we presented the participants with one piece of evidence that was undisputedly incriminating: A confession from the defendant. A police officer testified that a tape recording from an unrelated case recorded Givens' phone call to a friend minutes after the defendant fled the scene. In this recorded conversation, Givens can be heard saying "I killed Marylou and some bastard she was with... God, I don't, yeah, I ditched the blade."

In our experiments, this critical evidence was presented by either the first or last witness testifying for the prosecution. We found that when this incriminating information was presented late in the trial, mock jurors were more likely to render guilty verdicts than when this same information was presented early in the trial. Follow-up experiments revealed that this recency effect was found whether the incriminating evidence was ruled admissible (judge instructed jurors that evidence could be used when deciding on a verdict) or inadmissible (instruction to ignore the evidence when deciding on a verdict). In support of the comprehension-set model, the observed recency effect appeared to be due to jurors' memory of trial events: The confession was more likely to be remembered by mock jurors when it was presented late in the trial and thus, more likely to influence juror verdicts. Interestingly, we found that when the confession evidence was ruled inadmissible by a judge because it is unreliable (e.g., poor recording quality made it difficult to distinguish the voices), order effects were not observed, providing further evidence that jurors were sensitive to the motives underlying judges' instructions (see also Kassin and Sommers, 1997).

Similar results were obtained by Kerstholt and Jackson (1998) who manipulated whether participants read statements by the defense witnesses first, followed by the prosecution witnesses, or the reverse. When mock jurors rendered judgments after hearing all witness statements, they were more likely to side with the side that presented its witnesses last. Kerstholt and Jackson conclude that when jurors were not instructed to form on-line judgments, they spontaneously used a memory-based strategy to determine a verdict.

However, evidence order is merely one way to influence evidence memorability. Reyes, Thompson, and Bower (1980) argue that the relative availability of trial evidence in short term memory could also be influenced by the concreteness or vividness of its description. The

researchers argue that phrases that evoke vivid mental imagery are better remembered than abstract, pallid words (see Paivio, 1971). To test this hypothesis, mock jurors read a series of legal arguments that described the case of an individual who was charged with driving under the influence of alcohol after the defendant's car collided with a garbage truck while driving home after a party.

The stimuli consisted of nine prosecution arguments and nine defense arguments in alternating order. Each argument had both a vivid version and a pallid version, expressing the same evidentiary information but with different levels of specificity and elaboration. For example, one argument implying the defendant was intoxicated shortly before leaving the party (prosecution evidence) had a pallid version: *On his way out the door, Sanders staggered against a serving table, knocking a bowl to the floor*; and a vivid version: *On his way out the door, Sanders staggered against a serving table, knocking a bowl of guacamole dip to the floor and splattering guacamole on the white shag carpet*. The same was done for defense statements created to imply that the defendant was not intoxicated during the collision. One plain argument was: *The owner of the garbage truck admitted under cross-examination that his garbage truck is difficult to see at night because it is grey in color*. The vivid version of this argument retained this evidence and added the line: *The owner said his trucks are grey "Because it hides the dirt" and he said, "What do you want, I should paint them pink?"* Half of the participants read vivid versions of the prosecution evidence and plain versions of the defense evidence; the others read the vivid versions of the defense and plain versions of the prosecution.

As anticipated, the researchers found that after a delay participants recalled disproportionately more vivid arguments. Moreover, the more easily available (i.e., recallable) arguments influenced ratings of the defendant's guilt: Participants in the vivid prosecution

condition judged the defendant as more guilty than did those in the vivid defense condition, suggesting that memorable testimony has the greatest impact on juror judgments.

*Evidence integration.* The comprehension-set model of juror judgments suggests that the disproportionate influence of memorable evidence results from jurors' difficulty integrating evidence across trial testimony, a hypothesis supported by recent empirical work. Mallard and Perkins (2005) presented mock jurors with a trial transcript summary describing a case in which the defendant is accused of murdering his ex-wife and her lover. In their materials, Mallard and Perkins chose one witness to present both admissible and inadmissible evidence (each type of evidence was presented on a separate page in the summary, shown as individual pieces of evidence). The investigators expected to find evidence of source effects, with jurors told to disregard one piece of evidence from a source, also disregarding the admissible evidence presented by same source. Instead, participants appeared to consider each piece of evidence in isolation, suggesting that jurors have difficulty integrating trial evidence, even among information presented by a single source.

In a similar vein, Devine and Ostrom (1985) were interested in how individuals evaluate source credibility in a criminal trial setting in which multiple sources (i.e., witnesses) provide multiple pieces of trial information. The authors presented mock jurors with a trial transcript in which either the identity of the witnesses was made salient (e.g., witnesses were questioned one at a time and separately from other witnesses, as is the standard examination process in American courtrooms) or the topic of evidence issues was made salient (e.g., all witnesses were questioned about one evidential issue, such as motive, at the same time). Additionally, three of the witnesses provided consistent evidence that the defendant was guilty; and one witness provided evidence that the defendant was innocent but bore a special relationship with the

defendant (i.e., a sibling), rendering her testimony potentially discountable. The researchers found that jurors were able to take the source's motives for providing testimony into consideration, but only when they encoded source characteristics during initial exposure to trial evidence. The witness-focused jurors and the issue-focused jurors had essentially the same factual information available in memory, but this information appeared to have different meanings depending on the directed focus of attention, suggesting that trial structure greatly impacts jurors' ability to integrate trial events. If unable to successfully integrate evidence into a coherent understanding of trial proceedings, even the most dedicated jurors must base their verdicts upon the evidence brought to mind during juror deliberation – enhancing the reliance on salient or striking trial testimony and potentially reducing the impact of relevant, but pallid witness statements.

