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# The Impact of Jury Instruction Formatting and Insanity Defense Consistency on Juror Knowledge and Decision-Making

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Running head: JURY INSTRUCTION FORMAT AND INSANITY DEFENSE  
UNDERSTANDING

**THE IMPACT OF JURY INSTRUCTION FORMATTING AND INSANITY DEFENSE  
CONSISTENCY ON JUROR KNOWLEDGE AND DECISION-MAKING**

by

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**SUBMITTED TO SCRIPPS COLLEGE IN PARTIAL FULFILLMENT  
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**PROFESSOR GROSCUP**

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### Abstract

Past literature has indicated that jury instructions are not written in ways that result in optimal juror comprehension, and can be improved through various ways of simplification. Prototypes of the insanity defense have also been found to influence juror decision-making. Additionally, individual factors such as attitudes toward and myth endorsement of the insanity defense can influence verdict. The following study explored these effects of jury instruction format, insanity defense consistency, and participant factors on jury understanding and decision-making. Three hundred and eighty jury eligible community members were recruited online for this study. Participants were first asked questions pertaining to attitudes and myths about the insanity defense. Afterwards, each participant read one of two vignettes (an insanity defense consistent case and an insanity defense inconsistent case), and then read one of three jury instructions (traditional, simplified, or flow-chart versions). The participants then reached individual verdicts and answered factual questions about the insanity defense and their perceptions on the defendant. Results indicated that simplified instructions increased participant knowledge over the traditional and flow-chart instructions, but did not influence verdict selection overall. Consistency, myth endorsement, attitudes, and perceptions of the defendant were also all found to contribute to the verdict. These results contribute to the current research on comprehension of jury instructions, especially in the context of an insanity defense case, and may provide additional information for attorneys to consider during the *voir dire* process.

*Keywords:* jury instructions, jury instruction format, juror decision-making, prototype, mental illness, insanity defense

The Impact of Jury Instruction Formatting and Insanity Defense Consistency on  
Juror Knowledge and Decision-Making

The insanity defense is a controversial and widely discussed topic in the area of legal psychology. In criminal trials, this type of defense states that a defendant cannot be held responsible for their actions due to a psychiatric disorder. There are several definitions of legal insanity, with the M’Naghten Rule as the most widely used one in the United States. The M’Naghten Rule is a legal test that centers on the defendant’s failure to understand the nature of the act, or the moral wrong of their actions. Defendants who meet one of the two criteria of this test of legal insanity may then be found not guilty by reason of insanity, or NGRI. Defendants who are deemed legally insane often serve reduced sentences or are committed to psychiatric facilities.

There are many misconceptions about mental illnesses and the insanity defense, especially in the current era of popular media. The general public is often bombarded with gruesome stories on the news about “crazy” individuals who commit horrendous crimes against others who may plead the insanity defense. TV shows and films also do not shy away from depicting the mentally ill in violent situations, especially on police dramas and detective shows. Such characterizations of the mentally ill surely shape the public’s idea of the thoughts and actions of a perceived deranged human being. However, these ideas may not align with the truth, as perceptions of dangerousness and the way in which illness is manifested may be misguided. It can be problematic when these attitudes spill over into the legal world. Such misunderstandings of the mentally ill can have especially grave consequences in juries, where individuals decide the fate of another person.

Another highly important part of the legal process that can influence a juror’s idea of a legal concept is the presentation of jury instructions. In the judicial system, it is extremely

important to have laws applied in the way they were intended. Jury instructions, which are a set of rules in the legal system written especially for jurors, are believed to help jurors apply the law in a legally correct way. Jury instructions define legal terms that may be difficult for jurors to understand, and give a sense of how the law is to be interpreted. However, jury instructions may not provide this information in the most effective way possible because of use of jargon, confusing language, and poor structure, leading to gaps in knowledge and failure to appropriately apply the law to the given case (Charrow & Charrow, 1979; Heffer, 2008; Ogloff & Rose, 2005; Severance & Loftus, 1982). Given the importance of these jury instructions during the trial process, it is imperative that jurors understand them as clearly as possible.

The current research aimed to understand the relationship between jury instructions and understanding of the insanity defense, namely the formatting of jury instructions and its impact on both comprehension and verdict selection in a potential insanity defense case. Prototypes of the insanity defense were also a main topic of interest in this research, to investigate whether or not verdict selection would differ depending upon whether considering an insanity defense consistent or inconsistent cases presented. Attitudes toward the insanity defense were examined as a mediating factor in the interactions above.

### **Attitudes toward Mental Illness**

A defendant's mental state is a crucial issue considered in many criminal trials to determine motivation and guilt, or *mens rea*, in a crime. The guilt of the defendant is usually determined by a jury, chosen by attorneys through the *voir dire* process. Because *voir dire* is an important legal process, it is imperative to increase the understanding of potential biases that jurors may have regarding certain legal topics. According to extensive research conducted in the

past several decades regarding perceptions on mental illness, there are many negative attitudes toward and misconceptions of the mentally ill (Angermeyer, Matschinger, & Schomerus, 2013; Nee & Witt, 2013; Parcesepe & Cabassa, 2013; Stuber et al., 2014) . These public perceptions spill over into the legal setting, especially in cases regarding insanity, as jurors are not immune to these social influences.

Past psychological research regarding attitudes toward the mentally ill have investigated many different factors that may influence juror decision-making in insanity defense cases. Mentally ill people are often viewed in a negative light in the general public, and are a highly stigmatized group both in and out of the legal system (Parcesepe & Cabassa, 2013; Schomerus et al., 2012). There are many stigmatizing beliefs held by the general public about the mentally ill, including increased perceptions of dangerousness, shamefulness, and incompetency (Parcesepe & Cabassa, 2013). One popular stigmatizing belief is that people with mental illness have a higher risk of criminality than people without a mental illness (Nee & Witt, 2013). This belief in particular may lead to the demonizing of mentally ill individuals even more in legal settings. Another belief is that the mentally ill are less competent when making decisions for themselves than people with other issues (Martin, Pescosolido, Olafsdottir, & McLeod, 2007). These types of beliefs perpetuate the notion that the mentally ill are often incapable of controlling their actions and do not have the capacity to take care of themselves.

Some of these negative beliefs are particularly aimed at certain mental illnesses. Research has found that people with schizophrenia in particular have been increasingly stigmatized over the years in comparison to other types of mental illnesses (Angermeyer et al., 2013; Stuber et al., 2014). Individuals who suffer from some mental illnesses such as depression and substance

dependence were also seen as more violent toward others, in comparison to individuals suffering from “regular problems” or physical illnesses (Martin et al., 2007).

The prevalence of stigma toward the mentally ill can be explained through several paradigms. A social cognitive paradigm can explain this stigma by explaining the cognitive process between discriminative stimuli and discriminative treatment. Discriminative stimuli act as signals that bring up stereotypes about a particular disadvantaged group, for example: “individuals who talk to themselves reveal a sign of dangerousness”. Another example of a discriminative stimulus related to mental illness is flat affect, which may trigger stereotypes of incompetency and instability. Goffman (1963) investigated this and found that individuals with mental illnesses have distinctive traits which may separate them from other disadvantaged groups. Such traits included psychiatric symptoms, deficits in social skills, and physical appearance (Penn & Martin, 1998). Because of the complex nature of the manifestations of mental illness, individuals rely on such outward clues to determine mental illness. Through these clues, individuals are sorted into categories of normality and abnormality. In accordance with labeling theory, such traits allow the public to sort an individual into part of a marginalized group, which sometimes then produces more stigmatizing behaviors toward the individual being labeled (Penn et al., 1994).

Social attribution models can additionally explain how individuals view mental illnesses. After seeing the manifestation of mental illness in individuals through external stimuli, the public takes into account factors such as the stability of the cause of mental illness and controllability of the symptoms while making decisions about that person (Weiner, Perry, & Magnusson, 1988). This process often results in an affective response and behavioral reaction by the public, which can be positive or negative (Weiner et al., 1988). Specifically, Weiner et al. also noted that more

negative responses such as fear or punitive behaviour toward the mentally ill can be attributed to how controllable they are, as individuals who view mental illness as something controllable are more likely to view the mentally ill much more responsible for their behavior. Such models provide a framework for the reasons for the many negative perceptions of mentally ill people in society, and can further explain the attitudes that are formed around mental illness.

Exposure to negative information on mental illness also has an impact on people's attitudes. Increasing public interest in high-profile cases regarding mental illness and crime in the media may be a driving force of such negative attitudes, as media portrayal has shown to have a great impact on the public's perceptions of mental illness (Corrigan, Powell, & Michaels, 2013). These portrayals within media usually perpetuate three key negative stereotypes: mentally ill individuals are dangerous and are to be feared, they have childlike perceptions of the world, and they are rebellious in nature (Wahl, 1995). Similarly, increased exposure to portrayals of mental disorders on fictional media such as television and movies has been shown to decrease knowledge of mental illnesses such as schizophrenia and obsessive-compulsive disorder (Kimmerle & Cress, 2013). Although media can play a large part in shaping attitudes toward the mentally ill, real-life interaction with and knowledge of mental illness also have an integral role in determining attitudes.

There are some distinct factors within individuals that are correlated with more negative perceptions of the mentally ill. One such factor is one's social distance from the mentally ill. When people are more socially removed from people with mental illnesses in their day-to-day lives, they become more likely to adopt negative attitudes toward the mentally ill. Studies have shown that mental health professionals are much more likely to have positive attitudes toward the mentally ill due to close social distance (Stuber, Rocha, Christian, & Link, 2014). A related

factor is previous positive contact with the mentally ill, which is correlated with a decrease of stigmatizing actions and beliefs (Thornicroft, Brohan, Kassam, & Lewis-Holmes, 2008). These studies are all consistent with Allport's contact hypothesis, which states that interpersonal contact between majority and minority groups is one of the best ways to reduce prejudice and discrimination (Allport, 1954). Another possible factor that may impact perceptions on mental illness is previous knowledge about mental illness. There have been many knowledge-based models aimed to decrease the stigma of the mentally ill by focusing on educational materials for the public (Thornicroft et al., 2008). However, it has been found that increased mental health literacy was not necessarily linked with more positive attitudes towards the mentally ill (Angermeyer, Holzinger, & Matschinger, 2009; Schomerus et al., 2012). Overall, it is important to take into consideration individuals' experiences with underprivileged groups such as the mentally ill to understand possible reasons for discrimination.

