Factors Influencing Juror Decision-Making in a Mock Jury Trial:

Examining the Role of Need for Cognition in Primacy and Recency Effects

A Thesis Submitted in Partial Fulfillment of the Requirements for the

Degree of Master of Science in Applied Psychology

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Submitted October 15, 2003

Abstract

Two studies were conducted to examine influences on juror decision-making in a mock jury task. The order of presentation and strength of arguments for the prosecution and defense were manipulated to test for primacy and recency effects. Assessment of each juror's need for cognition was conducted in order to identify individual differences that may underlie the observed effects of order of presentations and argument strength. Experiment 1 employed a hypothetical court case involving a stabbing. Two-hundred and twenty four subjects participated. Results from an ANOVA and a logistic regression revealed that the strength of the prosecution's arguments had a significant influence on juror's verdict. Furthermore, when assessing the results of the culpability scale, individuals low in need for cognition were more prone to an order effect, whereas those high in need for cognition based their decision on the strength of the arguments presented rather than the order of presentations. In addition to assessing individual's need for cognition, Experiment 2 examined juror's ability through the manipulation of complex and simplified expert testimonies. Two-hundred and eighty eight subjects participated. A simulated criminal case involving a murder was employed. Results of a logistic regression showed strength of arguments had a significant influence on jurors' verdicts. Individuals low in need for cognition were more affected by defense's expert testimony, whereas those individuals high in need for cognition were relatively unaffected by the complexity of the testimonies. Some of these findings are consistent with previous research and may be important factors when determining courtroom persuasion.

Factors Influencing Juror Decision-Making in a Mock Jury Trial:

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Personality and social psychologists have found that differences in persuasion

variables and processes are responsible for inducing attitude change.[1] Early in the 1950s

Hovland and his colleagues at Yale developed the message-learning approach by

examining how different variables affected a person's attention to, comprehension of,

yielding to, and retention of the arguments in a persuasive message (Petty & Cacioppo,

1986). Since then, many theories have been developed on the role of personality factors

and other variables in persuasion (e.g., The Heuristic Systematic Model, Chakien, 1980;

The Elaboration Likelihood Model, Petty & Cacioppo, 1986). These various theoretical

approaches to persuasion can be applied to many forms of persuasive communication in

several settings. For example, research in the areas of multimedia presentations (e.g.,

audio, video and animation; Ottinger, 1993), consumer research (e.g., Evans, 1989;

Friestad & Wright, 1995) and education (e.g., Clark, 2002) have all attempted to identify

persuasion variables relevant to their setting. However in terms of consequences,

persuasion techniques used in a criminal jury trial can have a profound affect on the

outcome of the case. The success of the crown's case and the fate of the defendant lie

upon the juror's responses to the testimony, arguments and evidence conveyed to them by

the prosecution and defense (Stone, 1969).

The decision-making task faced by jurors has received more attention from social

and behavioural scientists than any other comparable judgment task in our society

(Hastie, 1993). Hastie has identified several reasons for exploring jurors' judgments in

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[1] A persuasion variable can be defined as any factor (e.g., source credibility, attractiveness, strength of arguments etc.) which influences the formation or change of an attitude.

studies of decision-making. However, the most notable causes are that the task is complex, isolated from external social influences and primarily based upon the level to which jurors process the materials presented in court. The latter is believed to be influenced by cognitive attributes (i.e., internal processes; Lupfer, Cohen, Bernard & Brown, 1986). In turn, the decision-making task encountered by jurors is believed to be influenced by reasonably stable cognitive attributes in relation to the situation-specific demands of the courtroom environment (Lupfer et al., 1986).

A growing body of research has documented a range of persuasion variables and processes that appear to influence jurors' decision-making. These variables include variations in individual traits (e.g., Lupfer, Cohen, Bernard, & Brown, 1986; Kassin, Reddy, & Tulloch, 1990), jury instructions (e.g., Hart, 1995; Kerwin & Shaffer, 1994; Schuller, Smith, & Olson, 1994; Kassin & Wrightsman, 1979), order of presentations (e.g., Stone, 1969; Walker, Thibaut, & Andreoli, 1972) and quality of arguments and/or testimonies (e.g., Kovera, Borgida, Gresham, Gray, & Regan, 1997; Cooper, Bennett & Sukel, 1996). The pair of studies presented in this thesis will primarily build upon the variations of the order of presentation of the arguments in order to examine the influences on jurors' decision-making using a mock jury trial. Specifically, while using the Elaboration Likelihood Model (Petty & Cacioppo, 1986) as a basis for our theorizing, we will examine the role of need for cognition in an attempt to identify primacy and/or recency effects.

<center>Primacy Effects or Recency Effects</center>

According to the existing literature, a *primacy effect* is obtained when information presented first has the most influence on an individual's opinion. In contrast, if the

influence of the last message predominates, a *recency effect* is achieved. These effects of

order of presentation have been investigated in a variety of persuasion settings. However,

these possible biasing effects have been a concern within the context of a courtroom

setting since at least 1925 when the *Law of Primacy in Persuasion* was formulated by

Lund:

> "While the lawyer of the plaintiff is reviewing his case and
> making his appeal, the belief of the jurors is already in the
> process of formulation, and they are not to be dissuaded
> from their position by an equal amount of evidence or
> persuasive appeal on the part of the defendant's lawyer,
> according to the law of primacy" (p.191).

Therefore, Lund (1925) believed that the side of an issue presented first will have a

greater effect on jurors than the side presented subsequently.

In an attempt to test the primacy theory produced by Lund, Cromwell (1950)

performed a study in which speeches were either opposed to or in support of socialized

medicine and labour arbitration. Subjects' opinions were measured before and after the

talks. Results showed that subjects favoured the side presenting last, suggesting a recency

effect. Hovland and Mandell (1957) obtained more conflicting results after conducting an

entire series of studies in the primacy-recency paradigm on attitude change. According to

one of their studies, which used written communication, only one of the three groups

tested showed a primacy effect whereas the other two showed slight recency effects.

Hovland and Mandell (1957) concluded that their results, in general, produced neither a

primacy effect nor a recency effect and that future research efforts would benefit from

determining the specific factors influencing either effect.

Rather than search for a general law of primacy or recency, Lana (1961)

conducted a series of studies to explore Hovland and Mandell's (1957) ideas. Lana's first

study (1961) tested whether familiarity of an issue influenced a primacy or recency effect. Surprisingly, results indicated primacy effects occurred under conditions of high familiarity whereas recency effects occurred under conditions of low familiarity with an issue. Lana's (1963a) second study provided evidence for a moderating effect of interest level such that subjects who reported high interest in a topic demonstrated a significant primacy effect, whereas subjects who reported having low interest demonstrated a significant recency effect. Lana's (1963b) final study explored issues of controversy, where results showed a significant primacy effect for a high controversy issue such as nuclear weapons, but not for a low-controversy issue such as Picasso. In conclusion, Lana's results revealed that primacy and recency effects are dependent upon the issue at hand and the interest of the individual.

Subsequently, Rosnow and Robinson (1967) argued that simple order effects are not always the most important factors operating in any communication situation. After careful analysis and review of a number of experiments in persuasion, they concluded that controversial topics, interesting subject matter, materials that are very familiar to the receiver and issues that are seen as less important to the receiver are likely to elicit a primacy effect. In contrast, non-controversial topics, uninteresting subject matter, issues unfamiliar to the receiver, and issues that are seen as important are more likely to produce a recency effect.

Despite the series of primacy-recency studies, instead of a general law of primacy or recency, there exists today an assortment of perspectives. Among the variety of perspectives are two hypotheses stemming from cognitive theories proposed to explain the common occurrence of either effect. First, the attention decrement hypothesis

suggests that individuals will generally pay attention to early information rather than later stimuli, resulting in a primacy effect (Steiner & Rain, 1989). If, however, individuals are given a motive to continue to attend to information, a recency effect occurs. As an alternate viewpoint, the consistency hypothesis states that people try to maintain consistent impressions when confronted with relevant information (Gergen & Gergen, 1981). That is, individuals form a first impression from early information; if later information presented is contradictory to the first they change their perceptions (of the later information) to conform to earlier perceptions. This makes the first information encountered more important and produces a primacy effect. However if individuals can be open to new and contradictory information a recency effect results.

The latter hypothesis provides an explanation rooted in attitude strength. Attitude strength has recently provided a plausible account of how primacy and recency effects influence decision-making.

<div align="center">Cognitive Attributes in Persuasion</div>

Attitude Strength

Contemporary work on attitude strength has examined the consequences of possessing strong versus weak attitudes. There are primarily two forms of consequences of attitude strength in the literature on persuasion: persistence and resistance. For instance, research has demonstrated that strong attitudes compared to weak ones are more persistent over time and are more likely to guide behaviour (e.g., Petty & Krosnick, 1995). Therefore, persistence refers to a positively formed attitude that withstands time in the absence of any attack. On the other hand, resistance refers to any conduct that serves to maintain an attitude in the face of pressure to alter that attitude (i.e., high resistance

refers to little or no change in the face of an attack, whereas low resistance refers to much change in the face of an attack; Haugtvedt & Wegener, 1994). When considering attitude strength one must also consider the way attitudes are formed or changed. The Elaboration Likelihood Model (ELM) developed by Petty and Cacioppo (1986) is a dual process model that deals with the formation and change of attitudes.

Elaboration Likelihood Model

The ELM explores individuals' motivation and ability to process issue-relevant information (Petty & Cacioppo, 1986). The ELM characterizes persuasion through the operation of two routes: a central route or a peripheral route. Central processing is characterized by high motivation and high ability to elaborate cognitively issue-relevant information in forming or changing judgments. Conversely, peripheral processing is characterized by low motivation and low ability to engage in effortful processes. In these conditions, individuals will rely on cues (e.g., source expertise) to create or change attitudes.

Factors that enhance processing motivation include the need for cognition, personal relevance, and personal responsibility for evaluating the message (Petty & Cacioppo, 1986). Likewise, factors that enhance processing ability include message comprehensibility, message repetition, and low levels of external distraction (Petty & Cacioppo, 1986). A key assumption of the ELM is that attitude changes that result mostly from central processing of issue-relevant arguments will show a greater resistance to counter-persuasion, greater temporal persistence, and greater prediction of behavior than attitude changes that result mostly from peripheral cues (Petty & Cacioppo, 1986).

In terms of motivation, Cacioppo and Petty (1982) reasoned that situational

factors such as distraction and personal relevance, which increase the probability that individuals will think about and elaborate on externally provided messages, would affect persuasion. They also believed dispositional factors would direct message processing and thus also affect persuasion. One of the most interesting dispositional factors reviewed in the literature is the Need for Cognition.

Need for Cognition

Need for cognition can be defined as an individual's inclination to invest effort in and to participate in cognitive endeavors (Cacioppo & Petty, 1982). The Need for Cognition Scale, developed by Cacioppo and Petty (1982), contains questions designed to assess a person's reaction to requirements for effortful thinking in a variety of situations. In a review of the Need for Cognition Scale, Cacioppo, Petty, Feinstein and Jarvis (1996) presented numerous studies which lent support to both the convergent and predictive validity of the measure. Specifically, they indicated that need for cognition is related (although relatively weak) to general intelligence and education; such that the need for cognition is related to high school grade point average ($r = .26, p < .01$), college grade point average (meta-analysis $r = .17, p < .01$), verbal intelligence (meta-analysis $r = .24$, $p < .01$), and American College Testing Program Exam (ACT) scores (meta-analysis $r = .26, p < .01$). In addition, they reported Cronbach reliability to equal .89.

From the time of its introduction into the psychological literature, need for cognition has been viewed as a variable reflecting cognitive motivation. Further research has supported the notion that need for cognition is a motivational variable by revealing that people who are high in need for cognition are more likely than people who are low in need for cognition to be curious (Osberg, 1987), to show a desire to maximize

information gained from an experience (Sorrentino, Short, & Raynor, 1984), to show willingness to focus their attention on a task at hand (Osberg, 1987), to be intrinsically motivated (Olson, Camp, & Fuller, 1984), to perform better on recall and problem-solving tasks (Dornic, Ekehammar, & Laaksonen, 1991) and to engage in evaluative responding (Jarvis & Petty, 1996).

In addition, individuals high in need for cognition are more likely than those low in need for cognition to seek out and elaborate on relevant information when performing a task (Berzonsky & Sullivan, 1992). More specifically, the need for cognition is considered to be a personality variable that operationalizes the motivation to elaborate components of attitude change (Haugtvedt & Petty, 1992). Therefore, when subjected to message communications, individuals who are high in need for cognition are likely to engage in high elaboration and central processing, whereas those low in need for cognition are likely to engage in very little elaboration and process information peripherally (Haugtvedt & Petty, 1992).

The Existing Literature

Previous research has shown how the effect of a persuasive message can be influenced by individual differences and the extent to which individuals can extract and elaborate on the information presented to them. One of the earliest research studies in this area was conducted by Cohen, Stotland and Wolfe (1955). Subjects were randomly assigned to read and rate either a well-organized or an ambiguous story about an interview between a student and a potential employer. Results indicated that overall, individuals high in need for cognition evaluated the ambiguous story more negatively than the structured story. Thus, indicating that individuals high in need for cognition

scrutinize communications more and are more affected by the quality of the arguments than low in need for cognition individuals.