#### *Extralegal Effects on Memory*

Legal scholars have long examined the role of extralegal factors on juror verdicts (Kassin & Wrightsman, 1988). In addition to the content of witness testimony and structure of trial proceedings, juror verdicts have been influenced by information gathered from external sources such as cultural stereotypes, pretrial publicity, and physical surroundings. From the perspective provided by the comprehension-set model of juror judgment, I next outline how these extralegal considerations impact jurors' attention, rehearsal, and retention of trial events, thus biasing rendered verdicts.

*Stereotype activation.* Galen Bodenhausen (1988) examined the role of stereotypical information on mock jurors' cognitive processing of trial evidence. Bodenhausen & Lichtenstein (1987) argue that in the process of making a judgment, a stereotype could be used as 'a central theme' around which evidence is organized, such that stereotype-consistent evidence is carefully examined whereas inconsistent information is neglected. To test this theory, Bodenhausen

(1988) asked participants to play the role of jurors assigned to evaluate the guilt of a defendant accused of criminal assault. The defendant was given an ethically nondescript name (i.e., a name that should not have activated stereotypes) or given a Hispanic name (i.e., a name expected to activate a stereotype of Hispanic individuals). Additionally, the trial evidence was presented either before the defendant's name was provided or after the name was given. After reading the case materials, subjects made judgments of the defendant's guilt and were asked to recall the case information. Bodenhausen (1988) found that when the stereotypical name was provided before case evidence, mock jurors exhibited biased processing of evidence, such that stereotype-consistent information was given increased attention, rehearsal, and elaboration. Additionally, these participants recalled more incriminating than exonerating evidence relating to the defendant. By contrast, mock jurors in the evidence-first condition recalled more exonerating than incriminating evidence, demonstrating that extralegal information can impact juror memories for the trial events, which in turn affects the verdicts rendered.

Knippenberg, Dijksterhuis, and Vermeulen (1999) examined whether the influence of stereotype information would be moderated by mock jurors' level of cognitive capacity when encoding trial evidence. The researchers hypothesized that negative stereotype information would enhance memory for incriminating evidence and reduce memory for exonerating evidence if the mock juror is under high cognitive load, but these effects would be attenuated if the juror has sufficient cognitive capacity to correct for such biases. To test this hypothesis, mock jurors read a description of a criminal case (e.g., breaking and entering of a private home and the theft of various items). The experimenters introduced the suspect by describing him as either a "bank employee" who was regarded by his boss as a "respectable and trustworthy employee" (i.e., invoking a positive stereotype) or as a "hard drug addict" who served a jail sentence for burglary

(i.e., negative stereotype). To manipulate cognitive capacity, participants were able to read through the criminal case description at their own pace (high capacity) or were paced through the case at a fixed, rapid rate (low capacity). The researchers' predictions were supported: Under low cognitive capacity conditions, the negative stereotype information increased recall of incriminating evidence compared to when jurors received positive stereotype information; however, for mock jurors with high cognitive capacity, stereotype valence did not differentially affect memory for incriminating evidence. Additionally, for those in the low cognitive capacity conditions, a negative stereotype evoked higher probability of guilt estimates, a greater number of guilty verdicts, and harsher recommended sentences for the defendant; effects absent under high capacity conditions.

These findings are particularly alarming since jurors in actual courtrooms are not able to dictate the pace of trial procedures. Thus, the vast amount of information presented at a rapid or cognitively-exhausting rate, as in standard trial procedures, may encourage jurors to rely upon stereotype-consistent information when making verdict decisions rather than on the merits of the case presented. Accordingly, defendants who appear to stereotypically "match" with their accused crime may be more likely found guilty than individuals with group memberships that have a "stereotype-mismatch" with the accused crime.<sup>1</sup>

*Pretrial publicity.* Not all trial events are confined to the courtroom. Studies have shown that pretrial publicity biases jurors despite their subsequent exposure to hard evidence, judge's instructions, and deliberation (Kassin & Wrightsman, 1988). For example, Kramer, Kerr, and Carroll (1990) showed mock jurors either neutral or prejudicial newspaper clippings about a criminal case before viewing the experimental trial. Although participants were advised to base

their decisions solely on the evidence as presented in court, prejudicial publicity increased the conviction rate from 33% to 48%.