As jurors are selected from the general public, they are not immune from having these negative attitudes as well. These beliefs are seen most prominently in cases involving the insanity defense, as they are relevant to the cases at hand. It has been found that negative attitudes and misconceptions of the insanity defense are also correlated with positive attitudes towards the death penalty, which may be problematic as jurors are more likely to favor the death penalty in cases of legal insanity (Bloechl, Vitacco, Neumann, Erickson, 2007). This highlights a potential punitive element to jurors' decisions. On the other hand, positive attitudes towards the insanity defense are found to be correlated with positive attitudes towards mental illness. These positive attitudes can be gained through previous experience with psychotropic medications, psychologists, or psychiatrists (Butler, 2006). It is likely that this exposure to the mental health world allows for an additional sense of empathy for individuals with similar experiences.

**Attitudes toward Insanity Defense/Insanity Defense Myths**

The prevailing negative attitudes about mental illness often manifest themselves in the legal system in people's endorsement of myths regarding the insanity defense. In previous literature, Perlin (1994a) most notably found several distinct myths that lead to the false beliefs about the insanity defense. Such beliefs are categorized as myths because extant empirical evidence shows such claims to be incorrect. One example of a widely held myth states that defendants found not guilty by reason of insanity (NGRI) spend less time in custody than defendants found guilty of the same crime. However, research has shown that defendants found NGRI were more likely to spend a longer time in confinement for both violent and non-violent crimes (Silver, Cirincione, & Steadman, 1994; Steadman, Mulvey, & Monahan, 1993). Another myth is that defendants are usually faking insanity to receive a less harsh punishment for their crime. This has also been proven to be untrue, as the majority of insanity defendants have previously been institutionalized for mental health issues (Jeffrey, Pasewark, & Bieber, 1988). Public estimates of the use of the insanity defense are also much higher than its use in actuality. The public's estimate of the use of the insanity defense is around 37%, although it is used in less than 1% of all cases (Pasewark & Seidenzahl, 1979; Perlin, 1996a). Hans and Slater (1984) also confirmed that jurors had many misconceptions surrounding the insanity defense, including the beliefs that the insanity defense is a 'loophole' within the system, and that defense attorneys often help their clients escape prison time by making the case of insanity. Other beliefs about the insanity defense include the lack of risk in pleading insanity, and the ease of feigning insanity (Vitacco et al., 2009).

As described earlier, one way to explain these negative beliefs is through the false portrayal of the insanity defense in the media, especially in fictional media (Kimmerle & Cress, 2013). Perlin (1996b) also blamed the “culture of punishment” surrounding the insanity defense that was especially prominent in the United States, which increased the level of often visceral and punitive responses toward defendants who plead insanity. Additionally, notable high-profile cases in recent history are also important in shaping public perceptions. Especially influential was the case of John Hinckley Jr., who attempted to assassinate President Ronald Reagan in 1981. His sanity was the main topic of discussion in the media at the time, which magnified when conflicting reports of his sanity between the defense and the prosecution arose during the trial process. This particular case became one of the most publicized legal battles of the decade. He was ultimately found not guilty by reason of insanity, which resulted in a major outcry around the country, and has indeed shaped the public’s perceptions of the insanity defense ever since (*United States v. Hinckley*, 1981). Hinckley is still currently institutionalized, but has stirred up controversy in recent years due to his petition requesting for more freedom. He was denied this increase of freedoms, which reflects the fact that legally insane individuals are held for very long and indeterminate periods of time.

Previous research has found ways to combat myths about the insanity defense. A study in the presentation of facts about the insanity defense found that negative juror attitudes toward the insanity defense decreased when empirical evidence refuting common myths of the insanity defense were presented clearly (Corrigan et al., 2001). Although addressing myths could be important in affecting legal decisions, many other factors can determine the decisions a juror makes when facing an insanity defense case. One such example would be the prototypes a juror has about mental illness and its relation to the insanity defense.

### **Prototypes of Insanity**

Prototypes are characterized as an ideal version of a certain concept. The concept of prototypes in the area of categorization was introduced by Rosch (1973). Rosch argued that concept formations are often arbitrarily formed, and that prototypes often include structured categories within. These structured categories are groups of attributes ranked in importance depending on their relevance and significance to a particular concept. Prototypes are formed within categories so that some exemplary items may be more 'central' to the idea than others. For example, the category of 'bird' would include species such as sparrows, ducks, penguins, and ostriches. However, sparrows and ducks would be more central to the idea of what a bird is than penguins or ostriches. This is because penguins and ostriches do not share a central component of what a bird embodies (i.e., the ability to fly), which distances them from core members of the bird category. The ease of categorization is dependent on the number of features that a member of a category shares with the ideal prototype. Using the same logic, there are components of and ideas about insanity and insanity defendants that are more central to the category than others.

Prototypes are especially important in cases of insanity, as jurors may be quick to dismiss a defendant's mental illness on the basis that it does not align with their own prototypes of insanity. A study on insanity defense prototypes in undergraduate students by Finkel and Groscup (1997) examined "typical" and "atypical" narratives of defendants who were successful or unsuccessful in pleading insanity. The results showed that more "successful" defendants were described as young, male, and had a long psychiatric history. The ideal defendant would also have had committed the crime against a stranger due to grandiose delusions as a result of mental

illness. A similar study by Skeem and Golding (2001) found three different prototypes of insanity in former jurors: the “Severe Mental Disability” prototype, the “Moral Insanity” prototype, and the “Mental State Centered” prototype. The “Severe Mental Disability” prototype describes defendants who are disabled in both development and mental capacity. The “Moral Insanity” prototype involves a defendant who would fit the description of a psychopathic individual with a lack of conscience. The final prototype, “Mental State Centered”, describes a defendant that lined up the most with the M’Naghten rule of determining insanity- in which an insane individual is one who could not distinguish right from wrong and also could not understand the consequences of his or her actions, is deemed most prototypical. Because individuals’ prototypes can have an immense impact on decision-making in legal settings, it is this “Mental State Centered” prototype that results in more NGRI verdicts than either guilty or not guilty verdicts. Using prototype theory, it can be inferred that cases that share the most elements with this particular prototype may be more likely to have successful insanity pleas than cases which stray away from this ideal.

Other studies further show this link between prototypes and juror understanding and judgment. The congruence of juror prototypes of insanity and the case presented to the jury can have an impact on jury decision-making, as individuals with more prototypical ideas of insanity were more likely to deem insane individuals who most fit their prototype (Skeem & Golding, 2001). Skeem and Golding (2001) have not only found that juror attitudes affect verdict decisions, but also that prototypes of insanity may also bias jurors’ interpretation of information in insanity cases. Another study found that congruence in prototypes of schizophrenic symptoms and prototypes of insanity in jurors increased the likelihood of an insanity judgment (Roberts, Golding, & Fincham, 1987). However, information that clashes with juror prototypes may lead

jurors away from the correct legal judgment. A study by Smith (1993) found that much more legally relevant decisions are made when jurors' prototypes of the insanity defense were debunked in detail, and replaced with more relevant definitions afterwards. Such studies suggest that presentation of correct information can have an impact on juror decision-making. One way in which correct information can be transmitted to potential jurors is through the instructions to the jury.

### **Jury Instructions and Jury Comprehension**

Legal instruction given to jurors can have an immense bearing on jurors' understanding of legal concepts presented to them and the verdicts they make. These instructions, at their core, aim to arm the jurors with relevant knowledge on the decision-making tasks at hand, so that jurors can reach legally sound conclusions from the facts of the case. However, many previous studies on jury instructions have uncovered many comprehension issues that jurors face when reading them (Charrow & Charrow, 1979; Heffer, 2008; Ogloff & Rose, 2005; Severance & Loftus, 1982).

Although jury instructions are meant to improve the efficiency and accuracy of decision-making by being adaptable across cases, pattern instructions (a model set of instructions written for implementation in a variety of sections in a penal code) in the United States have been found to be complex and full of legal jargon (Heffer, 2008). Often times, the inclusion of complex language is to appeal to higher courts, which may not approve of the straying from official instructions. Since the 1960s, studies conducted to determine the comprehensibility of jury instructions. As jurors often do not have formal legal training, the depth and amount of legal information presented in jury instructions often add to jurors' confusion on the topic at hand. Jury

instructions are often written without having the target audience in mind, and neglect to address potential complications in comprehension that may arise. Charrow and Charrow (1979) were two of the first researchers to find several confusing features of jury instructions that were prevalent. These features included difficult legal terms and words that were not explained properly to the jurors, word lists that may hinder recollection in jury members, and multiple negation used in sentences which make sentences difficult to follow, among other psycholinguistic issues. After the Charrows rewrote parts of the problematic jury instructions to include more “plain English”, they found marked improvements in juror recollection and understanding of the concepts, although still only correctly remembering about half of the instructions. Another study conducted by Severance and Loftus (1982) highlighted similar linguistic problems rife in pattern jury instructions, especially the use of difficult concepts without explanation. Studies by Elwork, Sales, & Alfini (1982) showed increased juror knowledge to up to 80% by rewriting instructions using the principles suggested by the Charrows. Several other studies have also attempted to improve jury instructions’ meanings and logicity through similar psycholinguistic principles, including using clearer paraphrases of legal terms, avoidance of jargon, and simplification of sentence structures (Ogloff & Rose, 2005; Severance & Loftus, 1984a and 1984b).