In order to provide further and empirical support for the hypothesis that argument quality is a strong influencing factor in creating or changing attitudes of high need for cognition individuals, Cacioppo, Petty, and Morris (1983) conducted a two-study experiment in which subjects read either a strong or a weak argument in support of the recommendation that high-school seniors be required to pass a comprehensive exam in order to graduate (Experiment 1) or support a raise in student tuition (Experiment 2). Prior to the experiment, the researchers ensured that subjects matched on their initial attitude toward the issue at hand. In both studies, manipulation of argument quality had a larger impact on individuals high in need for cognition than those low in need for cognition. Specifically, after exposure to the strong message, individuals high in need for cognition perceived the communicator to be more expert and trustworthy. In addition, they reported more effort thinking about the messages and recalled substantially more of the strong and weak arguments than individuals low in need for cognition. Also, individuals high in need for cognition exhibited a larger difference between attitudinal responses to the strong and weak message, and a stronger association between message evaluations and attitudes. Cacioppo et al. (1983) concluded that an examination of the fundamental sequence of message evaluation and attitudes supported the notion that post-communication attitudes were influenced by the elaboration and evaluation of the arguments.

The goal of persuasive arguments is not only to influence a person's attitudes but also to ensure that the change is durable. Research in the area of attitude strength has

examined individual differences and the important implications it can have for the

persistence and resistance of newly formed or changed attitudes (Haugtvedt & Petty,

1992). One of the more pertinent studies conducted in this area analyzed differences in

delayed responses of people who differ in the need for cognition (Haugtvedt & Petty,

1992). This was a two-study experiment in which the first study specifically examined

the persistence over time of both high and low need for cognition individuals. Subjects

formed initial attitudes toward unknown brands of products after viewing persuasive

messages (the use of an unknown brand ensured that the participants would not be

exposed to additional information about the brand during the delay period outside the

experimental setting). A couple of days later, attitudes toward the brands were assessed

again. Results indicated that although high and low need for cognition subjects formed

similarly favorable initial attitudes about the product, the attitudes of high in need for

cognition individuals persisted over time to a greater degree than the attitudes of low in

need for cognition individuals.

The second study carried out by Haugtvedt and Petty (1992) tested the resistance

of judgments of high and low need for cognition individuals. Subjects were exposed to a

message that strongly questioned the safety of a popular food additive (it is important to

note that prior to the experiment, beliefs regarding the additive were positive, and were

equivalent for both high and low need for cognition individuals). Minutes later, the

message was followed by a counter-argument in support of the additive. After the initial

message, there were no differences between the issue-relevant attitudes of high and low

need for cognition individuals. However, following the counter-argument, subjects high

in need for cognition, believed to have engaged in active counter argumentation, were

uninfluenced by the attacking message. In contrast, subjects low in need for cognition agreed with the direction of the second message and moved back toward their pre-experimental beliefs that the food additive was safe. The study also showed that confidence in the initial attitudes of high in need for cognition individuals were based on the number of meaningful message arguments they could recall, whereas low in need for cognition individuals based their confidence of the initial message on the perceived source expertise and the amount of information contained in the message. Haugtvedt and Petty (1992) concluded that the results of the two studies show that a persuasive message should encourage thoughtfully mediated attitude change if the resulting attitude is to be persistent over time and resistant to counterarguments.

While examining the influence of attitude strength on primacy and recency effects, Haugtvedt and Wegener (1994) conceptualized primacy effects as involving high levels of attitude strength (and thus a resistance to change) for newly formed or changed attitudes during the initial message. They also conceptualized recency effects as involving low levels of attitude strength (and thus low levels of resistance). Thus primacy effects are more likely to occur when motivation and ability to elaborate on the initial message are high, therefore making it more likely to defend the strong attitude developed by the first message when facing an attack (Haugtvedt & Wegener, 1994). Conversely, recency effects should most likely occur when motivation and ability to elaborate the first message are low (i.e., a weak attitude is developed for the initial message); therefore, allowing the second message (the most recently presented information) to have an impact when an attitudinal inquiry is made.

In order to test their hypotheses, Haugtvedt and Wegener (1994) conducted a two-

study experiment in which a random message order (i.e., pro/con, con/pro) was utilized. Subjects read arguments in favour of and against the institution of a senior comprehensive exam as a graduation requirement (Experiment 1) or in favour of and against the establishment of nuclear power plants (Experiment 2). In order to manipulate the likelihood of elaboration Haugtvedt and Wegener (1994) created high and low relevance of the issues; thus for Experiment 1 subjects were told that either the exams were being considered for implementation at their university next year (high personal relevance) or being considered at a distant university for some time in the future (low personal relevance). For Experiment 2 subjects were told that Federal Energy Program documents proposed that nuclear power plants be built in distant states (low personal relevance) or in their own or nearby states (high personal relevance). Results indicated that messages in high levels of elaboration led to a greater influence of the first message on final judgments, therefore creating a primacy effect. On the other hand, when the issue at hand fostered low levels of message relevant elaboration it led to a greater influence of the second message on final judgments therefore creating a recency effect. Haugtvedt and Wegener (1994) concluded that in both experiments subjects who read the material under high personal relevance tended to counter-argue the second message more than subjects who read the low relevance material, therefore suggesting that counter arguments were elicited in defense of relatively strong attitudes.

The previous research strongly suggests that the attitudes of individuals high in need for cognition can be persistent over time, resistant to change, and are more influenced by a strong argument quality. In addition, the attitudes of high in need for cognition individuals are more likely to change as a result of effortful thinking about the

merits presented in issue-relevant arguments. In contrast, the attitudes of individuals low in need for cognition are not likely to be as persistent over time, less resistant to change and are not likely to be influenced by high quality arguments. Instead, their attitudes are more likely to change as a result of positive images or values in a persuasive message.

<div align="center">Within the Context of the Courtroom</div>

Models of Juror Decision-Making

Many models have attempted to explain the framework of how jurors reach a particular verdict. One theoretical orientation that has been influential in much research concerning juror decision-making is the Story Model (Pennington & Hastie, 1992). The Story Model of Juror Decision Making maintains that jurors arrive at a verdict as a result of a three-stage process (Pennington & Hastie, 1992). The first stage is a story construction in which individuals organize and attempt to interpret trial evidence. This is done through the construction of a story with causal links between episodes in the story. It is possible for individuals to construct more than one story; in that case, stories are judged on the basis of their acceptability. According to the Story Model, acceptability is a function of coherence, completeness, and uniqueness (Pennington & Hastie, 1992). The second is verdict representation in which jurors construct a representation of a possible verdict. In most criminal cases, decisions consist of more than a "guilty" or "not guilty" verdict. For example, in the murder case used in Pennington and Hastie (1986) the juror has four options: first degree murder, second degree murder, manslaughter, and not guilty. The third stage is the story classification in which the story constructed in stage 1 is matched to the verdict representation of stage 2. The central element here is the best fit between the story and the various verdicts. Essentially, the verdict with the best fit to the

story is hypothesized to be the one chosen by the juror (Pennington & Hastie, 1992).

Although the Story Model has provided a valuable theoretical approach to assessing juror decision-making, it offers a different account of the role of individual differences (Honess & Charman, 1992). The Story Model postulates that any differences in individuals' story construction must arise from differences in beliefs and experiences about the social world (Pennington & Hastie, 1993). In contrast, dual processing models, such as the Elaboration Likelihood Model, hypothesize relatively stable individual differences (i.e., the need for cognition) that differentiate the processing style of individuals. This model will be the focus of this research.

Cognitive Individual Differences

As described above, in terms of consequences, courtroom arguments are one of the more persuasive forms of communication. Within the legal context, researchers, scholars, and legal professionals have focused most of their attention on attempting to identify the role of individual differences in juror decision-making. The conclusion from most of the research is that individual differences among jurors do make a difference. However, most research prior to the 1960s focused on adopting a global hypothesis that determined which people were "hardliners" (i.e., these individuals would be conviction prone to virtually any case; Hastie, 1993) and which were the "bleeding hearts" (i.e., these individuals would be acquittal prone for most cases; Hastie, 1993). Recent research now focuses on identifying simple individual differences.

For example, Kassin, Reddy and Tulloch (1990) examined the influence of order of presentation, need for cognition, and ambiguous evidence on juror decision-making. Subjects watched a 45 minute video of an interrogation in which the suspect emphatically

denied the charges and asserted her innocence while telling an imperfect story. Before

viewing the interrogation video, subjects were asked to read a summary of the case and

were randomly assigned to receive either the prosecution's or the defense's argument

concerning the suspect's performance during interrogation. After viewing the

interrogation video, subjects read counter-arguments from the opposing side. Results

indicated that subjects high in need for cognition were influenced primarily by arguments

that preceded the interrogation video, whereas low in need for cognition subjects were

influenced by arguments that followed the video. Specifically, subjects high in need for

cognition were more likely to indicate a verdict in favour of the side that presented their

argument before the interrogation video was viewed, whereas subjects low in need for

cognition were more likely to indicate a verdict in favour of the side that presented after

the interrogation video.

Research suggests that individual differences are influential in the process by

which a juror makes a decision (Hastie, 1993). However, most studies have focused on

identifying temporal and situational factors more so than dispositional factors. That is,

little research has identified or expanded on enduring personality characteristics that

make some jurors more susceptible to schematic biases than others. One construct that

seems particularly relevant is the Need for Cognition. Individuals high in need for

cognition tend to think carefully about persuasive messages and as such are more likely

to be influenced by the strength and quality of the arguments. Moreover, when taking into

consideration primacy and recency effects, individuals high in need for cognition are

likely to be resistant to change and persistent over time, thus indicating that a primacy

effect should prevail for them.

Overview of the Research

Review of the previous literature has indicated that need for cognition and

presentation order does influence juror decision-making. However, little research has

examined the influence of argument strength within the context of the courtroom.[2] From

the reviewed literature on persuasion, it was shown that argument strength does interact

with individuals' need for cognition (Cacioppo et al., 1983).

No current research exists to suggest whether need for cognition, order of

presentation and argument strength of the prosecution's and defense's closing arguments

affect juror decision-making. Therefore, while using the ELM as a basis for our

theorizing, two experiments were conducted to determine the influence of these factors.

The focus of Experiment 1 was to examine the motivation of individuals through the

application of the need for cognition scale. Subjects were asked to indicate a verdict

following the presentation of conflicting arguments from the prosecution and defense in a

court case which could arise in either a civil or criminal context. The focus of Experiment

2 was to assess the motivation and ability of individuals through the application of the

need for cognition scale and the manipulated complexity of expert witness testimonies.

Subjects were asked to indicate a verdict following the presentation of conflicting

arguments from the prosecution and defense, and the presentation of expert testimony for

both sides on a criminal case.

Experiment 1

Support for my theoretical perspective comes from the previously reviewed

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[2] Argument strength has been operationally defined as statements which clearly provide sufficient or insufficient support for the prosecution or defense (Silzer & Clark, 1977). In the present study we observed that a "strong" message provided sufficient arguments and did not require further evidence in order for mock jurors to make a decision. A "weak" argument provided insufficient arguments and required more evidence for mock jurors to make a decision.

literature. That is, primacy effects are more likely to occur with individuals high in need for cognition and in contrast, recency effects are more likely to occur with individuals low in need for cognition. The current study used a mock jury trial by which the strength of the arguments (i.e., strong vs. weak) presented by the prosecution and defense were varied in order to test these differences. The following hypotheses were tested:

Hypothesis 1a: A primacy effect will occur with individuals high in need for cognition under conditions fostering strong arguments or weak arguments for both the prosecution and defense. This will result in finding the defendant "guilty" if the prosecution presents first followed by the defense or "not guilty" if the defense presents first followed by the prosecution.

Hypothesis 1b: A recency effect will occur with individuals low in need for cognition under conditions fostering strong arguments or weak arguments for both the prosecution and defense. This would result in finding the defendant "not guilty" if the prosecution presents first followed by the defense or "guilty" if the defense presents first followed by the prosecution.

Other predictions made were:

Hypothesis 2a: Individuals high in need for cognition under conditions fostering strong arguments followed by weak arguments, or weak arguments followed by strong arguments will render a verdict based on the strong arguments.

Hypothesis 2b: Individuals low in need for cognition under conditions fostering strong arguments followed by weak arguments, or weak arguments followed by strong arguments will determine a verdict based on the last presenter.

Method

Participants

Two hundred and twenty-four undergraduate students participated from Saint

Mary's University. All participants received one bonus mark toward an introductory

Psychology course for their participation.

Design

This study used a 2 (presentation order: prosecution first vs. defense first) X 2

(prosecution's argument strength: strong vs. weak) X 2 (defense's argument strength:

strong vs. weak) X 2 (need for cognition: high vs. low) between-subjects experimental

design.