Research by Honess, Charman, and Levi (2003) indicates that the biasing effects of pretrial publicity may be driven by jurors' attention and retention of trial elements. Using video simulation of a well-publicized fraud case, the researchers found that mock jurors who recalled more affectively-laden incriminating pretrial publicity had increased confidence that the defendant was guilty. This effect was mediated by mock jurors' subsequent reasoning about the evidence presented by witnesses in the courtroom, suggesting that the pretrial information affects jurors' encoding of trial evidence, which accordingly guides rendered verdicts.

*Context of judgment.* Extralegal factors have been shown to impact juror memory during both the encoding and retrieval of relevant information. For example, Higgins and Lurie (1983) found that the evaluative context present at encoding had a direct effect on memory of trial events. Participants read about a trial judge's (Judge Jones) sentencing decisions for various criminal offenses in the context of other judges who consistently gave either higher sentences or lower sentences than Judge Jones. The researchers found that recall of Judge Jones' sentencing decisions assimilated toward the context provided when initially learning about the judge's decisions. Follow-up work by Higgins and Stangor (1988) found that the evaluative context at retrieval similarly biases event memory. This work suggests that juror memories can be influenced by the evaluative context present in both the courtroom and the deliberation room, indicating that jury verdicts might be due to temporarily-induced cognitive biases (e.g., primes) created by the physical surroundings or recent experiences, rather than on the legal evidence.

*Juror Characteristics*

A great deal of research has examined how individual personality characteristics might predict juror verdicts (e.g., Boyll, 1991; Kassin & Wrightsman, 1988). Differences among juror verdicts have been attributed to authoritarianism (Bray & Noble, 1978), borderline personality traits (Watson, Ross, & Morris, 2003), social alienation (Claghorn, Hays, Webb, & Lewis, 1991), among many other individual personality variables. Applying the comprehension-set model to juror decision making suggests that these verdict differences might be due to those qualities that encourage one juror to selectively attend, encode, and retrieve certain trial evidence while overlooking other, equally relevant information, creating a biased memory of trial events. Graziano, Panter, & Tanaka (1990) found that, not surprisingly, mock jurors were unable to process all aspects of trial evidence and accordingly, the researchers proposed that individual difference measures might predict the differential attention and recall tendencies of jurors. Using this perspective to explore the comprehension set model of juror judgments, I outline potential individual difference characteristics that have been examined from a memorial perspective.

*Gender.* In an examination of event memory, Powers, Andriks, and Loftus (1979) found that after observing a complex event (e.g., wallet-snatching; domestic argument), men and women noticed and recalled different aspects of the same situation. Women were more accurate in remembering details pertaining to women's clothing or actions; whereas men had superior recall of the thief's appearance and the overall physical environment. The researchers also examined memory suggestibility by providing participants with a professor's description of the observed incident containing pieces of misleading information. Findings indicated that women were more likely to be misled on details pertaining to male-oriented items; and men were more easily misled on female-oriented items. When applied to the courtroom, this work suggests that

the details of the trial events and crime attended to and recalled by jurors might differ reliably between gender groups.

*Self-schemas.* Self-schemas, or domain-specific self-definitions, provide frameworks for interpreting information about oneself and others (Markus, 1977). Consequently, individuals who are schematic for a particular trait are more likely to attend to schema-relevant information pertaining to this trait and use this information as a basis for judgment and person perception (Markus, Smith, & Moreland, 1985). Green and Sedikides' (2001) examined how self-schemas influence perception of ambiguous target person. Similar to a juror's experience of evaluating the guilt of a target, participants in this experiment were asked to evaluate a target person who performed ambiguous behaviors with regard to the personality trait *independence*. Before taking part in the experiment, participants were classified as either independence-schematic, dependence-schematic, or aschematics. The researchers found that relative to aschematics and dependent-schematics, independence-schematics rated the target as more independent and more likely to behave independently in future situations.

Self-schemas seem to enhance the encoding of schema-relevant events (Keenan, Golding, Brown, 1992; Kendzierski, 1980). Using a self-schema for processing new information provides greater opportunity for rich elaboration, strengthening the memory trace and subsequent retention of such information. Brown, Williams, Barker, and Galambos (2007) found that schematic self-knowledge is regularly used as an index of frequency estimates of previous events. This line of research suggests that the varied self-schemata of individual jurors guide the information processing strategies used when hearing witness testimony and arguments. And, as suggested by the comprehension-set model of juror judgments, these self-definitions direct the recollection of evidence and thus juror verdicts.

*Authoritarianism.* In attempting to understand the atrocities of Nazi Germany, Theodor Adorno and colleagues (1950) first examined the concept of authoritarian personality. In its extreme form, people who score high on the measure tend to be cognitively rigid, politically conservative, and considerably punitive. As a result, legal scholars have often explored the relationship between authoritarianism and juror decision making (Kassin & Wrightsman, 1988). For example, Bray and Noble (1978) found that mock jurors who were highly authoritative were significantly more likely to believe the defendant to be guilty than those who were low on the measure. With regard to memory of trial events, Garcia and Griffitt (1978) provided participants with the well-known case of Patricia Hearst, an American heiress who was kidnapped in 1974 and who ultimately aided her captors' in a bank robbery. The researchers found that authoritarian participants recalled more prosecution evidence than defense evidence, a memorial distinction that was not found among those low in authoritarianism. In a closer analysis of the evidence recalled, Berg and Vidmar (1975) found that authoritarian mock jurors recalled more evidence relating to the defendant's character; whereas those who were low on authoritarianism were more likely to recall situational evidence.