Another highly problematic feature of jury instructions is the way that they are conceptualized. For example, many instructions place a high value on jurors knowing the different levels of doubt up to ‘beyond a reasonable doubt,’ when in fact describing what level of proof is required can be enough to focus jurors on the task at hand (Heffer, 2008). Furthermore, pattern jury instructions have been found to falsely assume juror knowledge; in particular terms used that may require more explanation in a particular context. For example, the words “mitigating” and “aggravating” are often poorly understood in context of jury instructions, as

they have different connotations outside of law (Tiersma, 1995). Such issues in comprehension could potentially be resolved through an explanation of terms, in addition to the replacement of the terms.

There are some additional ways in which jury instructions could be improved to aid understanding and decision-making. Some studies have attempted to improve comprehension through audio-visual formats, which have been found to greatly enhance understanding in individuals with previous limited knowledge (Brewer, Harvey, & Semmler, 2004). Some other attempts to increase juror understanding include more interactive and learner based jury instructions, as well as the increased use of deliberation between jurors after reading pattern jury instructions (Miles & Cottle, 2011). Another way jury instructions have been explored was through reformatting the way in which instructions are laid out for a jury. However, there has been limited research on the formatting of jury instructions and the possible increase of juror comprehension of the insanity defense.

Previous research suggests that grouping relevant information together and creating a logical flow allow for a better understanding of information presented in a text-based way. With a better underlying structure, individuals are more able to extract information from materials presented to them. A study by Graesser (1981) indicated improvement of recollection and comprehension when a text has an obvious and clear structure. Using this method, jury instructions that are modified to allow for a clear flow of information may be more effective than regular pattern jury instructions.

Additional research on information formatting involves pictorial dissemination of information. Glenburg and Langston (1992) have found that instructional texts made into flow-charts improve understanding in individuals more so than when the same instructional texts were

made into diagrams with information. The researchers suggested the way in which the components were arranged spatially in the flow-chart version were more conducive for information processing than the diagram. This can be further explained with Bartlett's (2013) schema theory, which states that memory operates in a way that creates patterns to categorize information and to find relationships between them. This type of theory can shed light onto how flow-charts and other clearly-patterned instructions organize information in such a way that is easier to draw information from than large, ungrouped blocks of text.

One of the more recent studies on jury instruction format was conducted by Semmler and Brewer (2002), who looked at different variations of information presentation to jurors, including a judge's summary and a flow-chart version. It was found that jurors given standard instructions paired with either a summary or flow-chart did better than jurors who were given only the standard instructions. Wiener et al. (2004) also found that comprehension of both declarative and procedural legal components of a criminal case increased through instructions in both simplified and flow-chart versions. Unfortunately, despite the fact that modified versions of pattern instructions seem to improve understanding within jurors, the degree to which they improve is still not optimal.

Only several studies on jury instructions and the insanity defense have been conducted (Finkel, Shaw, Bercaw, & Koch, 1985; Finkel & Handel, 1988; Finkel, 2000). One of the first studies tested several versions of insanity test instructions across different scenarios, and no significant differences across the instructions were found apart from a paranoid schizophrenic case (Finkel et al., 1985). A similar study about "commonsense justice", which is what ordinary people believe is just (versus actual law), found that participants given no instructions did not significantly differ in their verdicts than participants given instructions (Finkel & Handel, 1988).

This contradicts previous research on the comprehension of modified instructions. However, a review of literature which focused on jury nullification in insanity cases (when a jury believes that the violation the defendant is charged with is falsely applied), was said to be explained through the failure of jury instructions (Finkel, 2000). It was also argued that comprehension of jury instructions is difficult in both recollection and application, which might inhibit jurors from making a legally sound conclusion.

Several researchers have suggested that there may be possible ceiling effects for improving jury instructions, given previously unsuccessful efforts to increase comprehension in jurors past a certain limit (Smith, 1991; Wiener et al., 1995). However, these conclusions may have been due to methodological issues within such studies, in which the researchers failed to bridge the gap between legal jargon and simplified language, or even overloaded the participants with decision-making tasks that were far more taxing than true jury tasks (English & Sales, 1997). Diamond (1993) similarly addressed the existence of a possible ceiling effect, but highlighted the possibility of mitigating these issues by paying special attention to juror expectations, prototypes, and myths. Overall, there has been an air of pessimism in relation to the extent to which jury instructions can improve comprehension, which may not be wholly justified. Furthermore, researchers have not specified the ultimate level of this ceiling effect of juror comprehensibility, which raises the question of whether or not a ceiling effect can be determined from existing research (Smith, 1991).

Currently, there are still areas within the topic of jury instructions and juror comprehension that can be explored. One such area that still has limited research is the formatting of jury instructions and their relation to understanding legal terms and correct

application of the law in jurors. Therefore, further examination of formatting and explanation of legal terms can be an extremely valuable addition to the current psycho-legal literature.

### **Current Study**

Research on jury instruction formatting and vignette consistency of insanity is an intersection that has not been fully explored in the current psycho-legal literature. Due to the uncertainty of ceiling effects of rewritten jury instructions, there is still scientific merit in exploring this topic in tandem with instruction formatting. The current study aimed to investigate the way in which presentation of information in jury instructions influences jurors' understanding and decision-making in an insanity defense case, especially in relation to consistent and inconsistent insanity defense cases. Participants were exposed to a traditional version of the jury instructions, as well as two modified types. Participants also read either an insanity defense consistent vignette or an insanity defense inconsistent vignette. Knowledge of the insanity defense questions and a verdict (guilty, not guilty, NGRI) were filled out after being exposed to the vignette and jury instructions. Attitudes of and myth endorsement on the insanity defense were additional measures to explore how these factors can mediate comprehension and verdict selection within an insanity defense case.

### **Hypotheses**

**H1:** There will be a significant mean difference in the knowledge scores between participants who receive different types of jury instructions, such that learning will be higher for participants who read the modified versions than jurors who read the traditional version.

**H2:** There will be a significant mean difference in the knowledge scores between participant attitude groups, such that participants with negative attitudes will score lower than participants with positive attitudes.

**H3:** There will be a significant mean difference in the knowledge scores between participant myth endorsement groups, such that participants with high myth endorsement will score lower than participants with low myth endorsement.

**H4:** There will be a significant mean difference in the knowledge scores between participants with different social distances to the mentally ill, such that less socially distant participants will score higher than more socially distant participants.

**H5:** Jury instruction format, attitudes, and vignette consistency will have a significant impact on knowledge, such that there will be a main effect of instruction format (participants with both positive and negative attitudes will have significantly higher knowledge scores after reading the simplified or flow-chart version rather than the CALCRIM version for both consistent and inconsistent vignettes).

**H6:** Jury instruction format and myth endorsement will have a significant impact on knowledge, such that participants with low myth endorsement will have significantly higher scores after reading the simplified or flow-chart version rather than the CALCRIM version for both consistent and inconsistent vignettes, whereas there will be no difference for the high endorsement group.

**H7:** Jury instruction format and vignette consistency will have a significant impact on verdict, such that participants will be more likely to render NGRI verdicts in the consistent vignette and more likely to render guilty verdicts in the inconsistent vignette if they read the modified versions than if they read the traditional version.

**H8:** Jury instruction format, attitudes, and vignette consistency will have a significant impact on verdict, such that participants with negative attitudes are more likely to render NGRI verdicts in the consistent vignette after reading the modified versions than the traditional version. They will be equally as likely to render guilty verdicts in the inconsistent vignette for all jury instruction formats. In addition, participants with positive attitudes are more likely to render NGRI verdicts in the consistent vignette after reading the modified versions than the traditional version. They will also be more likely to render guilty verdicts in the inconsistent vignette more so after reading the modified versions than the CALCRIM version.

**H9:** Jury instruction format, myth endorsement, and vignette consistency will have a significant impact on verdict, such that participants with high myth endorsement will be more likely to render NGRI verdicts in the consistent vignette after reading the modified versions than the traditional version. They will be equally as likely to render guilty verdicts in the inconsistent vignette for all jury instruction formats. Additionally, participants with low myth endorsement will be more likely to render NGRI verdicts in the consistent vignette more so after reading the modified versions than the traditional version. They will also be more likely to render guilty verdicts in the inconsistent vignette after reading the modified versions than the traditional version.

## **Method**

### *Participants*

The target population for this study was jury eligible community members. For participants to be jury eligible, they had to be over the age of 18, a US citizen, and have never been convicted of a felony. Participants were told on the informed consent document that they

had to be jury eligible to participate. The survey on MTurk was also limited to participants who were located within the United States.

448 community members participated in this study. However, participants who did not fill out most of the scales and failed the manipulation checks were removed, resulting in a final sample of 380 participants. Ages of participants ranged from 18-70, and the mean age was 37.12,  $SD= 12.24$ . Most of the participants were female ( $n= 264, 69.5\%$ ), whereas males comprised of 114 responses (30%). Two respondents were of an “other” gender (0.5%). Participants were mostly white ( $n= 114, 30\%$ ), followed by African Americans ( $n= 36, 9.5\%$ ), Hispanics ( $n= 17, 4.5\%$ ), Asian American and Pacific Islanders ( $n= 15, 3.9\%$ ), biracial or multiracial individuals ( $n= 6, 1.6\%$ ), Native Americans ( $n= 4, 1.1\%$ ), and other ( $n= 2, 0.5\%$ ). Participants’ education levels comprised of mostly college graduates ( $n= 140, 36.8\%$ ), followed by those who completed some college ( $n= 127, 33.4\%$ ), postgraduate degree holders ( $n= 42, 11.1\%$ ), high school graduates ( $n= 40, 10.5\%$ ), individuals who have completed trade or vocational training ( $n= 16, 4.2\%$ ), individuals with some postgraduate work ( $n= 10, 2.6\%$ ), then individuals who completed some high school ( $n= 5, 1.3\%$ ). Participants mostly had occasional contact ( $n= 136, 35.8\%$ ) and very rare contact ( $n= 128, 33.7\%$ ) with individuals with mental illnesses, followed by frequently ( $n= 54, 14.2\%$ ), very frequently ( $n= 40, 10.5\%$ ), and then never ( $n= 22, 5.8\%$ ).