Materials

Case. The experiment used a hypothetical case which was used in previous

literature on jury decision-making. The case could arise in either a civil or criminal court

(Thibaut, Walker & Lind, 1972; Silzer & Clark, 1977). The case was explained by a brief

summary which described a confrontation between two individuals, in which one

individual stabbed the other with a piece of broken glass (see Appendix A).

Predictors Measures. Participants were randomly assigned to receive either the

prosecution closing statement first followed by the defense closing statement, or the

defense closing statement first followed by the prosecution closing statement. In addition,

participants were also randomly assigned to receive one of the following four conditions

of argument strength[3]: strong/strong, strong/weak, weak/strong or weak/weak (see

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[3] A pilot study was conducted in order to verify the strength of the arguments presented. Ninety-two psychology students were given the case summary and randomly assigned to receive one of the four conditions: prosecution weak argument, prosecution strong argument, defense weak argument, or defense strong argument. Participants were then asked to rate the strength of the argument based a 7-point scale with 1 being "very weak" to 7 being "very strong". T-tests were conducted and verified that there was a significant difference between the prosecution's strong and weak arguments, t (22) = 4.74, p <.05 and the defense's strong and weak arguments, t (24) = -3.08, p <.05. In addition, there was no significant difference between prosecution and defense's strong arguments, t (22) = .53, p >.05 and the prosecution and defense's weak arguments, t (25) = -.37, p >.05.

Appendix B). Participants were asked to complete the Need for Cognition Scale (see Appendix E). The score of the Need for Cognition Scale is based on the responses to 18 items. Each item is based on a 4-point scale with 1 being "completely false" to 4 being "completely true". Reliability coefficient for the scale in this study is equal to .81.

Dependent Measures. Participants were asked to indicate a verdict twice following the presentation of all materials. First, participants were asked to state an official verdict of the defendant, finding the defendant either "guilty" or "not guilty" (see Appendix C). Second, participants were asked to rate the defendant on a culpability scale from 1 = "not at all guilty" to 7 = "completely guilty" (see Appendix D).

Procedure

Participants were tested in groups of up to 20. Each participant was given an informed consent form to read and sign. Participants were told that they would be acting as jury members in a court case, and they would have to find the defendant in the case either "guilty" or "not guilty." Participants were then told that the defendant in the case was being accused of "assault with a weapon." Participants were then given four envelopes in sequence containing the case, arguments, and questionnaires. Participants were instructed to read the material in the envelopes in the order to which they were assigned. Participants were also instructed to read the materials only once and not to refer back to any previously read material.

The first envelope contained an introductory statement telling participants that they were acting as a jury member in a court case where they would be reading a case summary, the closing arguments of the lawyers, and then determining a verdict, in addition to filling out a few questionnaires at the end. After reading the introductory statement, participants were asked to turn the page and read the case. The second and

third envelopes contained the arguments for the prosecution and the defense to ensure

that the participants would only read one argument at a time. The fourth envelope

contained the dependent measures and the Need for Cognition Scale. After completing

the task and returning all four envelopes to the experimenter, participants were given a

feedback form and awarded one bonus point.

<div align="center">*Results*[4]</div>

Verdict

Overall, 64% of individuals indicated a guilty verdict. A sequential logistic

regression analysis was preformed to estimate the factors that influence juror decision-

making. The dependent variable was determined by either a guilty verdict equal to 1 or a

not guilty verdict equal to 0. The model is presented in multiple steps with variables at

each step simultaneously entered. The first step included all four independent variables

(presentation order, need for cognition, prosecution's strong/weak arguments and

defense's strong/weak arguments), the second step included the four independent

variables and all two-way interaction variables, the third included the preceding variables

and the three-way interaction variables, and the fourth step included all the preceding

variables and the four-way interaction variable.

Step 1. Results of the logistic regression analysis indicated the overall significance

of Step 1 (with the four predictors: presentation order, need for cognition, prosecution's

strong and weak arguments and defense's strong and weak arguments) was statistically

significant in predicting the verdict, χ^2 (4, $N = 224$) = 18.00, $p < .01$. When assessing

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[4] Individuals were categorized as high and low in need for cognition through a median split. A median split
was used in order to be consistent with previous studies (e.g., Haugtvedt & Petty, 1992). However in order
to be thorough analyses were also run using need for cognition as a continuous variable. The results were
similar to that of a median split.

goodness of fit, the model predicted 66% of the responses correctly. The only factor that influenced juror decision-making was the strength of the prosecution's arguments ($z = 13.32, p < .01$; see Table 1). In order to determine the relationship between the verdict and the strength of the prosecution's arguments a Pearson chi-square test was performed. The results showed a significant relationship between these two variables χ^2 (1, $N = 224$) $= 13.73, p < .01$. As shown from Figure 1, when the prosecution presented a strong argument a significant number of individuals decided a guilty verdict. In contrast, when the prosecution presented a weak argument there was little difference between the verdicts (i.e., guilty or not guilty).

Table 1

Step 1: Summary of Binary Logistic Regression for Main Effect Variables Predicting the Verdict

| Variable	B	S.E.	Wald	P	B
Order	.41	.29	1.95	= .16	1.51
Prosecution	1.1	.30	13.32	< .01	2.94
Defense	-.43	.29	2.13	= .15	.65
Need for Cognition	.02	.02	.01	= .94	1.02

Note. The overall model was significant, χ^2 (4, $N = 224$) = 18.00, $p < .01$

Step 2. Step 2 included the four independent variables and the two-way interaction variables. According to the likelihood ratio test statistic there was a good model fit, χ^2 (10, $N = 224$) = 20.72, $p < .05$. The model predicted 67% of the responses

correctly. Wald statistics indicated no variables were significant.

Step 3. Step 3 included the four independent variables, the two-way interaction variables, and the three-way interaction variables. Overall the model was not significant in predicting the verdict, χ^2 (14, N = 224) = 22.32, p = .07. When assessing goodness of fit, the model predicted 66% of the responses correctly. In addition, no variables were significant.

Figure 1. Juror's responses to prosecution's strength of arguments based on verdict.
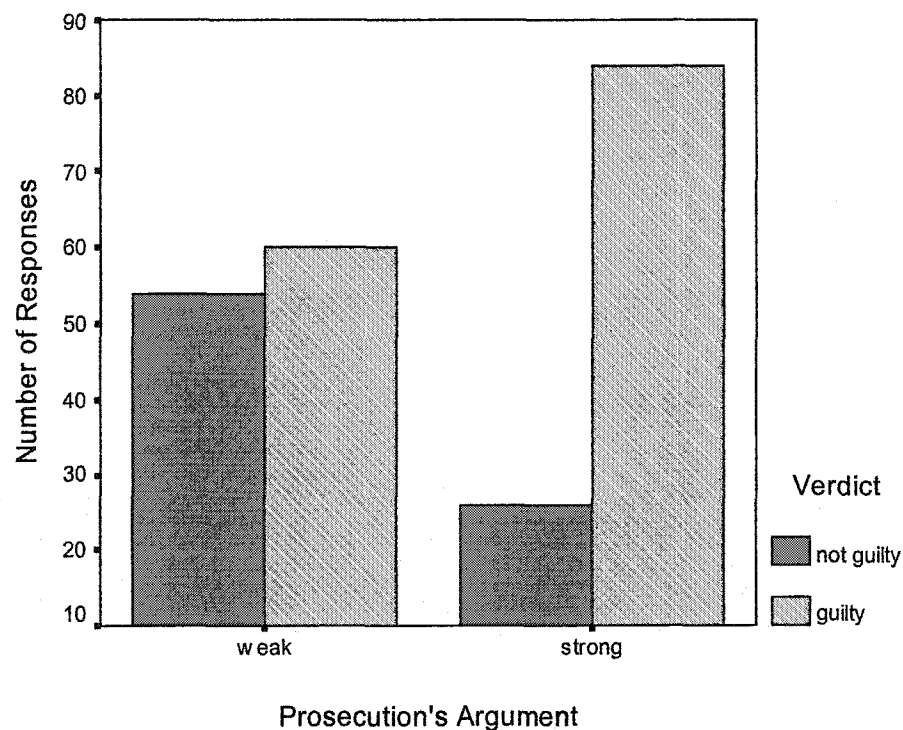
Step 4. Step 4 included the four independent variables, the two-way interaction variables, the three-way interaction variables and the four-way interaction variable. Although not quite significant the model had a strong trend towards predicting the verdict, χ^2 (15, N = 224) = 24.64, p = .06. The model predicted 67% of the responses correctly. No variables were statistically significant.

Culpability Scale

Overall, individuals decided on a higher level of guilt (M = 4.48) on the culpability scale (1 = not at all guilty to 7 = completely guilty). In order to examine which factors influence juror decision-making an ANOVA was performed. The analysis of variance included the independent variables, two-way interaction variables, three-way interaction variables, and the four-way interaction variable. The ANOVA showed a significant main effect for the strength of the prosecution's arguments, F (1, 224) = 17.36, $p < .01$ (see Table 2). The mean responses indicated that individuals decided more towards a higher level of guilt (M= 4.85) when presented with a strong argument from the prosecution as opposed to a weak argument (M= 4.11).

Table 2

Analysis of Variance for Culpability Scale

Source	df	F	$p <$
Order	1	3.70	.06
Prosecution	1	17.36*	.01
Defense	1	3.32	.07
Need for Cognition	1	1.81	.18

Note: The R^2 = .171 indicating the model is not a good predictor of the response variable.
     *$p < .01$

Overall, there was a significant interaction between order, strength of prosecution's arguments, strength of defense's arguments and need for cognition, F (1, 224) = 5.66, $p < .05$. Individuals high in need for cognition decided on a higher degree of guilt when the prosecution presented a strong argument, regardless of the order of presentation. In contrast, individuals low in need for cognition decided on a degree of

guilt in favour of the last presenter, except when the prosecution presented a strong

argument. For example, when the defense presented last individuals low in need for

cognition were more likely to indicate a lower degree of guilt. Table 3 and Figure 2 are

presented to show the interactions of the predictor measures.

Table 3

Mean Response Scores of the Culpability Scale with Order of Presentation, Strength of

Prosecution's Arguments, Strength of Defense's Arguments and Need for Cognition(NC)

<u>Prosecution First</u>

Low NC

	Weak Pros	Strong Pros
Weak Def	3.91a	4.27b
Strong Def	3.23a	4.67b

High NC

	Weak Pros	Strong Pros
Weak Def	4.00a	5.29b
Strong Def	4.00a	5.06b

<u>Defense First</u>

Low NC

	Weak Pros	Strong Pros
Weak Def	4.38a	5.58b
Strong Def	4.44a	4.35a

High NC

	Weak Pros	Strong Pros
Weak Def	4.07a	4.80b
Strong Def	4.00a	4.75b

Note. *Z*-scores were conducted in order to find mean differences. Means in the same group that do not

share subscripts differ at the $p < .05$, two-tailed.
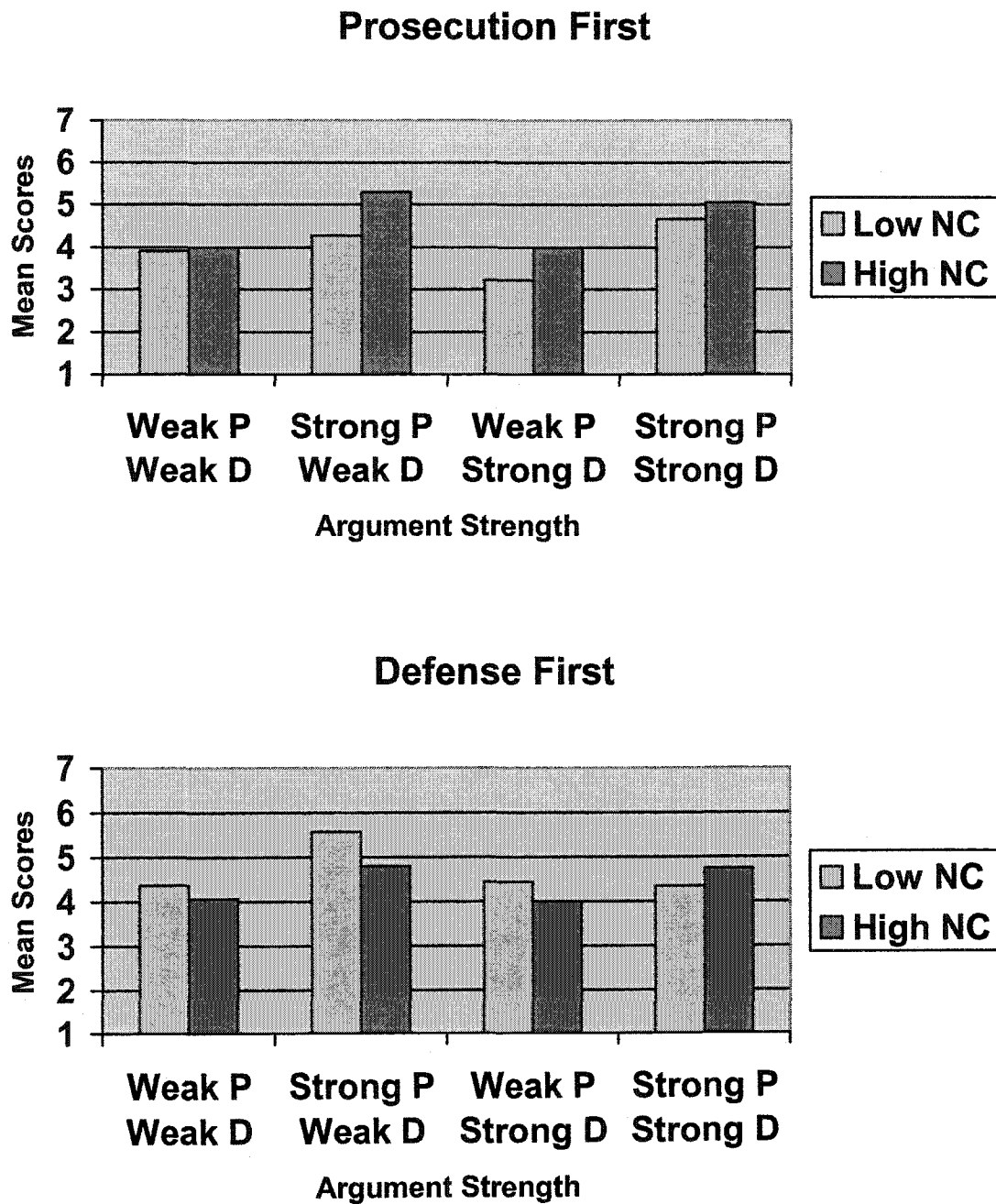
Figure 2. Juror Mean Response Scores of the Culpability Scale with Order of