*Public self-consciousness.* Individuals who are high on dispositional public self-consciousness tend to focus attention on how they are perceived by others, and thus, attend to aspects of themselves that can easily be examined by others, such as physical appearance (Buss, 1980). This attentional focus can lead to memorial biases: In a word recognition test, participants high in public self-consciousness incorrectly identified words relating to their ideal, public self as being presented than those low in public self-consciousness, suggesting that increased attention and elaboration were given to public self-related words (Nasby, 1997).

A state of public self-awareness can be created in individuals if they feel they are being observed (Buss, 1980). Kassin (1984) manipulated public self-consciousness by introducing television cameras into the courtroom to examine whether filming would reduce jurors' ability to attend to trial evidence. Mock jurors watched a videotape of a civil trial in the presence or absence of a camera filming the proceedings. Kassin found that filming impaired recall of trial evidence. Interestingly, the greatest impairment was found for those individuals who were low in dispositional public self-consciousness, perhaps because these participants were distracted by the situationally-induced self-consciousness, a state to which they have little experience and thus, few coping strategies to use in such circumstances.

This work suggests that individual personality characteristics alter the way in which jurors perceive, interpret, and remember witness testimony. Because evidence memory forms the basis of juror verdicts, these findings indicate one reason why different jurors observing the same trial events might render widely disparate judgments. In the next section of this chapter, I outline how these individual juror memories might be affected by jury discussion and deliberation.

### *Jury Deliberation*

The claim that jurors have imperfect memories is neither surprising nor new (e.g., Bodenhausen, 1988; Greene, 1981; Kassin & Wrightsman, 1988). However, the American legal system has never been particularly concerned about flawed recall of trial events, assuming the deliberation process corrects for memory errors (Pritchard & Keenan, 2002). Evidence of this assumption can be found in the case report from *Apodaca et al v. Oregon* (1972), "Because they have imperfect memories, the forensic process of forcing jurors to defend their conflicting recollections and conclusions flushes out many nuances which otherwise would go overlooked"

(qtd. in Prichard & Keenan, 2002, p. 389). This quotation begs the empirical question, does jury deliberation attenuate juror memory biases?

*Deliberation and biases.* Early research suggested that juries were, in general, less biased than individual jurors. Kaplan and Miller (1978) manipulated the “obnoxiousness” of an attorney’s presentational style and found that obnoxiousness had less effect on verdicts rendered after deliberation than it had on individual juror verdicts prior to deliberation. Hence, the researchers concluded that the process of jury deliberation results in relatively less weight being placed on extralegal, biasing information and more weight on appropriate trial information (i.e., the evidence), causing jury verdicts to be less biased than those rendered by individual jurors. However, recent work suggests that the attenuation of biasing information might only occur when the outcome of the case is obvious and straightforward. Kerr, Niedermeier, and Kaplan (1999) provided mock jurors with incriminating or exonerating news articles (i.e., pretrial publicity) prior to hearing an only moderately strong case against the defendant. When given ambiguous evidence, jury deliberation actually *enhanced* reliance on the biasing pretrial information.

*Deliberation and memory.* Extending this work to explore the role of deliberation on memory correction, Ruva, McEvoy, and Bryant (2007) found that mock jurors who incorrectly misattributed the source of incriminating pre-trial information as being presented in the courtroom as trial evidence (and thus believed the evidence was admissible to consider when deciding on a verdict) were more likely to find the defendant guilty than those who correctly remembered the information was presented outside the courtroom (and thus inadmissible). The researchers found that jury deliberation did not correct source memory errors for pretrial publicity and thus did not correct for the verdict errors based on this prejudicial information.

An examination of discussion patterns among group members by Garold Stasser and his colleagues (Stasser, Taylor, & Hanna, 1989; Stasser & Titus, 1985; 1987) found little evidence of the educational function of group discussion. In general, the researchers found that groups were more likely to discuss information that is known to all group members than to discuss information known only to a single member. In one experiment, college students were given descriptions of potential student-body presidential candidates before meeting in four-person groups to decide upon the candidate best suited for the position (Stasser & Titus, 1987). Prior to group discussion, individual members were provided with both shared (information given to all group members) and unshared information (given to only one member of the group). The researchers found that post-discussion recall of group members provided little evidence of members receiving or recalling any information that they did not have before discussion. Additionally, recall was biased in favor of information supporting the group decision (Stasser & Titus, 1987), suggesting that group discussion can actually introduce new memory biases.