Participants were recruited online through the Amazon Mechanical Turk (MTurk) service, a crowdsourcing site that allows individuals to receive monetary compensation for completing surveys or tasks online. The MTurk service was used to gain a more diverse sample of participants. The recruitment information listed basic information about the study, and directed the participants to a link to the survey. Each participant was compensated \$0.25 each for their time.

## Materials

**Stimulus Materials.** Participants were first presented with one of two vignettes describing a potential insanity defense case, followed by one of three formats of jury instructions on how to approach the case. The sections below will describe these stimulus materials in more detail.

**Vignettes.** Participants were exposed to one of two vignettes. The vignettes will either detail an insanity defense consistent case (See Appendix A), or an insanity defense inconsistent case (See Appendix B). The vignettes described a man who had killed his wife with a knife, and who suffered from either a schizophrenic episode (insanity defense consistent case), or an amphetamine-induced psychotic episode (insanity defense inconsistent case). These vignettes were adapted from the original sources (Breheney et al., 2007; Daftary et al., 2011) to suit the present study. Additional details of the crime and the psychological assessments of the defendant were also included in the vignette, and were held constant over the conditions.

**Jury Instructions.** Participants were also exposed to one of the three different jury instruction formats. These formats included the actual California Criminal Jury Instructions on the insanity defense (See Appendix C), simplified jury instructions (See Appendix D), and the flow-chart version of jury instructions (See Appendix E). The California Criminal Jury Instructions provided information on the qualification of different disorders as legal insanity, special rules on drug and alcohol use, as well as the determination of verdict. The simplified version used more direct sentence structures, incorporated the use of subheadings, broke up long paragraphs, removed unnecessary brackets and parentheses, and substituted word lists with numbered lists. The flow-chart version was split into three headings: “determining legal

insanity”, “rules on drugs and alcohol”, and “selecting a verdict”. Statements were answered with a “yes” or “no”, which led participants downwards to the next level of the flow-chart, until a conclusion was made (“guilty”, “not guilty”, or “NGRI”). The flow-chart was also color-coded to differentiate the outcomes more clearly. The simplified and flow-chart versions were created solely for this study through incorporating information and suggestions from previous psycholinguistic and psycho-legal literature. The length of all three types of jury instructions was similar. The content was also held constant over the three groups, as only the formatting of instructions was manipulated.

**Dependent Measures.** Participants were exposed to several scales to determine level of attitudes toward the insanity defense, as well as their level of insanity defense myth endorsement. Participants also had to fill out knowledge questions regarding the concept of legal insanity, conclude on a verdict, and answer perceptions of the defendant questions. Manipulation checks and demographic information were filled out at the end of the study. All participants were exposed to these dependent measures.

**Scales.** At the beginning of the experiment, participants filled out two scales in regards to their attitudes and beliefs about both the insanity defense and mental illnesses. The scales were rated on a 7 point Likert scale (1- *Very Strongly Disagree*, to 7- *Very Strongly Agree*). This scale aimed to determine whether or not participants ranked high or low on insanity defense myth endorsement.

The first scale used was the Knowledge of the Insanity Defense Scale (KIDS; Daftary et al., 2011), which gauged level of myth endorsement in participants, including the components “the insanity defense is overused”, “no risk to defendants who plead NGRI”, and “defendants

who plead insanity are usually faking”. There were 24 items on the scale. Some statements that participants had to rate included: “Most people who use the insanity defense are not really insane”, “Defendants who are found guilty spend double the amount of time in detention than defendants who are found NGRI”, and “Criminal defense attorneys use the insanity defense when they can think of no other options”. There were nine subscales within this scale, with an overall  $\alpha$  of 0.90.

The second scale used was the Insanity Defense Attitudes-Revised (IDA-R), which determined the level of negative attitudes toward the insanity defense in participants (Skeem, Louden, & Evans, 2004). There were 19 items on the scale. Items within this scale included statements such as: “I believe that people should be held responsible for their action no matter what their mental condition”, “It is wrong to punish people who commit crime for crazy reasons while gripped by uncontrollable impulses”, and “I believe that all human beings know what they are doing and have the power to control themselves.” The IDA-R scale is comprised of two factors: Strict Liability, and Perceived Injustice and Danger. The first factor relates to mental illness in regards to criminal responsibility, and the second factor relates to participants’ perceptions of the use (or misuse) of the insanity defense and the possible injustice that stems from that. The reliability of the scales were found to be fair and good ( $\alpha= 0.68$  and  $0.88$  respectively).

**Verdict.** Participants were asked to give an individual verdict for the defendant in the vignette (*Guilty, Not Guilty, or Not Guilty by Reason of Insanity*).

**Insanity Defense Knowledge Questions.** After being exposed to the stimulus materials, participants were asked 12 factual questions regarding mental illness and the insanity defense (See Appendix F) that should have been garnered from reading the jury instructions. These

questions consisted of multiple choice, true or false, and applied questions. Questions included “Which is not a central component of the definition of legal insanity?”, “A defendant who committed a crime while suffering from delusions due to excessive use of the drug LSD can qualify as legally insane”, and “A settled mental disease can be qualified as legal insanity if paired with another mental disease.” All participants received the same set of questions, and the order was also randomized across participants.

**Perceptions of Defendant and Verdict Influence Questions.** Seven additional questions were asked directly after the insanity defense knowledge questions. These questions were on seven point Likert scales. Perception of the defendant questions asked about the defendant’s responsibility for the crime, the likelihood that the defendant knew what he or she was doing at the time of the crime, the likelihood of the defendant being mentally ill, the likelihood of the defendant being in control of his or her actions of the time, and the likelihood of the defendant acting under an irresistible impulse at the time of the crime. Verdict influence questions asked participants how influential the defendant’s mental illness was on their verdict, and how confident their verdict choice was.

**Demographic Information.** Participants filled out their age, gender, ethnicity, and education level. Participants’ social distance to individuals with mental illnesses was also measured, by asking “How often do you come into contact with people with mental illnesses?” (1- *Never*, 2- *Very Rarely*, 3- *Occasionally*, 4- *Frequently*, 5- *Very Frequently*).

**Manipulation Check.** Participants answered questions about the insanity defense consistency of the vignette to ensure that they had read it carefully. Participants who answered this manipulation check incorrectly were not included in the data analyses.

**Additional Questions.** In addition to the manipulation check, two other questions were asked about the vignette to assess whether or not participants read the vignette carefully. These questions included the weapon that the defendant used, as well as the symptoms that the defendant showed. Participants who answered these questions incorrectly were not included in the data analyses.

### **Design**

This study used a 2 (vignette consistency: insanity defense consistent vs. insanity defense inconsistent vignette) x 3 (instruction format: traditional instructions vs. simplified instructions vs. flow-chart instructions) between participants factorial design. All other aspects within this study were held constant to maintain the manipulated variables as the only changing factors that the participants experienced.

### **Procedure**

Participants first had to confirm their jury eligibility by agreeing to the informed consent document. The participants then filled out the KIDS (Daftary et al., 2011) and IDA-R (Skeem et al., 2004) scales regarding insanity defense knowledge and attitudes. The questions appeared in a random order for each participant, to counter any order effects. After completing these measures, participants were randomly assigned into one of the six experimental groups based on insanity defense consistency and jury instruction format. Participants were exposed to either a insanity defense consistent case, an insanity defense inconsistent case. After reading the vignette, participants were then exposed to one of three jury instructions. The jury instructions were the current California Criminal Jury Instructions or CALCRIM, a simplified version of the

instructions, or a flow-chart version of the jury instructions. Participants then had to render a verdict. Participants were then instructed to answer the insanity defense knowledge questions. They were not able to refer back to the jury instructions that they read while answering these questions. Additional questions on the perceptions of the defendant and verdict choice were administered at this time as well, which were registered on a Likert scale. A manipulation check and additional questions were asked. Finally, basic demographic questions were filled out. After they completed the study, participants were debriefed and thanked for their time.

### **Ethical Considerations**

This study was designed to be of minimal risk to the participants. The first ethical consideration was to ensure that all participants were recruited on a voluntary basis. Only participants who read the recruitment information and clicked “agree” after reading the entirety of the informed consent could participate. Only participants who self identified as jury eligible (above the age of 18, a US citizen, and have never been convicted of a felony) were allowed to continue with the study. Therefore, the target population was not a protected population. The informed consent document also invited participants to ask any questions about the study before they agreed to continue, so that participants had a clear idea of the nature of the study and whether or not they would like to make an informed decision to participate. They were also notified that their information was kept strictly confidential, and that they could voluntarily withdraw from the experiment from any time. If they did not agree to the informed consent, they were redirected to the debriefing document, which explained the purpose of the study, the hypotheses, and how the research may be presented in the future.

No deception was used in the experiment, and participants were instructed to complete tasks in a straightforward manner. Participants who completed the study also did not have to answer any sensitive questions about themselves or their past experiences throughout the study, and only answered questions on their attitudes and beliefs about the insanity defense through selecting answers on a screen. Confidentiality of information was of utmost importance, as the only information gathered about the participants' personal information was their demographic information, and their worker ID on MTurk.