Presentation, Strength of Prosecution's Arguments, Strength of Defense's Arguments and

Need for Cognition(NC)

Discussion: Experiment 1

The results of Experiment 1 indicated that the strength of the prosecution's arguments had a significant influence on juror decision-making when deciding a verdict on the dichotomous variable and the culpability scale. These results are supported by an earlier study conducted by Silzer and Clark (1977) in which participants were asked to judge a case where both the number of arguments and strength of arguments of the prosecution and defense were manipulated. Overall, the results revealed that it took significantly more arguments and stronger arguments for the prosecution to move subjects closer to a response of guilty. Silzer and Clark (1977) explained these outcomes by the instructions given to jurors upon entering a courtroom. That is, jurors are asked to keep open minds and to always hold an assumption of innocence until proven guilty, therefore indicating that the burden of proof lies with the prosecution. Thus, as expected, it should take stronger prosecution arguments to move juror's closer to a response of guilt than it would take arguments from the defense to move decisions closer to innocence. The results of the present study revealed just that. That is, when the prosecution presented strong arguments individuals were more likely to decide a guilty verdict.

Results of the ANOVA demonstrated that a significant interaction occurred between the four independent variables. When assessing the mean responses, individuals high in need for cognition indicated a verdict in favour of the prosecution's strong argument. Specifically, when presented with strong arguments from the prosecution, regardless of the strength of the defense's argument and the order of presentation, individuals high in need for cognition decided on a higher level of guilt. This result is in contrast with Haugtvedt and Wegener (1994) in which they concluded primacy effects are

likely to occur with individuals high in need for cognition, therefore making it more likely to defend the strong attitude developed by the first message when facing an attack. In this case, we can assume that individuals high in need for cognition attended carefully to all the arguments presented and made a decision based on the strength of arguments rather than the order of presentation. This result supports previously mentioned views on need for cognition and persuasion which indicate that individuals high in need for cognition scrutinize information presented to them and are more affected by the quality of the arguments.

When assessing individuals low in need for cognition, our hypotheses was partly supported. That is, individuals low in need for cognition favoured the side that presented last, except when the prosecution presented strong arguments. These results indicate that a recency effect took place and are consistent with the previously mentioned studies which indicate that individuals low in need for cognition may be relatively unmotivated to carefully attend to all the evidence, therefore falling prey to information which they heard last. In addition, when presented with a weak argument followed by a strong counter-argument, individuals low in need for cognition were more prone to a recency effect. However, when presented with a strong argument followed by a weak counter-argument the results were mixed. This suggests that individuals low in need for cognition were more prone to an order effect.

Although the results of Experiment 1 do not support our hypotheses fully, it does provide some evidence in support of past research on presentation order effects, argument strength, and indications of individual differences. In order to examine further the influence of these variables on juror decision-making a second experiment was

conducted. Participants were asked to determine a verdict following the presentation of

conflicting arguments from the prosecution and defense in a criminal case. In addition,

the influence of expert testimony and the complexity of their arguments were also

examined in order to examine comprehensibility. Expert testimony is believed to be

valuable in the context of a courtroom and the ability of jury members to comprehend the

testimony can have important implications on the decisions they render.

Experiment 2

According to the Elaboration Likelihood Model, individuals presented with a

persuasive message can take two routes to arrive at an attitude (Petty & Cacioppo, 1986).

Whether an individual will follow the central route or the peripheral route to persuasion is

determined by the likelihood of elaboration, which in turn, is influenced by the

individual's motivation and ability to process the information presented. In Experiment 1

we attempted to assess an individuals' motivation through the application of the Need for

Cognition scale. Drawing further on the ELM, Experiment 2 was designed to specifically

assess the ability of individuals through the application of complex and simplified expert

testimonies presented by the prosecution and defense. Message comprehensibility has

been identified as a factor that evaluates processing ability (Petty & Cacioppo, 1986).

The introduction of expert witness testimony in both criminal and civil trials has

proliferated in the past thirty years (Cooper, Bennett, & Sukel, 1996). The purpose of

expert testimony is to bridge the gap between common knowledge and specialized

knowledge therefore allowing juries to understand and evaluate the facts so that they may

form their own opinions and decide on a verdict (Pipkin, 1989).

The impact of expert testimony in a trial can be profound. In a 1993 poll of civil

and criminal trials conducted by the National Law Journal, eighty-nine percent of jurors that heard an expert's testimony in court thought the expert was not only believable but credible as well. This same poll established that jurors also found expert testimony to often influence the outcome of the trial. Specifically, it was reported that seventy-one percent of the jurors polled said experts made a difference in the verdict (Cheever & Naiman, 1993). These observations demonstrate the necessity of conducting research on the impact of experts' testimony and the influence it may have on jurors' decision-making. However, before we reference some existing literature regarding the influence of expert testimonies on individual differences, it is important to note the many controversies that lie within the legal system regarding the admission and precision of expert testimony.

Expert witnesses are usually granted special licenses which allow them to offer their opinions and knowledge of the issue at hand. However, research has indicated there are some inherent dangers in these opinions (Gold, 2002). That is, sometimes opinions offered as expertise have little or no probable value to the issue at hand and may be referred to as "junk science" (Gold, 2002). A cure identified for false expert evidence is to follow the scientific method. The scientific method, which has been administered in both Canada and the United States, requires expert witnesses to convey evidence which constitutes scientific literature and not subjective opinions. Although the administration of the scientific method has substantially improved the legal system, there is an important drawback to be noted: the file drawer effect. Essentially the file drawer effect refers to "what is news gets published, what is not stays in the file drawer" (Gold, 2002, p.14). In most circumstance studies declaring significant results are more likely to be published

than studies with negative results. Thus, non significant results, even though possibly valuable, may not be provided as scientific literature, which in turn, may limit the evidence that expert witnesses can provide to the judges and jurors (see Rosenthal, 1979).

Contemporary research has uncovered a number of variables that appear to influence the impact of expert testimony on juror's decision-making. For example, Schuller and Cripps (1998) conducted a study in which jurors were presented with expert testimony pertaining to battered women's syndrome. The trial was presented as a homicide which involved a battered woman who had killed her abuser. Results showed that mock jurors were more lenient in their verdicts and more likely to believe the battered woman's claim of self-defense when the expert was a female as opposed to male. Another variable assessed in this study involved the timing of the presentation of the testimony. The study found support for the beneficial impact of an early presentation of expert testimony as opposed to a later presentation of the testimony.

Other research in this area has also shown that complexity of expert testimony can influence jurors' decision-making. For instance, Cooper, Bennett, and Sukel (1996) conducted a juror simulation study involving a civil case where they varied the information that jurors received on the credentials of the expert (i.e., qualifications, current academic position, number of publications, and number of prestigious scientific positions). They hypothesized that juror's receptivity to complex expert testimony would be influenced by peripheral cues relating to source expertise and credibility. The results verified their hypothesis and revealed mock jurors who heard complex testimony were more persuaded by a highly credentialed expert witness than by an expert witness with fewer credentials; this was not evident when subjects were exposed to a simplified form

of the testimony. In general, Cooper et al. concluded that individuals who may not have the background to process complex messages will probably not engage in the careful scrutiny of the message; instead they will rely on peripheral cues and engage in heuristic processing.

Although research has uncovered a range of variables that appear to influence the impact of expert testimony on jurors' decision process, no research has attempted to explore individual differences of jury members and the implications it can have when comprehending expert testimony. Research on persuasion shows that individuals do not always carefully scrutinize the quality of a message, especially if the motivation and ability to attend to the message is lacking or, in the case of complex messages, impaired. Within the context of a courtroom we assume that jurors have the motivation to serve justice, which would include trying to assess the content of the messages, however, they may lack in the ability to process the information presented (Cooper et al., 1996). Therefore, instead of attending to the quality and validity of the arguments, jurors may rely on a variety of factors associated with the message or the messenger (e.g., order of the arguments and source expertise)

As previously noted the ELM examines motivation and ability. In Experiment 1 we used the Need for Cognition scale to assess the motivation of individuals to attend to the arguments provided by the prosecution and defense. In Experiment 2 we used complex and simplified expert testimonies in order to examine the ability factor portrayed in the ELM. Specifically, this study will build upon the variables assessed in Experiment 1 (order of presentation, strength of arguments and need for cognition) and will take it one step further by examining the ability of individuals when presented with expert

testimony (introduced by both the prosecution and defense from expertise with the same credentials) to determine the influence it may have on the decision maker during the process that occurs in forming attitudes or opinions.

The present research was designed to evaluate how the comprehension of complex and simplified expert testimonies affects individuals high and low in need for cognition during the decision-making process. The study used a mock jury trial to test these differences. Based on the previous literature, the following hypotheses were tested:

Hypothesis 1: Individuals high in need for cognition should put more effort into processing the arguments and testimonies presented to them and therefore are less affected by the complexity of expert testimonies.

Hypothesis 2: Individuals low in need for cognition should be more affected by the complex testimonies.

Method

Participants

Two hundred and eighty-eight undergraduate students participated from Saint Mary's University. All participants received one bonus mark toward an introductory psychology course for their participation.

Design

This study used a 2 (presentation order: prosecution first vs. defense first) X 2 (argument strength: strong vs. weak) X 2 (prosecution expert testimony: simple vs. complex) X 2 (defense expert testimony: simple vs. complex) X 2 (need for cognition: high vs. low) between-subjects experimental design.

Materials

Case. The experiment used a hypothetical criminal case. The case was explained

by a brief summary in which a married man is charged with the murder of his wife and

her companion (see Appendix F). Arguments and testimonies for this case were derived

from a similar case used in previous research on jury decision-making (Hastie, 1993).

Predictors. Consistent with Experiment 1, participants were randomly assigned to

receive either the prosecution's closing argument followed by the defense's closing

argument or the defense's closing argument followed by the prosecution's closing

argument. Participants were also randomly assigned to receive either weak or strong

arguments throughout the case (i.e., the case would mutually contain either weak/weak or

strong/strong arguments [see Appendix I for case arguments]).[5] In addition, participants

were also randomly assigned to receive one of the four conditions of expert witness

testimonies (see Appendix J). It is important to note that the credential of each expert

witness was equal for both sides. All participants were asked to complete the 18-item

Need for Cognition Scale (see Appendix E). Reliability coefficient for the Need for

Cognition Scale in this study is equal to .87.

Dependent Measures. Participants were asked to indicate a verdict following the

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[5] Pilot studies were conducted to verify the strength of the arguments and complexity of expert's testimonies of the criminal case. Fifty-two psychology students were given the case summary of the criminal case and randomly assigned to receive one argument from the prosecution or defense and one expert testimony from the prosecution or defense. Participants were then asked to rate the strength and complexity of the arguments based a 7-point scale with 1 "very weak" to 7 "very strong" and 1 "very simple" to 7 "very complex". T-tests were conducted and verified that there was a significant difference between the prosecution's strong and weak arguments, $t(10) = 3.71$, $p <.05$, and the defense's strong and weak arguments, $t(13) = 4.27$, $p <.05$, as well as experts simple and complex arguments for the prosecution $t(10) = -5.49$, $p <.05$ and for the defense, $t(13) = -5.21$, $p <.05$. In addition, there was no significant difference between prosecution and defense's strong arguments, $t(10) = 1.01$, $p >.05$, and the prosecution and defense's weak arguments, $t(11) = -2.35$, $p >05$, as well as the expert's simple arguments for the prosecution and defense, $t(11) = .33$, $p >.05$, and the expert's complex arguments for the prosecution and defense, $t(10) = .77$, $p >.05$.

presentation of all materials. Specifically, all participants were asked to state an official

verdict of the defendant, finding him/her either "guilty" or "not guilty".[6]

Procedure

Participants were tested in groups of up to 20. Each participant was given an

informed consent form to read and sign. Participants were told that they would be acting

as a jury member in a court case, and they would have to find the defendant either

"guilty" or "not guilty." All experimental materials including instructions, the case, the

arguments and questionnaires to assess verdicts were contained in single mimeographed

booklet. Participants were instructed to read the booklet in sequence, concentrating on

one page at a time and not to look ahead or back at other pages. The booklets were

arranged in random order representing the experimental conditions and were distributed

to subjects by random assignment. After completing the task and returning the completed

booklet to the experimenter, each participant was given a feedback form and awarded one

bonus point.