The current trial structure appears to impede information sharing among jurors, as suggested by a set of experiments by Kaplan and Miller (1977). In their experiments, mock juries listened to a tape-recording of evidence presented in a courtroom trial. The researchers varied the order of evidence presentation as a means of manipulating the relative availability of information in memory for each juror, such that in half of the juries, all jurors heard the evidence presented in the same (homogeneous) order; in the remaining juries, each juror heard the facts in a different (heterogeneous) order. Kaplan and Miller found that a greater variety of facts were shared and recalled during group discussion under heterogeneous order condition and accordingly less group polarization was observed compared to the homogeneous order condition. Moreover, in support of the comprehension-set model of juror decision making, the researchers

concluded that differential memory seemed to be the mechanism producing the variety of information shared during group discussion, and thus enhancing discussion-induced judgment shifts.

Using the traditional homogeneous order presentation of evidence, Pritchard and Keenan (2002; 1999) also found little evidence of deliberation correcting or completing individual juror memory biases. The researchers found that most jurors did not feel they had memory gaps and therefore did not use the deliberation process to improve their memories. Additionally, those jurors who controlled the deliberation process did not always have most accurate recall of trial information. Moreover, the jurors who changed verdicts as a result of deliberation were not the ones with the least accurate memories, but were the jurors with the least confidence in their memories of trial information.

Landstrom, Granhag, and Hartwig (2005) provide further support that jurors have misconceptions as to the accuracy and completeness of their recollections of trial events. Mock jurors watched either live trial testimony or a videotape of the witnesses providing trial testimony. The researchers found that live observers believed they had more accurate memories of the witnesses' statements compared to video observers and subsequently evaluated the more easily recalled statements as more convincing than the video observers. However, objective memory performance showed that the live observers' optimism was unfounded: No memory differences were observed between conditions.

Equating memory confidence with accuracy appears to be widespread. Brigham and Bothwell (1983) found that fifty-six percent of prospective jurors surveyed believed witness confidence was positively associated with identification accuracy. Similar estimates were found in a survey of attorneys, with sixty-four percent indicating that identifications by confident

eyewitnesses were likely to be correct (Rahaim and Brodsky, 1982). Lab experiments corroborate these findings indicating that mock juror judgments were dramatically influenced by witness confidence, such that nearly four of five mistaken identifications were believed (Penrod & Cutler, 1995; Wells, Lindsay, and Ferguson, 1979).

#### Potential Remedies for Biased Memories

The comprehension-set model underscores the role of juror memory in guiding final judgments and highlights the importance of enhancing accurate recollections of trial events. Recent empirical work has considered a variety of strategies to enhance the ability to adjudicate complex legal cases, such as simplifying legal language (Goodman & Greene, 1989), providing jurors with substantive, case-specific instructions prior to the presentation of evidence (ForsterLee, Horowitz, & Bourgeois, 1993); and allowing jurors to take notes during the trial (Rosenhan, Eisner, & Robinson, 1994).

In a series of experiments, Lynne ForsterLee and Irwin Horowitz (1997) aimed to explore successful and ecologically valid strategies for increasing juror competence, including note-taking behavior and judicial instructions. In many state and federal courts in the United States, jurors are prevented from taking notes during the trial presentation; yet, jurors who were permitted to take notes reported greater satisfaction with their verdict decision (Flango, 1980). To empirically evaluate these claims, FosterLee & Horowitz allowed half of their mock jurors to take notes while watching a videotape of a cognitively-dense trial, while remaining jurors were not permitted to take notes. Moreover, some participants were provided with specific judicial instructions regarding how to calculate compensatory damages (e.g., *If the defense is found to be negligent, plaintiffs should be compensated; Plaintiffs have the burden of proof.*) either before or after hearing the trial testimony. The researchers found that jurors' ability to distinguish among

the differentially injured plaintiffs and render appropriate awards was enhanced by note-taking *and* exposure to pre-instructions. Analyses of recall measures revealed that note-takers remembered more probative evidence than those who did not take notes, a difference that was exaggerated when jurors were also given judicial instructions prior to hearing the trial testimony. Analyses of juror notes showed that, as expected, pre-instructed jurors wrote more comments about relevant plaintiff symptoms than did those jurors who were post-instructed. ForsterLee and Horowitz (1997) concluded that juror competence was augmented when jurors were provided with the tools necessary to cope with the increasing demands of modern trials.

In addition to providing participants with an opportunity to take notes, Smith (1991) found that the juror information processing and recall of trial-relevant information could be improved through small changes in courtroom procedures. In the United States, the judge presents jurors with legal instructions *after* exposure to the evidence to ensure that the jurors have the instructions in mind during deliberation. Smith (1991) argues that learning the rules of evidence *prior* to hearing trial evidence would provide an appropriate knowledge structure for evidence processing (i.e., schema, Bransford & Johnson, 1972), thus enhancing the jurors' ability to identify and remember relevant facts. This schema focuses jurors' attention on relevant trial information (e.g., defendant's state of mind), and reduce attention given to irrelevant facts (e.g., defendant's employment prior to arrest). To test her hypothesis, participants watched a two-and-a-half hour videotaped reenactment of a homicide trial in which the defendant was charged with first-degree murder. She found that jurors who were given judicial instructions both before and after hearing trial evidence showed enhanced integration of witness testimony and the rules of evidence, suggesting that the judicial instructions provided a useful framework for encoding and retrieving trial information. A similar procedural adjustment is proposed by ForsterLee and

colleagues (2000) who argue that providing jurors with written statements of expert witness testimony prior to hearing the testimony would facilitate jurors' ability to comprehend and thus, correctly use complex expert testimony.