Participants experienced below a minimal level of risk in this study. This is because participants were not exposed to any materials or questions that could be physically, emotionally, or psychologically damaging in the long-term. The two vignettes, although detailing criminal activity, were presented in a way that should not be triggering any overly negative responses in the participants. The details of the crime were no more gruesome than what one would find on a news report or a TV show. Participants were also cognizant of their task of reading about a crime, so it was unlikely that felt any major discomfort while reading the vignettes. Participants also did not have to go through any dehumanizing or humiliating experiences throughout the experiment. If participants felt uncomfortable during the study, they were allowed to exit at any time.

After participants completed the study, they received a small monetary compensation through MTurk. Other benefits include the addition to current psycho-legal knowledge on the intersection between jury instructions, vignette consistency, and understanding of the insanity defense. This information, if implemented alongside previous literature, could also increase attorney knowledge for the *voir dire* process, and lead to better selection of jurors in the future.

As participants experienced a low level of risk, the benefits of this study outweighed the potential risks.

## Results

### Data Cleaning

Participants who answered the manipulation check and additional check questions incorrectly were not included in the data analysis. Participants who did not answer most of the scale and knowledge questions were also not included in this data analysis, as composite scores could not be created. There was a final sample of 380 participants out of the 448 participants who completed the study.

To determine the groups of negative attitudes vs. positive attitudes, high myth endorsement vs. low myth endorsement, participants' scores on the KIDS scale and IDA-R scale were added together to create a final score. The score was then split into three groups: participants who scored below the 33.3% percentile, and participants who scored above the 66% percentile. The KIDS scale ( $m= 90.62, SD= 21.39$ ) was split into the lower third ( $\leq 80.87$ ) and the upper third ( $\geq 100.0$ ), IDA-R scale ( $m= 91.00, SD= 19.78$ ) was also split into the lower third ( $\leq 67.00$ ) and the upper third ( $\geq 83.00$ ). The middle third groups were not used for analyses that included comparisons between group attitudes or myth endorsement levels.

### Reliability

Both the KIDS scale and IDA-R scale were tested for reliability. The KIDS scale had an  $\alpha$  of 0.92, and the IDA-R scale had an  $\alpha$  of 0.93. The KIDS and IDA-R scales were highly correlated with each other,  $X^2(1, N= 368)= 0.739, p<0.01$ .

## Descriptives

Participants were split roughly evenly between the CALCRIM ( $n= 123$ , 32.4%), the simplified ( $n= 130$ , 34.2%) and the flow-chart instructions ( $n= 127$ , 33.4%). Vignette consistency was also split quite evenly between consistent ( $n= 197$ , 51.8%) and inconsistent vignettes ( $n= 183$ , 48.2%).

For the dependent variables, participants had a mean knowledge score of 8.82,  $SD= 1.88$ . Verdict was skewed in the direction of guilty ( $n= 253$ , 66.6%), followed by NGRI ( $n= 125$ , 32.9%), then not guilty ( $n= 2$ , 0.5%). The participants who chose the verdict of “not guilty” were not included in analyses comparing verdict.

## Knowledge of Insanity Defense

A one-way ANOVA was conducted to compare the means of knowledge scores between jury instruction groups. Consistent with hypothesis one, there was a significant difference in the knowledge scores between the different jury instruction formats,  $F(2,364)= 3.218$ ,  $MSe= 3.484$ ,  $p= 0.04$ . Post-hoc tests indicated that the knowledge scores of participants who read the simplified version ( $M= 9.14$ ,  $SD= 1.87$ ) were significantly higher than knowledge scores of participants who read the flow-chart version ( $M= 8.56$ ,  $SD= 2.03$ ),  $p<0.01$ . However, contrary to the hypothesis, the knowledge scores of participants who read the CALCRIM instructions ( $M= 8.74$ ,  $SD= 1.68$ ) were not significantly lower than knowledge scores of participants who read the simplified version ( $M= 9.14$ ,  $SD= 1.87$ ),  $p= 0.10$ .

ANCOVA was used to test possible main effects of prototypes, jury instruction type, and attitudes on knowledge scores. There were significant main effects found for both vignette consistency,  $F(1, 241)= 12.178$ ,  $MSe=38.840$ ,  $p= 0.001$ , and attitudes on the insanity defense,

$F(1, 241)= 22.276, MSe= 71.045, p<0.001$ . Consistent with hypothesis 2, there was a significant difference between the knowledge scores of participants who had negative attitudes and those who had positive attitudes toward the insanity defense,  $F(1, 259)= 17.887, MSe= 3.329, p<0.001$ . Participants who had positive attitudes ( $m= 9.42, SD= 1.66$ ) scored significantly higher on their knowledge scores than participants who had negative attitudes ( $m= 8.46, SD= 1.99$ ). Instruction type was not a significant main effect,  $F(1, 241)= 2.302, MSe= 7.341, p= 0.10$ .

ANCOVA was also used to test possible main effects of vignette consistency, jury instruction type, and myth endorsement on knowledge scores. There were significant main effects for insanity defense consistency,  $F(1,241)= 12.175, MSe= 34.663, p= 0.001$ , and myth endorsement,  $F(1,241)= 33.771, MSe= 96.143, p<0.001$ . There was a significant difference between the knowledge scores of participants who had low myth endorsement and high myth endorsement,  $F(1, 239)= 25.580, MSe= 2.993, p<0.001$ . Consistent with hypothesis 3, participants who had low myth endorsement ( $m= 9.44, SD= 1.63$ ) scored significantly higher than participants who had high myth endorsement ( $m= 8.31, SD= 1.84$ ). Instruction type was not a significant main effect,  $F(1,241)= 0.478, MSe= 1.360, p= 0.10$ .

Consistent with hypothesis 4, there was a significant difference between the knowledge scores of participants who indicated that they interacted with individuals with mental illness “very frequently”, in comparison to the other social distance groups,  $F(4, 362)= 2.678, MSe= 3.463, p= 0.03$ . Post-hoc tests indicated that participants who come into contact with the mentally ill very frequently ( $m= 9.59, SD= 1.46$ ) had significantly higher scores than participants who come into contact with the mentally ill frequently ( $m= 8.75, SD= 1.98$ ),  $p= 0.03$ , occasionally ( $m= 8.80, SD= 1.92$ ),  $p= 0.02$ , very rarely ( $m= 8.75, SD= 1.75$ ),  $p= 0.02$ , and never ( $m= 8.05, SD= 2.34$ ),  $p= 0.002$ .

## Verdict

A logistic regression model was created to test the hypothesis that jury instruction format and insanity defense consistency will be strong significant predictors of verdict. Jury instructions were dummy coded, with “simplified” and “flow-chart” as target categories and “CALCRIM” as the reference category. All predictors in the model were entered simultaneously. The model was significant,  $-2LL=277.373$ ,  $X^2(11) = 67.715$ ,  $p < 0.001$ . The outcome variable in the model was the verdict (coded as 0 for guilty and 1 for NGRI). The predictors together account for 30.7% of the variance in verdict. With all of the predictors in the model, 75.8% of the verdicts were correctly reclassified. Whether or not the case involved an insanity consistent defendant or an insanity inconsistent defendant was a significant predictor of the verdict ( $B = 1.838$ ,  $SE = 0.332$ ,  $\text{Exp}(B) = 4.195$ ,  $\text{Wald } X^2 = 30.658$ ,  $p < 0.001$ ). A consistent vignette was 4.19 times more likely to result in an NGRI verdict than an inconsistent vignette. Simplified instructions were not a significant predictor of the verdict ( $B = 0.725$ ,  $SE = 0.674$ ,  $\text{Exp}(B) = 2.065$ ,  $\text{Wald } X^2 = 1.158$ ,  $p = 0.28$ ). Flow-chart instructions were also not a significant predictor of the verdict ( $B = 0.217$ ,  $SE = 0.568$ ,  $\text{Exp}(B) = 1.242$ ,  $\text{Wald } X^2 = 0.146$ ,  $p = 0.70$ ).

Another logistic regression model was created to test the hypothesis that jury instruction format, participant attitudes, and vignette consistency will be strong predictors of the verdict. The outcome variable in the model was verdict (coded as 0 = guilty, 1 = NGRI). Jury instructions were dummy coded, with “simplified” and “flow-chart” as target categories and “CALCRIM” as the reference category. All predictors in the model were entered simultaneously. The model was significant,  $-2LL = 280.308$ ,  $X^2(10) = 64.779$ ,  $p < 0.001$ . The predictors together accounted for 26.9% of the variance in the verdict. With all the predictors in the model, 76.7% of the verdicts were correctly reclassified. As seen in Table 1, vignette consistency and attitudes were

significant predictors of the verdict, whereas simplified instructions and flow-chart instructions were not significant predictors of the verdict.

Table 1

*Logistic Regression Model of Jury Instruction Format, Attitudes, and Insanity Defense Consistency on Verdict*

	B	S.E.	Exp(B)	Wald	Sig.
Consistency	1.881	0.321	6.557	34.375	<0.001***
Attitudes	1.444	0.309	4.436	21.840	<0.001***
Simplified	-0.050	0.357	0.951	0.020	0.89
Flow-Chart	-0.222	0.354	0.801	0.394	0.53

\* p<0.05, \*\* p<0.01, \*\*\* p<0.001

A logistic regression model was created to test the hypothesis that jury instruction format, myth endorsement, and vignette consistency will be strong predictors of the verdict. The outcome variable in the model was verdict (coded as 0=guilty, 1=NGRI). Jury instructions were dummy coded, with “simplified” and “flow-chart” as target categories and “CALCRIM” as the reference category. All predictors in the model were entered simultaneously. The model was significant, -2LL=265.212,  $X^2(4) = 52.315$ ,  $p < 0.001$ . The predictors together accounted for 26.3% of the variance of the verdict. With all the predictors in the mode, 75.8% of the verdicts were correctly reclassified. As seen below in Table 2, Prototypes and myth endorsement were significant predictors of the model, whereas both instruction formats were not significant predictors of the model.