Results

Overall, 43% of individuals indicated a guilty verdict. A sequential logistic

regression analysis was performed to estimate the factors that influence mock juror

decision-making. The dependent variable was determined by either a guilty verdict equal

to 1 or a not guilty verdict equal to 0. The model is presented in multiple steps with

variables at each step simultaneously entered. The first step included the five independent

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[6] It is important to note the difference between the dependent variables from Experiment 1 to Experiment 2. In Experiment 1 we used a case which could be tried in either a civil or criminal court, however, Experiment 2 consists of a specified criminal case. Previous research has noted that criminal cases do not generalize to civil cases (Raitz et al., 1990). In criminal cases, jurors usually only have to choose between a guilty and not guilty verdict. In civil cases, the jury can select a compromised award to the plaintiff and are not constricted to the damages that are claimed by the plantiff. Therefore, in order to follow the same procedures as in real court proceeding we have followed the standard practice and only allowed a specific verdict in Experiment 2.

variables (presentation order, need for cognition, strength of arguments, prosecution's

expert testimony, and defense's expert testimony), the second step included the five

independent variables and two-way interaction variables, the third included the preceding

variables and the three-way interaction variables, the fourth step included all the

preceding variables and the four-way interaction variables and the fifth step included all

preceding variables and the five-way interaction variable.

Step 1. Results of the logistic regression analysis indicated the overall significance

of step 1 with the five predictors was statistically significant in predicting the verdict, $\chi2$

(5, N = 288) = 26.26, p < .01. When assessing goodness of fit the model predicted 65% of

the responses correctly. According to the Wald statistic the only statistically significant

factor was strength of arguments, z = 23.21, p < .01 (see Appendix K). Mean responses

indicated, when presented with strong arguments 58% of individuals decided on a verdict

of guilty. However when presented with weak arguments only 38% of individuals

decided a guilty verdict. In order to determine the relationship between the verdict and

the strength of the arguments a Pearson chi-square test was performed. The results

showed a significant effect $\chi2$ (1, N = 288) = 23.98, p < .01. As shown from Figure 3,

when presented with weak arguments significantly more individuals decided a not guilty

verdict. In contrast when presented with strong arguments more individuals decided a

guilty verdict.

Figure 3. Jurors responses to strength of arguments based on verdict.

Strength of Arguments
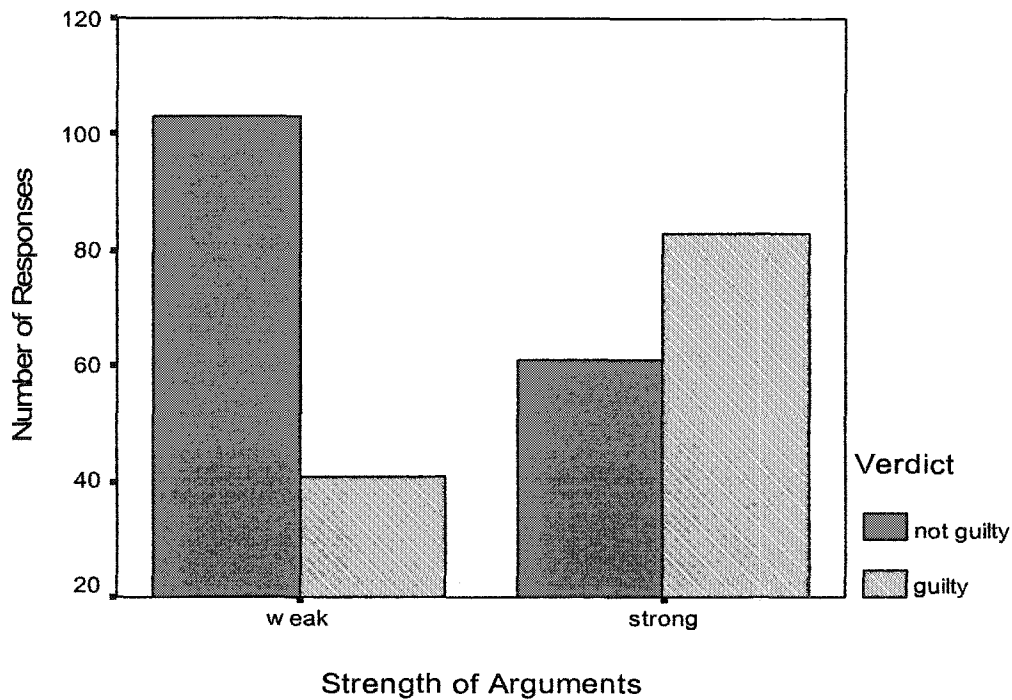
Step 2. Step 2 included the independent variables and the two-way interaction

variables. According to the likelihood ratio test statistic there was a good model fit, $\chi2$

(15, N = 288) = 42.05, p < .01. The model predicted 66% of the responses correctly.

Wald statistic showed the interaction of defense expert testimony with need for cognition

was statistically significant (z = 7.26, p < .01). Mean responses are presented in Table 4

below. When presented with simple expert testimony from the defense, 38% of

individuals low in need for cognition decided in favour of a guilty verdict. However,

when presented with complex expert testimony, 55% of individuals low in need for

cognition decided in favour of a guilty verdict. A Pearson chi-square was performed to

test the relationship between these variables. The results revealed a significant effect for

individuals low in need for cognition $\chi2$ (1, N = 147) = 4.25, p < .05, but not for

individuals high in need for cognition, $\chi2$ (1, N = 141) = 1.21, p = .27. As shown in

Figure 4, when presented with simple defense expert testimony, individuals low in need for cognition were more likely to indicate a not guilty verdict in favour of the defense. In contrast when presented with complex defense expert testimony more individuals voted guilty in favour of the prosecution. Figure 4 also includes the results for individuals high in need for cognition for comparison.
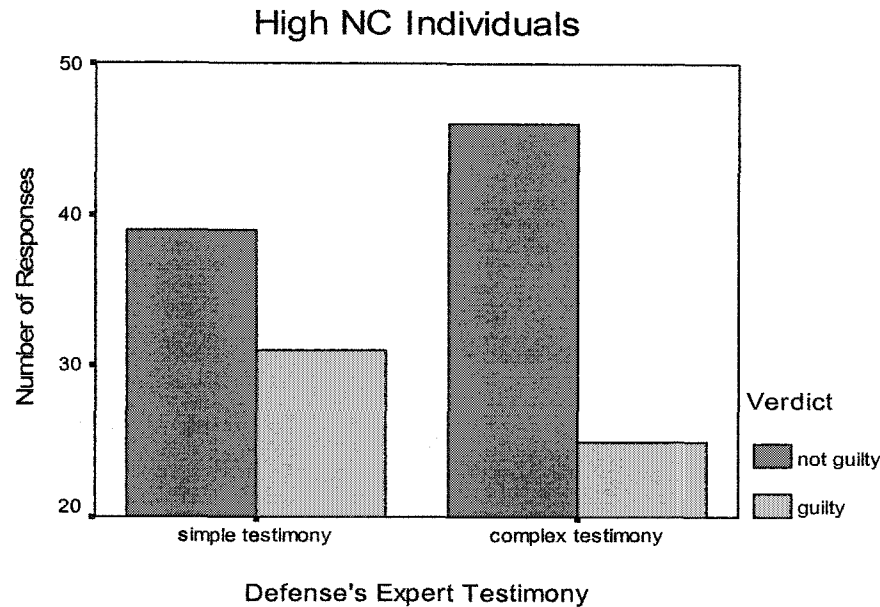
Table 4

Percentages of Mean Response for a Guilty Verdict with Defense's Expert Testimonies by Need for Cognition (NC)

| | Defense Expert Testimony | |
	Simple	Complex
Low NC	38 %	55%
High NC	44%	35%

Figure 4. Jurors responses with defense expert testimonies by need for cognition.

Low NC Individuals

High NC Individuals
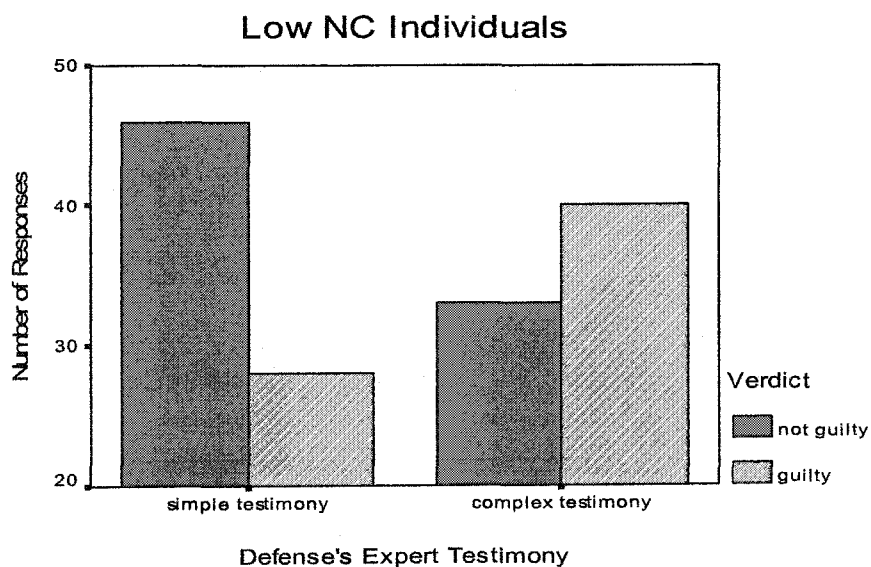
Step 3. Step 3 included the preceding variables and all three-way interaction

variables. Overall the model was statistically significant in predicting the verdict, χ^2 (25,

N= 288) = 60.32, p < .01. When assessing goodness of fit the model predicted 68% of the

responses correctly. Wald statistic showed that strength of arguments by prosecution's

expert testimony by defense's expert testimony was statistically significant (z = 7.80, p <

.01). Percentages of mean responses are presented in Table 5. Overall, when presented

with weak arguments significantly fewer individuals decided a guilty verdict, in contrast

when presented with strong arguments a greater number of individuals decided a guilty

verdict. Specifically, when assessing these results closer we can see that when presented

with the same complexity of expert testimony from both sides, individuals based their

decision on the strength of the arguments in favour of the prosecution (this result is

similar to that of Experiment 1 in which we found strong prosecution arguments to have

an affect). For example when presented with weak arguments by simple prosecution

expert testimony by simple defense expert testimony only 17% decided in favour of a

guilty verdict. In contrast, 64% of individuals decided a guilty verdict when presented with a strong argument by simple prosecution expert testimony by simple defense expert testimony. When presented with different complexities of expert testimonies the results are mixed.

Table 5

Percentages of Mean Response for a Guilty Verdict with Strength of Arguments, Prosecution's Expert Testimonies and Defense's Expert Testimonies

	Weak Arguments				Strong Arguments	
	Simple P	Complex P			Simple P	Complex P
Simple D	17 %	39%		Simple D	64%	45%
Complex D	39%	19%		Complex D	56%	67%

Pearson chi-square tests were performed to determine the relationship of these variables. When presented with weak arguments by simple defense expert testimony by prosecution expert testimony the result was significant, $\chi 2$ $(1, N = 72) = 4.25$, $p < .05$. As shown in Figure 5 when presented with weak arguments by simple defense testimony by simple prosecution testimony, a significantly greater amount of individuals decided a not guilty verdict in favour of the defense. In addition, when presented with weak arguments by simple defense testimony by complex prosecution testimony more individuals decided a not guilty verdict in favour of the defense.