The impact of biased memory on juror verdicts can be insidious. As mentioned earlier, jurors do not realize that their memories are imperfect; in fact, jurors with the greatest confidence in their memory of trial evidence were not the ones with the best retention (Pritchard & Keenan, 2002). As such, Pritchard and Keenan suggest that jurors should be warned against interpreting confidence in fellow jurors as an indication of superior retention. Moreover, jurors should be encouraged to review trial evidence during deliberation rather than assume that their memories are intact. Taken together, the measures described in this section of the chapter might help to reduce the influence of biased or flawed memories on legal judgments.

#### Concluding Comments

The criminal justice system characterizes the ideal juror as a passive audience, encoding trial events verbatim and using all relevant information during verdict deliberation (Devine and Ostrom, 1985). However, as evidenced in the work summarized in this chapter, this ideal juror does not exist. Jurors are unable to successfully encode, comprehend, and retrieve the entire contents of observed trial proceedings and therefore, they must rely upon biased and imperfect memories to form the basis of their final verdicts. The comprehension-set model posits one reason why this might be the case: Jurors are intent on comprehending each piece of complex trial testimony given and suspend judgment until a verdict is requested. As such, juror judgments are based on a retrospective analysis of the specific evidence stored in memory, memory that might be biased by the order of the trial testimony, pretrial publicity, juror schemata, or even the deliberation process itself. The work described in this chapter suggests

that juror verdicts will necessarily be biased, flawed, and imperfect until efforts are made to enhance juror recall of evidence. In the meantime, even the most dedicated juries might unwittingly base their verdicts on the most flamboyant, riveting, and memorable testimony – rather than on the evidence most relevant to the trial proceedings.

## References

- Adorno, T. W., Frenkel-Brunswik, E., Levinson, D. & Sanford, R. N. (1950). *The Authoritarian Personality*. New York: Harper & Row.
- Anderson, N. H. (1959). Test of a model for opinion change. *Journal of Abnormal and Social Psychology, 59*, 371-381.
- Berg, K. S., & Vidmar, N. (1975). Authoritarianism and recall of evidence about criminal behavior. *Journal of Research in Personality, 9*, 147-157.
- Berry, D. S. & Zebrowitz-McArthur, L. (1988). What's in a face? *Personality and Social Psychology Bulletin, 14*, 23-33.
- Bodenhausen, G. V. (1988). Stereotypic biases in social decision making and memory: Testing process models of stereotype use. *Journal of Personality and Social Psychology, 55*, 726-737.
- Bodenhausen, G. V. & Lichtenstein, M. (1987). Social stereotypes and information-processing strategies: the impact of task complexity. *Journal of Personality and Social Psychology, 52*, 871-880.
- Boster, F. J., Hunter, J. E., Hale, J.L. (1991). An Information-Processing Model of Jury Decision Making. *Communication Research, 18*, 524-547.
- Boyll, J. R. (1991). Psychological, cognitive, personality and interpersonal factors in jury verdicts. *Law & Psychology Review, 15*, 163-184.
- Bransford, J. D., & Johnson, M. K. (1972). Contextual prerequisites for understanding: Some investigations of comprehension and recall. *Journal of Verbal Learning and Verbal Behavior, 11*, 717-726.

- Bray, R. M. & Noble, A. M. (1978). Authoritarianism and decisions of mock juries: Evidence of jury bias and group polarization. *Journal of Personality and Social Psychology*, 36, 1424-1430.
- Brigham, J. C., & Bothwell, R. K. (1983). The ability of prospective jurors to estimate the accuracy of eyewitness identification. *Law and Human Behavior*, 7, 19-30.
- Brown, N. R., Williams, R. L., Barker, E. T., & Galambos, N. L. (2007). Estimating Frequencies of Emotions and Actions: A web-based diary study. *Applied Cognitive Psychology*, 21, 259-276.
- Buss, A. H. (1980). *Self-consciousness and social anxiety*. San Francisco: Freeman.
- Chapman, G. B., & Bornstein, B. H. (1996). The more you ask for, the more you get: Anchoring in personal injury verdicts. *Applied Cognitive Psychology*, 10, 519-540.
- Claghorn, J., Hays, J. R., Webb, L., & Lewis, N. (1991). Juror personality characteristics and the insanity defense. *Forensic Reports*, 4, 61-65.
- Costabile, K. A. & Klein, S. B. (2005). Finishing Strong: Recency effects in juror judgments. *Basic and Applied Social Psychology*, 27, 47-58.
- Devine, P.G. & Ostrom, T. M.(1985). Cognitive mediation of Inconsistency Discounting. *Journal of Personality and Social Psychology*, 49, 5-21.
- Duggan, J. & Martinelli, C. (2001). A Bayesian Model of Voting in Juries. *Games and Economic Behavior*, 37, 259-294.
- Findlay, M. (1988). The role of the jury in a fair trial. In M. Findlay & P. duff (Eds.), *The jury under attack*. Sydney, Australia: Butterworths, 161-172.
- Flango, V. E. (1980). Would jurors do a better job if they could take notes? *Judicature*, 63, 436-443.