Table 2

*Logistic Regression Model of Jury Instruction Format, Myth Endorsement, and Insanity Defense Consistency on Verdict*

	B	S.E.	Exp(B)	Wald	Sig.
Consistency	1.838	0.332	6.281	30.658	<0.001***
Myth Endorsement	1.434	0.321	4.195	19.951	<0.001***
Simplified	0.441	0.373	1.555	1.399	0.24
Flow-Chart	-0.211	0.372	0.810	0.322	0.57

\* p<0.05, \*\* p<0.01, \*\*\* p<0.001

**Additional Analyses**

A logistic regression model was created to test whether or not jury instruction format, participant attitudes, vignette consistency, and perceptions of the defendant will be strong predictors of the verdict. The outcome variable in the model was the verdict (coded as 0= guilty, 1= NGRI) and jury instructions were dummy coded with “simplified” and “flow-chart” as target categories and “CALCRIM” as the reference category. All predictors in the model were entered simultaneously. The model was significant, -2LL=60.064,  $X^2(12) = 186.882, p < 0.001$ . The predictors together account for 86.1% of the variance in the admission decision. With all of the predictors in the model, 93.1% of the admissions decisions were correctly re-classified. The degree of influence of the defendant’s mental illness in the verdict was a significant predictor of the model (B= 1.553, SE= 0.378, Exp(B)= 4.727, Wald  $X^2 = 16.915, p < 0.001$ ), such that every point increase in influence of the defendant’s mental illness, a NGRI verdict was 4.727 times

more likely. The question of the defendant's irresistible impulse was also a significant predictor of the model ( $B = 0.590$ ,  $SE = 0.302$ ,  $\text{Exp}(B) = 1.805$ ,  $\text{Wald } X^2 = 3.833$ ,  $p = 0.05$ ), such that with every point increase in the perception of irresistible impulse lead to 1.805 times more likely to render a NGRI verdict in participants. Insanity defense consistency, attitudes, jury instructions, and other defendant perception questions were not significant ( $B = -1.375$ - $1.533$ ,  $SE = 0.251$ - $1.739$ ,  $\text{Exp}(B) = 0.253$ - $4.588$ ,  $\text{Wald } X^2 = 0.041$ - $16.915$ ,  $p = 0.10$ - $0.84$ ). This indicates that perceptions of the defendant were found to be mediators of the effects of attitudes and insanity defense consistency.

A logistic regression model was created to test whether or not jury instruction format, myth endorsement, insanity defense consistency, and perceptions of the defendant will be strong predictors of the verdict (See Table 3). The outcome variable in the model was the verdict (coded as 0= guilty, 1= NGRI) and jury instructions were dummy coded with "simplified" and "flow-chart" as target categories and "CALCRIM" as the reference category. The predictors together account for 84.9% of the variance in verdict. With all of the predictors in the model, 93.1% of the verdicts were correctly re-classified. The model was significant,  $-2LL = 81.036$ ,  $X^2(11) = 232.671$ ,  $p < 0.001$ . As seen below in Table 3, prototypes, simplified jury instructions, likelihood of mental illness in the defendant, the influence of mental illness in verdict selection, and likelihood of irresistible impulse were all significant.

Table 3

*Logistic Regression Model of Jury Instruction Format, Myth Endorsement, Insanity Defense Consistency, and Perceptions of the Defendant on Verdict*

	B	S.E.	Exp(B)	Wald	Sig.
Prototypes	1.424	0.680	4.153	4.381	0.04*
Simplified	1.721	0.796	5.592	4.679	0.03*
Flow-Chart	-0.510	0.702	0.600	0.528	0.47
Myth Endorsement	0.120	0.663	1.128	0.033	0.86
Responsibility	-0.391	0.279	0.676	1.967	0.16
Verdict Confidence	-0.063	0.254	0.939	0.061	0.81
Likelihood of Defendant Knowing	-0.330	0.245	0.719	1.819	0.18
Likelihood of Mental Illness	0.559	0.250	1.749	4.983	0.03*
Influence of Mental Illness	1.605	0.335	4.979	22.970	<0.001***
Likelihood of Control of Actions	-0.287	0.210	0.751	1.862	0.17
Likelihood of Irresistible Impulse	0.467	0.222	1.596	4.429	0.04*

\* p<0.05, \*\* p<0.01, \*\*\* p<0.001

**Discussion**

The objective of the current study was to investigate the impact of jury instruction formatting, insanity defense vignette consistency, juror attitudes, and myth endorsement on the understanding and decision-making of jurors in an insanity defense case. The results of this study showed that there are complicated relationships between the instruction type and the way they are perceived by jurors, depending on the insanity defense consistency of the case, as well as on

their individual characteristics. However, the factors appeared to have impacted knowledge more tangibly than they impacted verdict.

In support of many previous studies, it was found that juror characteristics such as attitudes, myth endorsement, and social distance, had a significant effect on participants' knowledge scores on the insanity defense (Bloechl et al., 2007; Stuber et al., 2014; Thornicroft et al., 2008). Participants who had negative attitudes about the insanity defense, had many misconceptions about the insanity defense, or did not interact with mentally ill individuals frequently were much less likely to learn the information in all jury instruction types presented to them.

Previous literature has shown that the way in which legal instruction is presented can have a large impact on the way jurors interpret information, and that ways of simplification can improve knowledge and decision-making (Charrow & Charrow, 1979; Heffer, 2008; Ogloff & Rose, 2005; Severance & Loftus, 1982). In this study, there was a significant difference found between the jury instruction formats, with the simplified version of the instructions leading to higher knowledge scores than the traditional and flow-chart versions. However, the simplification of language led to an increase in the understanding of the concepts only when accounting for attitudes and perceptions. Additional analyses discovered that other factors may influence the degree to which jury instructions have an impact on knowledge scores in participants, including the consistency of the scenario, as well as attitudes toward and myth endorsement of the insanity defense. These findings are in line with previous literature showing that these particular participant characteristics are important ones to consider in insanity defense cases since they may influence knowledge (Bloechl et al., 2007; Corrigan et al., 2001). The results from this study suggest that if participant perceptions of the defendant and insanity

defense consistency were controlled for, the simplified jury instructions would fare the best out of the three instruction types.

Only one of the two self-designed jury instructions led to better knowledge scores in comparison to the traditional instruction format. Contrary to the hypotheses, the flow-chart version of the jury instructions did not lead to a better understanding of the insanity defense. This is divergent from previous ideas and theories that flow-charts can improve understanding in readers. One explanation for this may be that flow-charts are meant to be interactional, as previous literature has found (Glenburg & Langston, 1992). As participants in this study were not allowed to reference the instructions while answering the dependent measures, participants may have been more aware of the relevant parts of the flow-chart while dismissing other parts, leading to lower knowledge scores than the simplified instructions. Participants also may have been expecting to refer back to the instructions during the decision-making process, which might explain why they did not learn the information as well initially.

When prototypes and instruction format were analyzed together, it was found that a consistent vignette of the insanity defense led to a higher likelihood of NGRI verdicts, and an inconsistent vignette led a higher likelihood of guilty verdicts. This finding was consistent with previous research on prototypes of insanity, in which successful insanity defendants were more likely to fit the prototype than not (Finkel & Groscup, 1997; Loudon & Skeem, 2007; Roberts et al., 1987). However, it was found that the consistency of the case was a much more important determinant of verdict than instruction format when only these two factors were considered. Attitudes and myth endorsement were also more significant predictors of verdict when added to the analyses, which was not surprising.

The last two analyses also considered factors of jury instruction format, participant characteristics, insanity defense consistency, and perceptions of the defendant in addition to previously discussed factors. It was found that several factors related to individual perceptions of the defendant were predictors of the verdict, namely the perception of the likelihood of mental illness in the defendant, the influence of mental illness in one's verdict choice, and the likelihood that the defendant acted upon an irresistible impulse. These findings were not surprising by themselves, as participants who takes into account the defendant's mental state and understand that this may influence their decision-making would be expected to be much more aware when selecting a verdict. When all the above factors were added to the analyses, the simplified version of the results was found to also be a significant predictor of verdict. This indicates that additional perceptions of the defendant and verdict can have an influence on the way in which participants render verdicts, which can also be determined through presentation of information through jury instructions.

### **Potential Biases/Limitations**

One of the limitations in this study was that it may not have been representative of a real-life jury decision-making process. Participants could not refer to the jury instructions while reading the vignette or while rendering a verdict, which is often not the case in an actual jury deliberation. Also, the study was conducted online, which increases controllability of manipulated factors but takes away from the generalizability of the study. This is because online studies are difficult to mimic real-life situations, especially one as complicated as a criminal trial. Online studies also cannot control for participants who may falsify information while filling out self-reported data, or individuals who do not participate seriously. Because participants know

that they are not determining the fate of an individual, the decisions that they make may not be the same ones they would make if they were part of an actual jury. Additionally, the use of the CALCRIM instructions limits the generalizability of the study, as the results can only be applied to jurors in California.

Another limitation related to generalizability lies within the demographics of this study. The recruitment process may have shifted demographics in certain direction more, as it has been found previously that the population of MTurk workers does not correctly reflect the population in the United States (Ross et al., 2010). A majority of the participants in this study identified as female, which may skew the information found, due to the previously shown gender differences in perceptions of mental illnesses (Holzinger et al., 2012). A larger percentage of participants who took part in the study also had received more education than the average American juror. Additionally, participants may have agreed to partake in this study because they actively sought out studies related to mental illness or the insanity defense, which may have had an impact on the data. With these limitations in mind, there are ways in which the current study can be adapted to future studies on jury instruction comprehensibility and the insanity defense. For example, cases such as domestic or sexual abuse cases may also have many misconceptions around them, and should be studied even further in this realm.