Figure 5. Verdict response of jurors on the presentation of weak arguments by simple

defense expert testimony by prosecution expert testimonies.
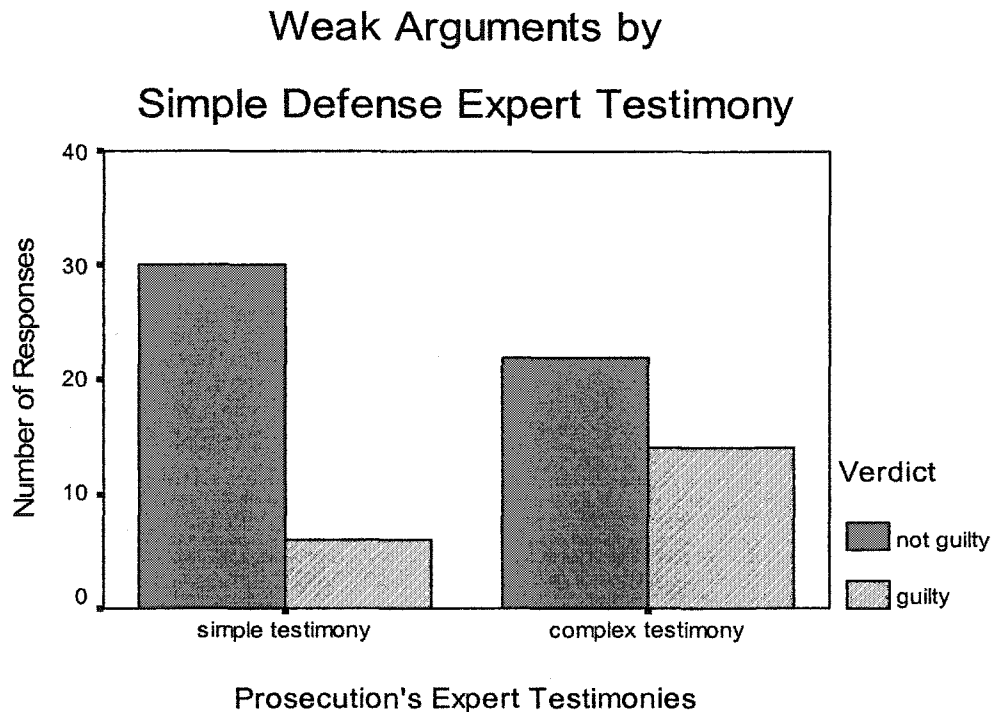
The remaining variables were found to be not significant. That is, when presented

with weak arguments by complex defense expert testimony by prosecution expert

testimony the result was not significant, χ^2 (1, N = 72) = 3.29, p = .07, similarly when

presented with strong arguments by simple defense expert testimony by prosecution

expert testimony the result was not significant, χ^2 (1, N = 72) = 2.74, p = .09 and yet

again when presented with strong arguments by complex defense expert testimony by

prosecution expert testimony the result was not significant, χ^2 (1, N = 72) = .94, p = .33.

In addition, the Wald statistic also showed that strength of arguments by defense's

expert testimony by need for cognition was statistically significant (z = 4.57, p < .05).

Mean responses are presented in Table 6 below. As shown from the table, when

presented with strong arguments, as opposed to weak arguments, regardless of the

complexity of defense's expert testimony, individuals high and low in need for cognition

were more likely to decided in favour of a guilty verdict. This result supports previously

mentioned results, of Experiment 1, which indicate the strength of arguments to influence

juror decision-making. The mean responses also show a significant difference in favour

of a guilty decision in individuals high and low in need for cognition when presented

with a weak argument and a complex expert testimony. That is, 48% of individuals low

in need for cognition indicated a guilty verdict as opposed to only 13% of individual high

in need for cognition.

Table 6

Percentages of Mean Response for a Guilty Verdict with Strength of Arguments,

Defense's Expert Testimonies and Need for Cognition (NC)

	Low NC				High NC	
	Weak	Strong			Weak	Strong
Simple	20%	50%		Simple	33%	61%
Complex	48%	60%		Complex	13%	63%

Pearson chi-square tests were performed to determine the relationship of these

variables. When presented with weak arguments by defense expert testimonies by low in

need for cognition individuals the result was significant, $\chi2$ (1, N = 63) = 5.62, p < .05.

When presented with weak arguments by defense expert testimonies by high in need for

cognition individuals the results was also significant, $\chi2$ (1, N = 81) = 4.74, p < .05.

However, strong arguments by defense expert testimonies by low in need for cognition individuals was not significant, χ^2 (1, N = 84) = .85, p = .36, and strong arguments by defense expert testimonies by high in need for cognition individuals was also not significant, χ^2 (1, N = 60) = .02, p = .89. As shown in Figure 6 when presented with weak arguments and simple defense expert testimony a significantly greater number of individuals low in need for cognition decided a not guilty verdict. In contrast, when presented with weak arguments and complex defense expert testimony more individuals high in need for cognition decided a not guilty verdict.

Figure 6. Jurors response on the presentation of weak arguments by defense expert testimonies by need for cognition.

Weak Arguments

Low NC Individuals

Weak Arguments

High NC Individuals

Defense's Expert Testimonies
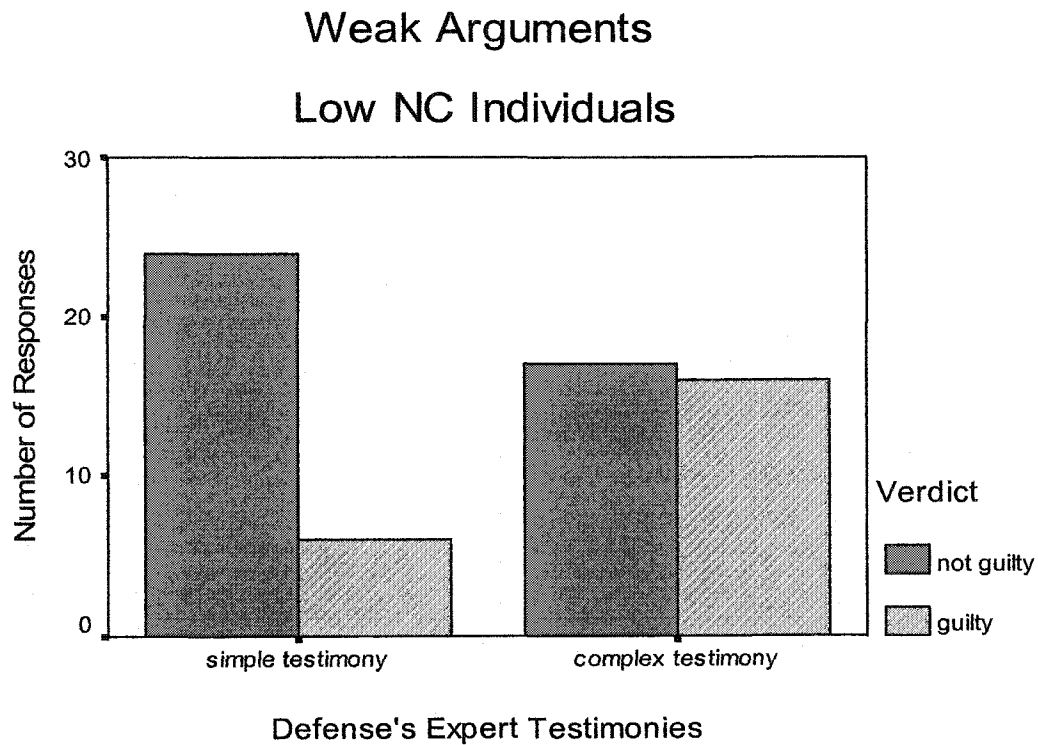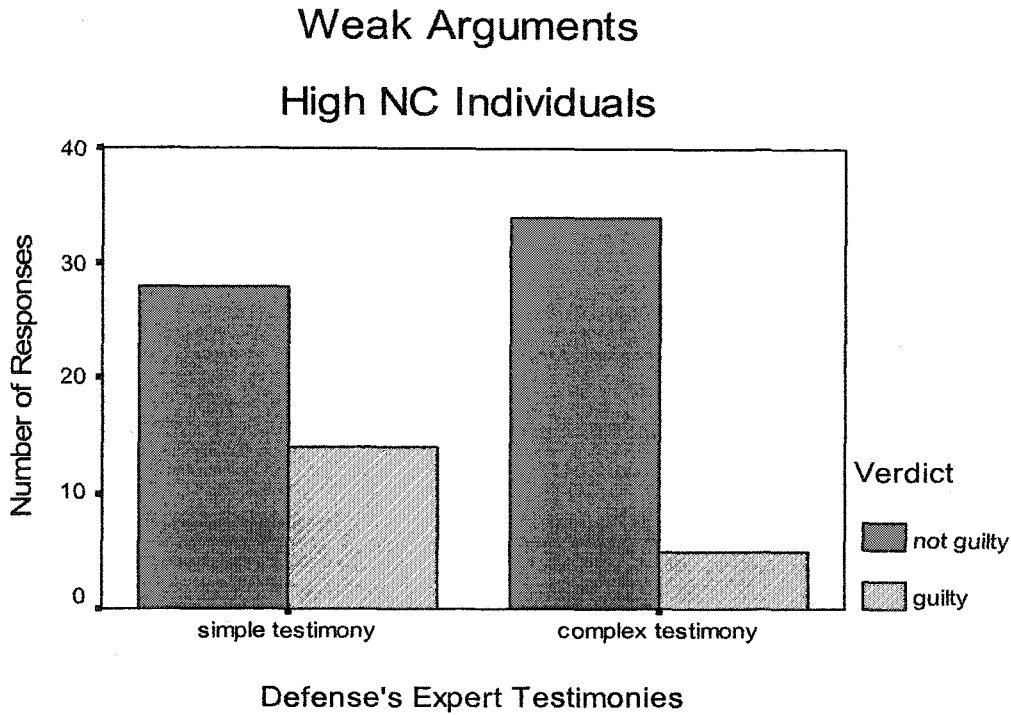
Step 4. Step 4 included the preceding variables and four-way interaction variables. The model was statistically significant in predicting the verdict, χ^2 (30, N= 288) = 64.40, p < .01. The model predicted 68% of the responses correctly. No factors were statistically significant.

Step 5. Step 5 included all the preceding variables and the five-way interaction variable. The model was statistically significant in predicting the verdict, χ^2 (31, N= 288) = 65.05, p < .01. When assessing goodness of fit the model predicted 68% of the responses correctly. No factors were statistically significant

Discussion: Experiment 2

Overall, the results from Experiment 2 revealed that the strength of the arguments had a significant influence on juror decision-making. Specifically, when presented with strong arguments individuals had a tendency to side with the prosecution and decide towards a guilty verdict. Conversely, when presented with weak arguments individuals

had a tendency to side with the defense and decide on a not guilty verdict. These results are supported by previous literature which indicates that argument quality is a strong influencing factor in creating or changing attitudes. However, unlike Cacioppo et al. (1983) there was no difference between individuals high and low in need for cognition. A possible explanation for the lack of this result could be due to the environment that we have attempted to replicate. That is, within the context of a courtroom we assume that jurors have the motivation to serve justice, which would include trying to assess the content of the messages regardless of their individual differences. We suggest that this was the case and determine that strength of arguments, specifically strong prosecution arguments, are the primary determining factor in influencing juror's decision-making.

With respect to assessing juror's ability through the manipulation of complex and simplified expert testimonies, the results revealed that only the defense's expert testimony had a significant influence on individuals high and low in need for cognition. This result may be supported by the regulations of the legal system. That is, it is up to the defense to cast doubt in the minds of the jurors that their defendant is innocent. Thus, jurors may weigh the defense's expert testimonies more than that of the prosecution's because they are looking for information which may cast doubt in their minds that the defendant is innocent. When assessing these results closer, a significantly greater number of individuals low in need for cognition had a tendency to decide in favour of a not guilty verdict when presented with simple defense expert testimony. When presented with complex defense expert testimony more individuals low in need for cognition decided in favour of a guilty verdict. A possible explanation for this effect may be that individuals low in need for cognition did not have the motivation and/or the ability to understand the

complex testimony and hence decided that it was not valid therefore deciding a verdict against the defense. These results are in partial support of our hypothesis and suggest that individuals low in need for cognition were more affected by complex expert testimonies. In addition, these results are supported by the literature on persuasion which suggests that individuals low in need for cognition generally do not engage in the careful scrutiny of the message (Petty & Cacioppo, 1986).

In addition, the joint effect of defense expert testimony, need for cognition and strength of arguments was also found to be statistically significant. Overall, when presented with strong arguments, as opposed to weak arguments, regardless of the complexity of defense's expert testimony, individuals high and low in need for cognition were more likely to decided a guilty verdict. This result further supports the notion that strength of arguments has a significant influence on juror decision-making. More specifically, we can determine that the strength of the prosecutions arguments was the primary determining factor since jurors voted in favour of the prosecution when presented with strong arguments.

In order to determine the relationship between these variables chi-square analysis were performed and found that when presented with weak arguments and simple defense expert testimony a significantly greater number of individuals low in need for cognition decided a not guilty verdict. In contrast, when presented with weak arguments and complex or simple defense expert testimony individuals high in need for cognition, overall, decided a not guilty verdict. These results may suggest that under conditions of weak arguments individuals low in need for cognition were more affected by the defense complex expert testimony, possibly indicating that these individuals may have decided

that the testimony was not valid therefore deciding a verdict against the defense.

However, individuals high in need for cognition under conditions of weak arguments

seemed to be generally unaffected by either the complex or simplified expert testimony.

Instead, it appeared that individuals high in need for cognition based their decision on the

strength of the arguments (i.e., because weak arguments were presented individuals high

in need for cognition decided against the prosecution and determined not guilty in favour

of the defense).