- ForsterLee, L. & Horowitz, I. A. (1997). Enhancing Juror Competence in a Complex Trial. *Applied Cognitive Psychology, 11*, 305-319.
- ForsterLee, L., Horowitz, I. A., Athaide-Victor, E., & Brown (2000). The bottom line: The effect of written expert witness statements on juror verdicts and information processing. *Law and Human Behavior, 24*, 259-270.
- ForsterLee, L., Horowitz, I. A., & Bourgeois, M. J. (1993). Juror competence in civil trials: The effects of preinstruction and evidence technicality. *Journal of Applied Psychology, 78*, 14-21.
- Garcia, L., & Griffitt, W. (1978). Evaluation and recall of evidence: Authoritarianism and the Patty Hearst case. *Journal of Research in Personality, 12*, 57-67.
- Goodman, J. & Greene, E. (1989). The use of paraphrase analysis in the simplification of jury instructions. *Journal of Social Behavior and Personality, 4*, 237-251.
- Graziano, S. J., Panter, A. T., Tanaka, J. S. (1990). Individual differences in information processing strategies and their role in juror decision making and selection. *Forensic Reports, 3*, 279-301.
- Green, J. D., & Sedikides, C. (2001). When do self-schemas shape social perception?: The role of descriptive ambiguity. *Motivation and Emotion, 25*, 67-83.
- Greene, E. (1981). Whodunit? Memory for evidence in text. *American Journal of Psychology, 94*, 479-496.
- Hastie, R., Penrod, S. D., & Pennington, N. (1983). *Inside the jury*. Cambridge: Harvard University Press.
- Higgins, E. T., & Lurie, L. (1983). Context, categorization, and memory: The “change-of-standard” effect. *Cognitive Psychology, 15*, 525-547.

- Higgins, E. T., & Stangor, C. (1988). A "Change-of-Standard" Perspective on the Relations Among Context, Judgment, and Memory. *Journal of Personality and Social Psychology*, 54, 181-192.
- Honest, T. M., Charman, E. A., Levi, M. (2003). Factual and Affective/Evaluative Recall of Pretrial Publicity: Their relative influence on juror reasoning and verdict in a simulated fraud trial. *Journal of Applied Social Psychology*, 33, 1404-1416.
- Hupfeld-Heinemann, J. & von Helversen, B. (in press). Models of decision-making on guilt and sanctions. In M. Oswald, S. Bieneck, & J. Hupfeld-Heinemann (Eds.) *Social Psychology of Punishment of Crime*. London: Wiley Publishers.
- Johnson, M. T. (1993). Memory Phenomena in the Law. *Applied Cognitive Psychology*, 7, 603-618.
- Kaplan, M. F. & Miller, C. E. (1977). Judgments and group discussion: Effect of presentation and memory factors on polarization. *Social Psychology Quarterly*, 40, 337-343.
- Kaplan, M. F. & Miller, L. E. (1978). Reducing the effects of juror bias. *Journal of Personality and Social Psychology*, 36, 1443-1455.
- Kassin, S. M. (1984). TV cameras, public self-consciousness, and mock juror performance. *Journal of Experimental Social Psychology*, 20, 336-349.
- Kassin, S. M. & Sommers, S. (1997). Inadmissible testimony, instructions to disregard: substantive versus procedural considerations. *Personality and Social Psychology Bulletin*, 23, 1046-1054.
- Kassin, S. M. & Wrightman, L. S. (1988). *The American Jury on Trial: Psychological Perspectives*. New York: Hemisphere Publishing Corporation.

- Keenan, J. M., Golding, J. M., Brown, P. (1992). Factors controlling the advantage of self-reference over other reference. *Social Cognition, 10*, 79-94.
- Kendzierski, D. (1980). Self-schemata and scripts. The recall of self-referent and scriptal information. *Personality and Social Psychology Bulletin, 6*, 23-29.
- Kerr, N. L., (1981). Social transition schemes: Charting the group's road to agreement. *Journal of Personality and Social Psychology, 41*, 684-702.
- Kerr, N. L., Niedermeier, K.E., & Kaplan, M. F. (1999). Bias in jurors vs bias in juries: New evidence from the SDS perspective. *Organizational Behavior and Human Decision Processes, 80*, 70-86.
- Kerstholt, J. H. & Jackson, J. L. (1998). Judicial decision making: Order of evidence presentation and availability of background information. *Applied Cognitive Psychology, 5*, 445-454.
- Kramer, G. P., Kerr, N. L., & Carroll, J. S. (1990). Pretrial publicity, judicial remedies, and jury bias. *Law and Human Behavior, 14*, 409-438
- Landstrom, S., Granhag, P. A., & Hartwig, M. (2005). Witnesses appearing live versus on video: Effects on observers' perception, veracity assessments, and memory. *Applied Cognitive Psychology, 19*, 913-933.
- Lichtenstein, M. & Srull, T. K. (1987). Processing objectives as a determinant of the relationship between recall and judgment. *Journal of Experimental Social Psychology, 23*, 93-118.
- Mallard, D. & Perkins, D. (2005). Disentangling the evidence: Mock jurors, inadmissible testimony, and integrative encoding. *Psychiatry, Psychology and Law, 12*, 289-297.