### **Future Directions**

The current study can be used as a stepping-stone to initiate other similar studies on jury instruction formatting and comprehension. Future studies can study this effect in insanity defense cases, but allowing individuals to make legal judgments in more realistic fashion. If participants are able to read the jury instructions while making their decision, they may be able to draw more

information from the instructions through increased interactions. Participants who perceive their decisions to be of higher stakes may lead to more realistic data that may be applicable to current legal situations. This may be achieved through higher compensation for participants, or by showing participants videos of a simulated trial, and asking them to treat these videos as a real trial. As participant factors and prototypes were found to have an influence on jurors' verdicts, a logical next step in related research may be to analyze what types of factors may influence comprehension of jury instructions in other types of cases, for example cases regarding domestic or sexual abuse. Additional research into the cognitive perspective of juror understanding may also be useful for future directions in the field.

Overall, the results give more detailed insight into the way in which jurors extract information and make decisions through reading jury instructions. This study also gives a nuanced picture of the many factors that contribute to jurors' decision-making process. One direct application of this research may be to help rewrite pattern legal instructions to increase comprehensibility in insanity defense cases. Another application would be to aid attorneys in the *voir dire* process, in which they could pick jurors using their personal characteristics to select who would be most likely to accurately comprehend the jury instructions. This study contributes and adds depth to current literature on jury instruction and the insanity defense, and can be further explored through exploring additional factors that may contribute to juror comprehension and decision-making.

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## Appendix A

### Insanity Defense Consistent Vignette

You are about to read a summary of evidence presented in a criminal trial. Please read this carefully as if you are a juror in the trial process.

On the night of March 21, 2013, a body was discovered in a residence. The police were called to the scene by a man claiming to have killed his spouse. The victim was 37 years old. A knife was found next to the victim. The victim was stabbed repeatedly and the throat was cut. The victim suffered multiple long lacerations on the arms and legs.

The defendant was sitting in the room when the police arrived and he was covered with blood. When asked what the defendant was doing in the room, the defendant replied, "I was waiting for you. I'm the one who did this." Neighbors confirmed that the defendant lived in the house. The police arrested the defendant and brought him in for questioning.

Upon arrival at the police station, the defendant was read his Miranda rights. While in the interrogation room, detectives observed the defendant acting calmly and willing to answer the detective's questions. At that time, the defendant confessed to the crime. The defendant admitted that he was the husband of the victim.

At trial, the prosecution presented evidence of the crime to show the defendant was guilty of first degree murder. Per a court-ordered psychological assessment, the defendant was examined by a clinical psychologist who testified about the various behaviors and symptoms observed during the assessment with the defendant. The defendant had symptoms that included delusions (false beliefs) and auditory hallucinations (hearing voices). The clinician noted that the defendant did not present with disorganized speech or behavior. She reported that the symptoms observed in the defendant are consistent with a diagnosis of schizophrenia. During the assessment, the defendant said had been diagnosed previously of schizophrenia.

As part of the evaluation, the clinician asked the defendant why the crime had been committed. The defendant reported killing the victim because he believed his spouse was being abused by

many individuals in the neighborhood and that this was the only way he could protect her. He stated that God had ordained him and gave him orders to protect innocent people in the world. The clinician asked the defendant if the crime was planned and the defendant said that he had given the crime some thought. Originally he wanted to use a gun, but could not find one. Then he thought he could go to the drug store and find something to use there. He considered stealing some drugs, but did not want to get caught. He finally decided on using a knife. While he was in the kitchen that night, he saw a knife on the counter. He grabbed the knife and did it.

## **Appendix B**

### **Insanity Defense Inconsistent Vignette**

You are about to read a summary of evidence presented in a criminal trial. Please read this carefully as if you are a juror in the trial process.

On the night of March 21, 2013, a body was discovered in a residence. The police were called to the scene by a man claiming to have killed his spouse. The victim was 37 years old. A knife was found next to the victim. The victim was stabbed repeatedly and the throat was cut. The victim suffered multiple long lacerations on the arms and legs.

The defendant was sitting in the room when the police arrived and he was covered with blood. When asked what the defendant was doing in the room, the defendant replied, "I was waiting for you. I'm the one who did this." Neighbors confirmed that the defendant lived in the house. The police arrested the defendant and brought him in for questioning.

Upon arrival at the police station, the defendant was read his Miranda rights. While in the interrogation room, detectives observed the defendant acting calmly and willing to answer the detective's questions. At that time, the defendant confessed to the crime. The defendant admitted that he was the husband of the victim.

At trial, the prosecution presented evidence of the crime to show the defendant was guilty of first degree murder. Per a court-ordered psychological assessment, the defendant was examined by a clinical psychologist who testified about the various behaviors and symptoms observed during the assessment with the defendant. The defendant had symptoms that included a history of amphetamine addiction (needing more amphetamines to achieve high), withdrawal symptoms (nausea & vomiting when unable to obtain drug), and at the time of the crime, prominent delusions (false beliefs) and hallucinations (hearing voices). She reported that the symptoms observed in the defendant are consistent with a diagnosis of Amphetamine-Induced Psychotic Disorder. During the assessment, the defendant said he has suffered from drug addiction his entire life.

As part of the evaluation, the clinician asked the defendant why the crime had been committed. The defendant reported killing the victim because he believed his spouse was being abused by many individuals in the neighborhood and that this was the only way he could protect her. He stated that God had ordained him and gave him orders to protect innocent people in the world. The clinician asked the defendant if the crime was planned and the defendant said that he had given the crime some thought. Originally he wanted to use a gun, but could not find one. Then he thought he could go to the drug store and find something to use there. He considered stealing some drugs, but did not want to get caught. He finally decided on using a knife. While he was in the kitchen that night, he saw a knife on the counter. He grabbed the knife and did it.

### Appendix C

#### **Current California Criminal Jury Instructions on Legal Insanity (CALCRIM)**

You will now read some jury instructions on the determination of legal insanity. Please read the instructions in full very carefully as if you are a juror in this case.

Now you must decide whether (he/she) was legally insane when (he/she) committed the crime[s]. The defendant must prove that it is more likely than not that (he/she) was legally insane when (he/she) committed the crime[s].

The defendant was legally insane if:

1. When (he/she) committed the crime[s], (he/she) had a mental disease or defect;

AND

2. Because of that disease or defect, (he/she) was incapable of knowing or understanding the nature and quality of (his/her) act or was incapable of knowing or understanding that (his/her) act was morally or legally wrong.

None of the following qualify as a mental disease or defect for purposes of an insanity defense: personality disorder, adjustment disorder, seizure disorder, or an abnormality of personality or character made apparent only by a series of criminal or antisocial acts.

Special rules apply to an insanity defense involving drugs or alcohol. Addiction to or abuse of drugs or intoxicants, by itself, does not qualify as legal insanity. This is true even if the intoxicants cause organic brain damage or a settled mental disease or defect that lasts after the immediate effects of the intoxicants have worn off. Likewise, a temporary mental condition caused by the recent use of drugs or intoxicants is not legal insanity.

If the defendant suffered from a settled mental disease or defect caused by the long-term use of drugs or intoxicants, that settled mental disease or defect combined with another mental disease or defect may qualify as legal insanity. A settled mental disease or defect is one that remains after the effect of the drugs or intoxicants has worn off.

You may consider any evidence that the defendant had a mental disease or defect before the commission of the crime[s]. If you are satisfied that (he/she) had a mental disease or defect before (he/she) committed the crime[s], you may conclude that (he/she) suffered from that same condition when (he/she) committed the crime[s]. You must still decide whether that mental disease or defect constitutes legal insanity.

You may find that at times the defendant was legally sane and at other times was legally insane. You must determine whether (he/she) was legally insane when (he/she) committed the crime.

If you conclude that the defendant was legally sane at the time (he/she) committed the crime[s], then it is no defense that (he/she) committed the crime[s] as a result of an uncontrollable or irresistible impulse.

If, after considering all the evidence, you conclude the defendant has proved that it is more likely than not that (he/she) was legally insane when (he/she) committed the crime[s], you must return a verdict of not guilty by reason of insanity.

## Appendix D

### Simplified CALCRIM Instructions

You will now read some jury instructions on the determination of legal insanity. Please read the instructions in full very carefully as if you are a juror in this case.

As part of the jury, you must decide whether he/she was legally insane when he/she committed the crime.

The defendant must prove that he/she was more likely legally insane than not when he/she committed the crime.

#### A defendant is legally insane if:

1. They had a mental disease or defect when he/she committed the crime;

**AND**

2. Because of that disease or defect, he/she was incapable of either:

a. Knowing or understanding the nature and quality of his/her act

**OR**

b. Knowing or understanding his/her act was morally/legally wrong

#### These following disorders CANNOT be qualified as legal insanity:

1. Personality Disorder
2. Adjustment Disorder
3. Seizure Disorder
4. Abnormality of personality or character

#### Rules on drugs or alcohol:

1. Addiction or abuse of drugs or intoxicants cannot qualify as legal insanity, *even if* it caused brain damage or a disease that remains after the effects of the drugs/intoxicants wear off (settled mental disease). Settled mental disease may only qualify as legal insanity if paired with another mental disease.

2. Temporary mental conditions caused by drugs or intoxicants cannot qualify as legal insanity.

If you believe that the defendant has a mental disease before he/she committed the crime, and also suffered from the same condition when he/she committed the crime, you must still decide whether or not it constitutes legal insanity.

Please only decide whether the defendant was legally sane at the time of the offense. Your thoughts on the defendant's current or future legal sanity should not be considered.

If you find the defendant legally sane, he/she cannot use the defense that he/she committed the crime because of an uncontrollable or irresistible impulse.