When assessing strength of arguments and expert testimonies, we found that there

was a significant difference when deciding a verdict. Overall, when presented with weak

arguments, prosecution expert testimonies, and defense expert testimonies, individuals

had a tendency to favour a not guilty verdict in favour of the defense. However when

presented with strong arguments, prosecution expert testimonies and defense expert

testimonies individuals were more likely to decide towards a guilty verdict. This result

may suggest that individuals overall based their decision on the strength of the arguments

and more specifically in favour of strong prosecution arguments. This result is supported

by the results of Experiment 1 where strong prosecution arguments had the most

influence.

When assessing these results more closely, we found that only weak arguments

and simple defense expert testimony by prosecution expert testimonies had a significant

influence. Overall, these results may suggest that when presented with weak arguments

and simple defense expert testimony individuals will generally decide in favour of the

defense and indicate a not guilty verdict. Specifically, when presented with weak

arguments by simple defense testimony by simple prosecution testimony, a significantly

greater number of individuals decided a not guilty verdict in favour of the defense. This

result may suggest that jurors will revert to the strength of the arguments when presented

with equal complexity of expert testimony from the prosecution and defense; in effect

ignoring the expert testimonies but determining their verdict based on the strength of the

prosecution's arguments. In addition, when presented with weak arguments by simple

defense testimony by complex prosecution testimony, more individuals decided a not

guilty verdict in favour of the defense. This result may suggest that individuals were

affected by the complexity of the prosecution's expert testimony and may have not

believed in the argument therefore deciding against it and reverting to other factors (in

this case the simplicity of the defense's expert testimony) on which to base their decision.

General Discussion

In court litigations, jurors are often in a difficult predicament; they are usually

bombarded with information and are expected to process all of it when deciding on a

verdict. However, previous research has noted that some factors may be more influential

than others. The present study has looked at various variables and indicated that strength

of the arguments has the most influence on juror's decision-making.

Experiment 1 showed that the strength of the prosecution's arguments had the

most influence. As Silzer and Clark (1977) have reported, results such as these are

consistent with the underlying concept of the judicial system, where the burden of proof

lies with the prosecution and not the defense. That is, it is up to the prosecution to present

sufficient arguments which prove beyond a reasonable doubt that the defendant is guilty.

The results of Experiment 2 helped to solidify the evidence that strength of the arguments

do influence juror's decision-making. Specifically, logistic regression models found

strength of arguments to be significant as a main effect variable and as an interaction variable.

Overall, the mean responses for Experiment 1 on the culpability scale revealed that individuals high in need for cognition based their decisions on the strength of the arguments, specifically the strength of the prosecution's arguments. That is, when the prosecution presented a strong argument (regardless of the order of the presentation and regardless of the strength of the defense's argument), individuals high in need for cognition had a tendency to decide guilty. These results are supportive of Petty and Caccioppo's (1986) views of persuasion. That is, individuals high in need for cognition engage in central processing and therefore, carefully scrutinize information presented to them; in this case the strength of the prosecutions argument. In contrast to those individuals high in need for cognition, individuals low in need for cognition had a tendency to favour the order of presentation. Specifically, individuals low in need for cognition had a tendency to favour the last presenter, except when the prosecution presented a strong argument, therefore indicating a recency effect. These results are consistent with our hypothesis and previous research on need for cognition and presentation order, indicating that individuals low in need for cognition may be relatively unmotivated to process extensively the information presented to them, therefore basing their judgments on what they last heard.

Unlike Experiment 1 the overall results of Experiment 2 showed no significant interaction between the predictor variables. This result is possibly due to the restriction for a specific verdict in Experiment 2. That is, individuals were asked to give a verdict of "guilty" or "not guilty" and not asked to determine the degree of guilt as they were asked

to do in Experiment 1. However, the results of Experiment 2 did reveal differences

among individuals high and low in need for cognition and defense's expert testimony.

Specifically, individual low in need for cognition were affected by the complexity of the

defense's expert testimony. This result supports previously reported studies which

indicate when individual's ability to process information is impaired, they rely on a

peripheral cue such as source expertise or, in this case, the simplicity of the testimony.

Why does the defense's expert testimony influence individuals high and low in

need for cognition and not the prosecution's? One possible explanation is the standard

principal of the legal system. That is, it is up to the defense to cast doubt on the

prosecutions arguments that the defendant is innocent. Thus, indicating that jurors may

weigh more heavily the defense's expert testimony more so than that of the prosecution's.

It is important to note here that although the participants in this study were not instructed

on the principles of the law, it has been suggested that this is a generally accepted

principal.

Overall, our results present sufficient evidence to suggest strength of the

arguments, specifically strong prosecution arguments, are the primary influencing factors

for juror's when deciding on a verdict.

Limitations of the Study/Future Research

Several limitations concerning the generalizability of these findings are in order.

First and foremost, participants of this study knew that their decisions carried no real

consequences and therefore may have put less effort into the task than a real court

proceeding. Secondly, the study was limited to university students and may have been

characterized by less heterogeneity in terms of age and educational level than jurors in an

actual trial (e.g., Berkowitz & Donnerstein, 1982). For example, because this study only used university students it may be possible that some students may have been only 17-years-old and not representative of the legal age to be a juror. In addition, university students are not legally obligated for jury duty. Finally, because many conditions existed within the two experiments it resulted in a low subject count for each condition. Therefore, the results may not be representative of an actual environment.

The present study only involved individual judgments which may not be consistent with the actual verdict reached after jury deliberations. It may be a possibility that in a group context the verdicts will change and any individual differences and variables that may have had an influence could diminish or enhance (e.g., MacCoun & Kerr, 1988).

The time spent to complete the experiments was shorter than a normal adversary proceeding and the arguments made by the prosecution and defense in this study most closely resembled that of closing arguments. This is not representative of an actual court proceeding where opening statements and evidence are also presented. For future research it would be valuable to imitate an actual court proceeding where opening statements, closing statement, and the evidence are presented. In addition, some statements in the expert testimonies presented in this study were fiction. For future research it may be important to deliver real-life expert testimonies, therefore eliminating any subjects which may distrust the testimonies and revert to other factors associated with the arguments. For future research, it would also be valuable to use different court cases. Both cases used in this study resembled that of other cases used in jury decision-making and may possibly have been familiar to some participants either from reading

material on juries or associating the material with publicized trials.

A few times throughout this paper I have referenced Silzer and Clark (1977) who have suggested the underlying concept of the judicial system, where the burden of proof lies with the prosecution and not the defense, may be an explanation for the influence of the strength of the prosecution's arguments on juror's decision-making. In a court of law it has been suggested that these are generally accepted principles where an individual is innocent until proven guilty. However, it would have been valuable to include jury instructions where these principles are made evident. This limitation, which should be corrected in future studies, may provide valuable insight into the influence on juror decision-making.

As mentioned previously, the non existence of the culpability scale in Experiment 2 may have inhibited the predictive value of the five predictor variables resulting in reduced interactions. For future research it would be valuable to include this measure.

For future research it may be also valuable to look at the different styles of arguments that the prosecution and defense present. For example, the Pennington & Hastie Story Model suggests that when the arguments are presented in a story-like format jurors are more likely to find the best fit between the story and the various verdicts. Therefore, it may be possible that the style in which the arguments are presented and not the strength of the arguments is the primary influential factor in which jurors base their judgments.

Conclusions

The findings from the present research suggest that there are a variety of factors that influence juror decision-making. The primary influential factor was the strength of the prosecution's argument. These results are consistent with previous research and

suggest that arguments made by the prosecution should consist of strong reasoning and strong evidence in order to influence juror decision-making.

Although, research has indicated that only a small percentage of cases proceed to trial-by-jury (approximately only 10% in North America; Gold, 2002) it is important to note that the decisions rendered can have significant consequences on the lives involved. It is therefore very important that each juror have the ability and motivation to withstand the rigorous task of comprehending all the information presented in court. The need for cognition scale provides a reliable measure of motivation and may be valuable in selecting jurors more capable of processing the arguments. Recently, a 3-item need for cognition scale was developed and found to be reliable (Williams-Piehota, Schneider, Pizarro, Mowad, & Salovey, in press 2003). It would be worthwhile to examine the implications of this scale in the process used to select candidates for jury duty.

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Appendix A

Case Summary

Adams (the defendant) and Zemp have been close friends for years. Recently they began to gamble heavily together and, as matters became involved, met at a tavern to discuss their relationship. After a period of conversation Zemp knocked Adams to the floor and threw an object in his direction. Adams responded by stabbing Zemp in the stomach with a piece of glass.

The law provides that it is unlawful to use more force in repelling an attack than a person believes necessary or than a reasonable person would believe necessary in the same or similar circumstances.

Appendix B

Prosecution and Defense Weak and Strong Arguments

Prosecution Weak Argument. You the jury should find the defendant (Adams) guilty as charged. As I have proven to you in this court of law, and of which I will remind you, the defendant did not stab his friend (Zemp) in self-defense. The defendant entered the tavern and explicitly asked the waitress that he and Zemp were not to be disturbed while in the private room. The defendant then proceeded to the private room, where Zemp was waiting for him, and closed the door. As we heard the first witness (a customer at the tavern) states he heard shouting coming from the private room. In addition, the second witness (the waiter from the tavern) also heard a loud conversation coming from the private room. The waiter, however, took the initiative of opening the door to the private room, but as soon as he did so, the defendant (Adams) told him to stay out. Let me remind you also, that the defendant (Adams) did not call for help when Zemp threw an object in his direction. As a result of the stabbing, my client (Zemp) was hospitalized for 5 weeks and will never be able to work again as a longshoreman. And due to this he was unable to find work for 2 weeks after leaving the hospital.

I ask you, the jury, to make the right decision and find the defendant (Adams) guilty as charged.

Prosecution Strong Argument. In this court, I have shown that beyond a reasonable doubt, the defendant (Adams) is guilty as charged, and did not stab his friend in self-defense. In this closing statement I will remind you of the evidence and facts that have already been shown to you in court, which prove that the defendant is in fact guilty. Our first witness, who took the stand under oath earlier, is a waiter at the tavern in which

the stabbing took place, and was working at the time in which the incident occurred. As he stated earlier, he heard the defendant in the private room fall to the floor, and scream to Zemp, in these exact words, "I ought to kill you for that". Now I will remind you that as you can see for yourself, and as the defendant himself stated, he was not in any way injured when Zemp knocked him to the floor. It was then, after this minor incident, that the event took place and the defendant stabbed the victim (Zemp) with a piece of glass. At that time, the defendant lunged at Zemp with a piece of broken glass, yet Zemp did nothing to defend himself, not even struggle to get the piece of glass out of the defendant's hand. And not only did the defendant stab Zemp once with the broken glass, but twice. At this time, let me remind you, that the defendant does have the honor of holding a black belt, which is awarded to those with high proficiency in karate.

After the stabbing had taken place, the defendant ran out the back door of the tavern, leaving his so-called "friend" behind. After the incident took place, Zemp was hospitalized for a period of time and was in poor health for several months following the stabbing, leaving him in an obvious weakened condition. Now, does this not seem like a guilty man to you? So I ask you in this courtroom today, to find justice in this case, and find the defendant guilty.

Defence Weak Argument. My client, the defendant (Adams), is not guilty as charged. As I have proven to you in this court of law, and of which I will remind you, as the facts stand you the jury cannot indict my client. The defendant (Adams) is not guilty. When the defendant (Adams) arrived at the tavern he found Zemp waiting for him in a room at the rear of the tavern that was usually reserved for private parties. The defendant entered the room and started the meeting. During the meeting the defendant (Adams) told

Zemp they should end their relationship before serious trouble developed between them. Zemp then raised his fist and swore loudly at the defendant during the discussion. Let me remind you that Zemp has been a lightweight boxing champion of the First Marine Division, and is therefore known to have strength. As well, as we heard from Zemps' gambling associates, Zemp had a reputation as a "poor loser". Let me also remind you that my client, the defendant (Adams), is somewhat nearsighted and wore glasses the night of the incident; indicating that his vision may have been blurred. My client has also never been known to have carried a gun or knife in his life. You, the jury, do not have any reason to indict my client. The defendant (Adams) is not guilty as charged.

Defense Strong Argument. In this court, I have shown you evidence that proves the defendant (Adams) had only the intention to defend himself against Zemp, and not to commit any such act of which he is being accused in this court. In this closing statement I will remind you of the evidence and facts that have already been shown to you in court, which proves that there is much doubt in the prosecutions case, and that the defendant is not guilty. As witnesses have stated earlier, Zemp has a well-established reputation for getting into fights and heated arguments. This is not the first time in which Zemp has been in this sort of fight. It has also been shown that Zemp usually carries a weapon on him, and the defendant, being his friend, was well aware of this fact. A witness also stated, who is a friend of both Zemp and the defendant, that before the defendant had met Zemp at the tavern where this incident occurred, the defendant had told the witness that he had hoped that he could settle the dispute between him in Zemp at this meeting. He also said that he hoped it could be settled peacefully and in a friendly manner, because after all, they were friends. Now, once at the tavern and in the private room, Zemp and

the defendant began their discussion. Another witness, that was on the stand earlier, stated that he was a customer at the tavern on the date and time when the incident took place. He was seated near the private room that Zemp and the defendant occupied and could hear much of the conversation. One part of the conversation he heard quite clearly was the defendant telling Zemp to "calm down". As the defendant told us earlier, once the argument grew heated, the defendant was the one who turned away from Zemp and walked towards the other side of the room, wanting the argument to cool down. Now, after the stabbing took place, the defendant was worried about his friend and tried to stop the bleeding of his wound. Another witness, who is a waiter at the tavern and was working at the time of the incident, stated on the stand that he had entered the private room after the stabbing and had witnessed the defendant trying to stop the bleeding. Also, as the police reports show, the defendant made a full statement to the police regarding the incident directly after the incident took place, even though he was in no way required to do so. Now does this sound like a man who would really want to hurt his own friend? So I ask you in this courtroom today, to find justice in this case, and find the defendant not guilty.