- Markus, H (1977). Self-schemata and processing information about the self. *Journal of Personality and Social Psychology*, 35, 63-78.
- Markus, H., Smith, J., & Moreland, R. L. (1985). Role of the self-concept in the perception of others. *Journal of Personality and Social Psychology*, 49, 1494-1512.
- Murdock, B. B. (1974). *Human Memory: Theory and data*. Oxford, England: Lawrence Erlbaum Associates, Inc.
- Nasby, W. (1997). Self-conscious and cognitive prototypes of the ideal self. *Journal of Research in Personality*, 31, 543-563.
- Paivio, A. (1971). *Imagery and verbal process*. New York: Holt, Rinehart, & Winston.
- Pennington, N. & Hastie, R. (1992). Explaining the evidence: Tests of the story model for juror decision making. *Journal of Personality and Social Psychology*, 62, 189-206.
- Penrod, S. & Cutler, B. (1995). Witness confidence and witness accuracy: Assessing their forensic relation. *Psychology, Public Policy, and Law*, 1, 817-845.
- Penrod, S. & Hastie, R. (1980). A computer simulation of jury decision making. *Psychological Review*, 87, 133-159.
- Powers, P. A., Andriks, J. L., & Loftus, E. F. (1979). Eyewitness accounts of females and males. *Journal of Applied Psychology*, 64, 339-347.
- Pritchard, M. E. & Keenan, J. M. (2002). Does jury deliberation really improve jurors' memories? *Applied Cognitive Psychology*, 16, 589-601.
- Pritchard, M. E. & Keenan, J. M. (1999). Memory monitoring in mock jurors. *Journal of Experimental Psychology: Applied*, 5, 152-168.
- Rahaim, G. L., & Brodsky, S. L. (1982). Empirical evidence versus common sense: Juror and lawyer knowledge of eyewitness accuracy. *Law and Psychology Review*, 7, 1-15.

- Reyes, R. M., Thompson, W. C., & Bower, G. H. (1980). Judgmental biases resulting from differing availabilities of arguments. *Journal of Personality and Social Psychology*, 39, 2-12.
- Rosenhan, D.L., Eisner, S.L., & Robinson, R.J. (1994). Notetaking can aid juror recall. *Law and Human Behavior*, 19, 53-61.
- Ruva, C., McEvoy, C., & Bryant, J. B. (2007). Effects of Pre-Trial Publicity and Jury Deliberation on Juror Bias and Source Memory Errors. *Applied Cognitive Psychology*, 21, 45-67.
- Smith, V. L. (1991). Impact of pretrial instruction on jurors' information processing and decision making. *Journal of Applied Psychology*, 76, 220-228.
- Sommers, S. R. & Kassin, S. M. (2001) On the Many Impacts of Inadmissible Testimony: Selective Compliance, Need for Cognition, and the Overcorrection Bias. *Personality and Social Psychology Bulletin*, 27, 10, 1368-1377.
- Stasser, G. Taylor, L. A., & Hanna, C. (1989). Information sampling in structured and unstructured discussions of three- and six-person groups. *Journal of Personality and Social Psychology*, 57, 67-78.
- Stasser, G. & Titus, W. (1985). Pooling of unshared information in group decision making: Biased information sampling during discussion. *Journal of Personality and Social Psychology*, 48, 1467-1478.
- Stasser, G. & Titus, W. (1987). Effects of information load and percentage of shared information on the dissemination of unshared information during group discussion. *Journal of Personality and Social Psychology*, 53, 81-93.

- Van Knippenberg, A., Dijksterhuis, A., & Vermeulen, D. (1999). Judgment and memory of a criminal act: The effects of stereotypes and cognitive load. *European Journal of Social Psychology, 29*, 191-201.
- Wells, G. L., Lindsay, R. C. L., & Ferguson, T. J. (1979). Accuracy, confidence, and juror perceptions in eyewitness identification. *Journal of Applied Psychology, 64*, 440-448.
- Watson, P. J., Ross, D. F., Morris, R. J. (2003). Borderline personality traits correlate with death penalty decisions. *Personality and Individual Differences, 35*, 421-429.
- Wyer, R. S. & Srull, T. K. (1986). Human Cognition in its Social Context. *Psychological Review, 93*, 3, 322-359.

Footnotes

1. This prediction is supported by work that baby-faced defendants are more likely to be perceived guilty of crimes relating to negligent actions, and mature-faced defendants are more likely to be perceived guilty of intentional criminal behavior (Berry & Zebrowitz-McArthur, 1988).