Appendix C

Verdict

In the case you have just read about, how do you find the defendant? (Please circle only

one answer)

GUILTY   **NOT GUILTY**

Appendix D

Verdict Scale

Because some people may find it difficult to decide guilt or innocence on a two-point scale, how would rate the defendant on a scale of 1 to 7 ("1" being "Not guilty at all" and "7" being "Completely guilty")?

1	2	3	4	5	6	7
Not at all guilty					Completely guilty	

Appendix E

Need for Cognition Scale

Write in the number that best fits your view:

1	2	3	4
completely false	mostly false	mostly true	completely true

_____1. I would prefer complex to simple problems.

_____2. I like to have the responsibility of handling a situation that requires a lot of thinking.

_____3. Thinking is not my idea of fun.

_____4. I would rather do something that requires little thought than something that is sure to challenge my thinking abilities.

_____5. I try to anticipate and avoid situations where there is likely a chance I will have to think in depth about something.

_____6. I find satisfaction in deliberating hard and for long hours.

_____7. I only think as hard as I have to.

_____8. I prefer to think about small, daily projects to long-term ones.

_____9. I like tasks that require little thought once I've learned them.

_____10. The idea of relying on thought to make my way to the top appeals to me.

_____11. I really enjoy a task that involves coming up with new solutions to problems.

_____12. Learning new ways to think doesn't excite me very much.

_____13. I prefer my life to be filled with puzzles that I must solve.

_____14. The notion of thinking abstractly is appealing to me.

_____15. I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought.

_____16. I feel relief rather than satisfaction after completing a task that required a lot of mental effort.

_____17. It's enough for me that something gets the job done; I don't care how or why it works.

_____18. I usually end up deliberating about issues even when they do not affect me personally.

Appendix F

Criminal Case

Mr. Grady Robertson was a happily married man of seven years. He was a computer analyst with B.C. Corp and had a consistent work schedule of 9am to 5pm Monday to Friday with a one-hour lunch break from 12pm to 1pm.

On Wednesday November 13, 2002 at approximately 4:30pm Mr. Robertson received a phone call at work from the RCMP telling him that they needed him to identify his wife's body. His wife and another man were found murdered in a rented room at "Murdock's Motel" which is located near a major highway. This was a motel frequented by transients and prostitutes. Upon arrival at the scene, forensic experts reported that Mrs. Robertson and her companion were murdered with a steak knife; they each had numerous deep stab wounds to the chest. Mr. Robertson is now being tried in the Supreme Court of British Columbia for murder in the first degree on both counts.

Appendix G

Criminal Case Arguments for the Prosecution and Defense

Prosecution Weak Argument. Ladies and gentlemen of the jury, I have full

confidence that you will make the right decision today by finding the defendant, Mr.

Robertson, guilty of murdering his wife and her companion. To begin, I would like to tell

you about Mr. Robertson's work schedule, specifically his lunch hour. Mr. Robertson has

a full hour for lunch from 12pm to 1pm, indicating he had plenty of time to commit

murder. In addition, Mr. Robertson's employers stated that he was very aggressive that

specific day. Police also stated that they found black leather gloves in the trunk of Mr.

Robertson's car. Mr. Robertson's neighbours reported to the police that they heard Mr. &

Mrs. Robertson arguing that morning. As well, Mr. Robertson had a doctor's appointment

that day which he cancelled. A few weeks prior to the murders, Mr. Robertson had

confided in a close friend that he was having marriage problems. And to make matters

worse Mr. Robertson's parents were supposed to come visit them that weekend but Mr.

Robertson cancelled the visit that day. Having stated all these points, ladies and

gentlemen of the jury I know you will agree with me when I tell you that Mr. Robertson

is guilty of murder. You will now hear from our expert witness who will testify to the

same point.

Prosecution Strong Argument. Ladies and gentlemen of the jury, I have full

confidence that you will make the right decision today and find the defendant, Mr.

Robertson, guilty of murdering his wife and her companion. Let be begin by talking

about Mr. Robertson's alibi on that horrendous day. Mr. Robertson stated that he had

lunch with a friend for 30 minutes of his break; however he was unable to give a strong

alibi for the next 30 minutes. In addition police records indicate that Mr. Robertson was 20 minutes late returning to work; and his work is timed to be only a 20 minute walk from the scene of the crime when walking through the back streets. A few weeks prior to the murders, Mr. Robertson confided in a friend that he suspected his wife was cheating on him and specifically stated that if she was cheating on him he would kill her. In addition approximately around the same time, Mr. Robertson had taken out $500,000 in life insurance on his wife. A couple of weeks prior to the murders, Mrs. Robertson admitted herself into the hospital for severe bruises where she confessed to the on-call nurse that her husband had hit her. Police reports also indicate that Mr. Robertson had two knife wounds in his left hand from a steak knife that same day. At the scene of the crime investigators reported that Mrs. Robertson was found to have skin fragments under her finger nails matching that of her husbands Mr. Robertson. In addition, Mr. Robertson's hair was found at the scene of the crime. Having stated all these points ladies and gentlemen of the jury I know you will agree with me when I tell you that Mr. Robertson is guilty of murder. You will now hear from our expert witness who will testify to the same point.

Defence Weak Argument. Ladies and gentleman of the jury, today I will be presenting to you the case of my client Mr. Grady Robertson and providing proof of his innocence. I know you the jury will come to the right decision and set my client free so that he may mourn the death of his wife in peace. Mr. Robertson has already clarified his whereabouts on that specific day. During his lunch hour Mr. Robertson went for a walk and bumped into a friend on his way back to work. During his morning break Mr. Robertson bought a beautiful bracelet for his wife to surprise her. A few days prior to the

murders, Mr. Robertson confided in a friend that he loved his wife and would never hurt

her regardless of how she hurt him. In addition, Mr. Robertson had a romantic vacation

set up for that up coming weekend for his wife and himself. When asked to identify the

body of his wife, Mr. Robertson acted like any normal person would; he was shocked,

heartbroken and confused. As hurt as Mr. Robertson was to find out about his wife's

death in a hotel room with another man, he still took care of the funeral arrangements and

provided the best ceremony possible for their family and friends. Now ladies and

gentlemen, you will agree with me when I say that my client Mr. Robertson is NOT

guilty. This man has done nothing but good for his wife. You will now hear from our

expert witness who will testify to the same point.

Defence Strong Argument. Ladies and gentleman of the jury, today I will be

presenting to you the case of my client Mr. Grady Robertson and providing proof of his

innocence. I know you the jury will come to the right decision and set my client free so

that he may mourn the death of his wife in peace. On that horrendous day Mr.

Robertson's car was parked in his usual spot in the employee garage all day. Police

reports indicate his car did not move. In addition, Mr. Robertson's doctor has testified

that Mr. Robertson has knee problems and is therefore unable to walk fast and definitely

not for an hour; thus indicating he would never have been able to reach the motel,

complete the murder and return to work during his lunch hour. Mr. Robertson told police

that he went for a quick lunch with a friend where he ate a steak and accidentally cut his

left hand. Mr. Robertson then decided to go for a short walk to digest; while on his walk

Mr. Robertson bumped into an old friend and had a lengthy conversation. A few weeks

prior to the murders Mrs. Robertson talked to Mr. Robertson about taking out $500,000

life insurance on each other for their own safety. Mr. Robertson did not want to but

agreed in case something happened to him; he would be comforted knowing his wife was

taken care of. Mr. & Mrs. Robertson had been seeing a marriage counselor for months

before the murders. The marriage counselor testified that the couple was progressing and

had no indications of any problems. In addition, the counselor also testified that she had

individual sessions with Mr. & Mrs. Robertson, and neither ever indicated that they were

cheating on each other or had suspected the other person cheating. On that specific day,

Mr. Robertson's secretary stated that Mrs. Robertson had called earlier that morning and

seemed very cheerful and excited to speak to her husband; thus indicating that their

relationship was in good spirits as other friends had already indicated. Finally, forensic

scientists have reported the stab wounds to be deep and very forceful. They also reported

that the person must have been at least 6 feet tall and very muscular. This indicates that

the killer is not Mr. Robertson due to his small physique. Ladies and gentlemen of the

jury, having said all this I know you will come to the right conclusion and set my client

free. You will now hear from our expert witness who will testify to the same point.

Appendix H

Criminal Case Expert Testimonies for the Prosecution and Defense

Prosecution Expert Testimony

Credentials: Mr. Matthew Irvine is a forensic scientist who is specialized in DNA testing and has extensive experience in working with the RCMP.

Simple Testimony. DNA is material that governs inheritance of eye color, hair color, stature, bone density and many other human traits. In my opinion it is obvious that Mr. Robertson killed his wife and the other man. A strand of hair was found at the scene of the crime and it did not belong to Mrs. Robertson or her companion. Our DNA tests show that the hair particle belongs to Mr. Robertson. In addition, Mrs. Robertson had skin fragments underneath her fingernails, indicating that she may have scratched an individual in a struggle. Again, our DNA tests show that the skin fragments match that of Mr. Robertson. In my opinion, it is very possible that Mr. Robertson was at the scene of the crime.

Complex Testimony. In our full service serology laboratory we routinely perform IEF electrophoresis and DNA analysis with our Analytic Genetic Programs which run the DNA synthesizer. It is there where we acknowledged the fact, by completing a gene expression RFP analysis, that the hair particle disclosed at the crime scene, by using the Universal Block Transfer, was that of Mr. Robertson. In addition, with the help of a molecular genetics, traces of immunoelectrophoresis fragments were found, by using a purified immunoglobulin, from underneath Mrs. Robertson's fingernails. In addition, we also ran the epithelial cells through the Anitserm Immuno Program where traces of the antibodies detected P30 crossover. This indicates that we are unable to exclude Mr.

Robertson as the donor of the sample.

Defence Expert Testimony

Credentials: Mr. James McDonald is a forensic scientist who specializes in DNA testing

and has extensive experience in working with the RCMP.

Simple Testimony. It is in my opinion that Mr. Robertson should not be

convicted for the crime based on the arguments provided by the prosecution. Although a

hair particle was found at the scene of the crime and experts have clearly stated it to be

that of Mr. Robertson's, we can not make the assumption that Mr. Robertson was at the

crime scene. This is due to the fact that Mr. & Mrs. Robertson share a bed, wash their

clothes together and physically live together. There is a 99% chance that Mrs. Robertson

carries particles (i.e., hair, skin, etc.) of Mr. Robertson with her and vice versa. Therefore,

there is a .004% probability that Mr. Robertson was actually at the scene of the crime.

That is a 1 in 1,000,000,000 chance. In my opinion, there is no hard evidence to convict

this man.

Complex Testimony. Detecting alleles under certain circumstances is a

theoretical possibility and was demonstrated by using DQ alpha. However, in theory, the

loss of statistical significance of alleles is due to what is called the "stochastic effect". In

addition to the stochastic effect, a PCR phenomenon called "differential amplification"

may play a role when DNA evidence is said to be found. Therefore the discovery of Hae

III enzyme particles at the crime scene can be very misleading due to the fact that the

human organisms (i.e., Mr. & Mrs. Robertson) co-habitat and co-mingle their garments.

Therefore, it is in my opinion that the DNA evidence exposed is extensively degraded.

In addition, using the DNA-array experiment and a data format -- Microarray Markup

Lane (MAML) -- for communicating this information where MAML is based on the

Extensible Markup Lane XML, the statistical significance of probability that Mr.

Robertson was at the crime scene is .004%. MAML is independent of the particular

experimental platform.

Saint Mary's University

Certificate of Ethical Acceptability
of
Research Involving Human Subjects

This is to certify that the Research Ethics Board has examined the research proposal or other type of study submitted by:

Principal Investigator: Karene Saad

Name of Research Project: Factors Influencing Juror Decision Making: Examining
                                     Primacy/Recency Effects and Individual Differences

REB File Number: 2003-030

and concludes that in all respects the proposed project meets appropriate standards of ethical acceptability and is in accordance with the Tri-Council Policy Statement on the Conduct of Research Involving Humans. Please note that approval is only effective for one year from the date approved. (If your research project takes longer than one year to complete, submit form #3 to the REB at the end of the year and request an extension.)

Date: *Feb. 28, 2003*

Signature of REB Chair:

Dr. John E. MacKinnon