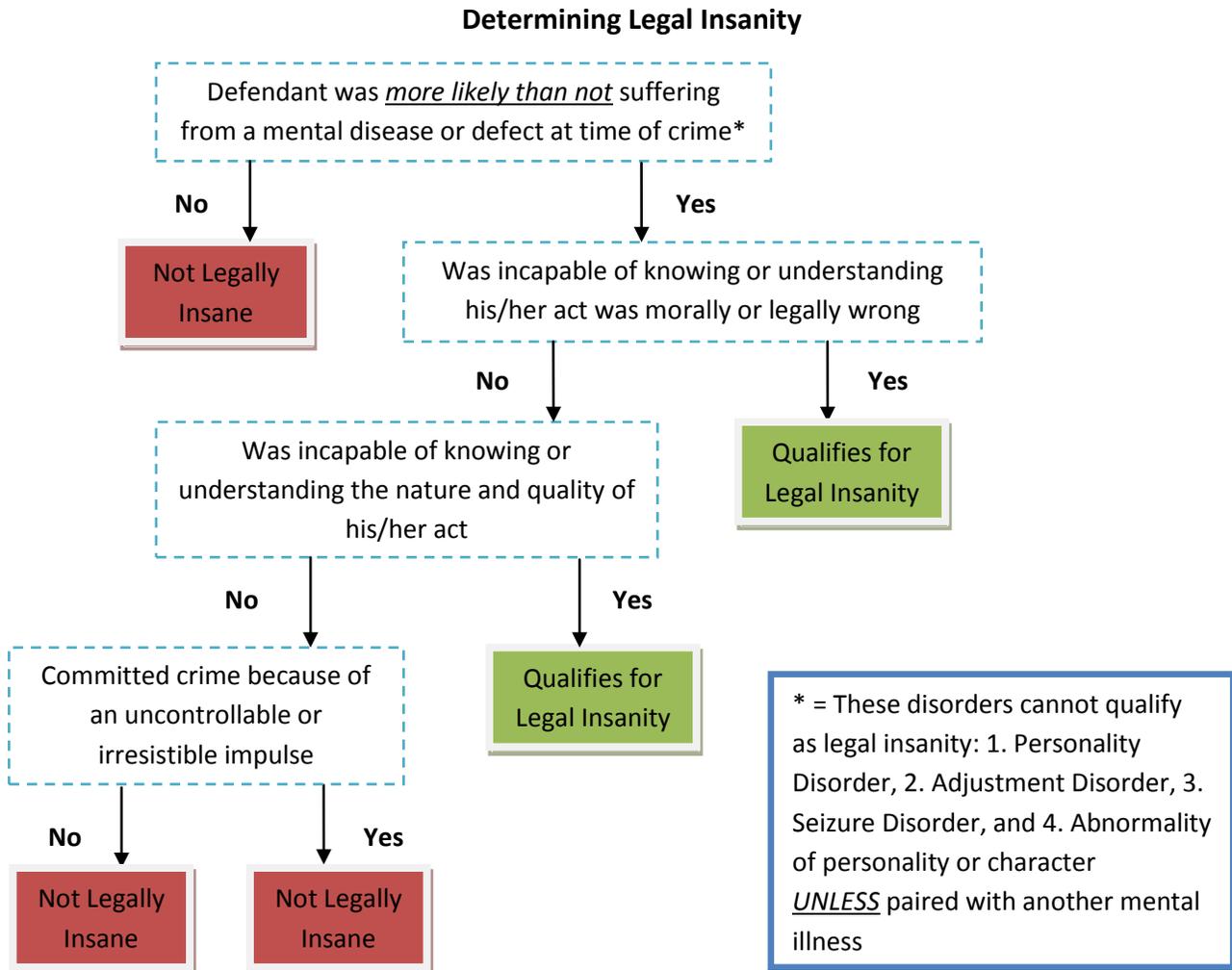
After considering all the evidence, you must determine if the defendant has proved that it is more likely than not that they were legally insane when they committed the crime.

If you believe that they were not legally insane when they committed the crime, please return a verdict of guilty. If you believe that the defendant did not commit the crime, please return a verdict of not guilty. If you believe that they were legally insane when they committed the crime, please return a verdict of not guilty by reason of insanity.

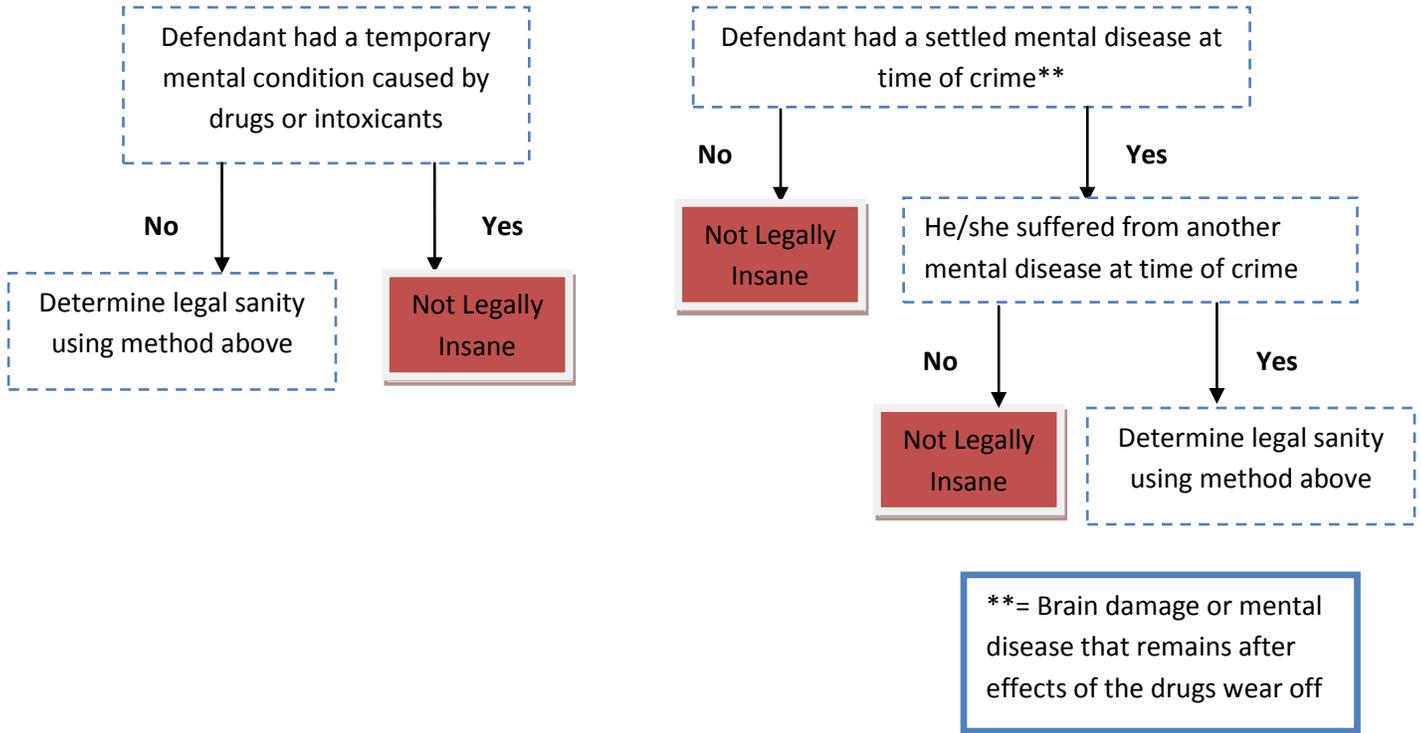
**Appendix E**

**Flow-Chart Jury Instructions**

You will now read some jury instructions on the determination of legal insanity. Please read the instructions in full very carefully as if you are a juror in this case. You must decide whether the defendant was legally insane when he/she committed the crime.



**Rules on Drugs and Alcohol**



**Selecting a Verdict**



Please only decide whether the defendant was legally sane at the time of the offense. Your thoughts on the defendant's current or future legal sanity should not be considered.

If you believe that the defendant has a mental disease before he/she committed the crime, and also suffered from the same condition when he/she committed the crime, you must still decide whether or not it constitutes legal insanity.

If you believe that they were not legally insane when they committed the crime, please return a verdict of guilty. If you believe that the defendant did not commit the crime, please return a verdict of not guilty. If you believe that they were legally insane when they committed the crime, please return a verdict of not guilty by reason of insanity.

**Appendix F****Insanity Defense Understanding**

Please answer the following questions to the best of your ability.

1. Which is not a central component of the definition of legal insanity?
  - a. *A defendant is unable to show remorse for his/her crime due to a mental illness*
  - b. A defendant does not understand whether his/her act was morally/legally right
  - c. A defendant cannot understand the nature of his/her act
  - d. A defendant suffers from a mental illness or mental defect
2. A defendant will qualify as legally insane if he/she suffered from a personality disorder at the time of his/her crime.
  - a. True
  - b. *False*
3. All you need to deem a defendant legally insane is when any mental disease or defect was present when the crime was committed.
  - a. True
  - b. *False*
4. Which of the following cannot qualify as legal insanity?
  - a. Due to a mental illness, a defendant did not know their crime was morally wrong
  - b. Due to a mental illness, a defendant did not know of their nature of the criminal act
  - c. *Due to drug abuse, a settled mental illness caused the defendant to commit their crime*
  - d. The defendant committed a crime while abusing drugs and having another mental illness, which led him/her to believe their crime was the morally correct thing to do
5. A defendant who committed a crime while suffering from delusions due to excessive use of the drug LSD can qualify as legally insane.
  - a. True
  - b. *False*
6. A defendant can qualify as legally insane if because of a mental illness or defect, he/she did not understand the nature or quality of his/her action.
  - a. *True*
  - b. False

7. The defendant using the insanity defense must prove that:
  - a. They have a history of mental illness
  - b. They are more likely mentally ill than not during the trial process
  - c. *They were more likely mentally ill than not during their crime*
  - d. They were beyond a reasonable doubt to be mentally ill than not during their crime
8. A defendant who was abusing methamphetamine while committing a crime can qualify as legally insane.
  - a. True
  - b. *False*
9. A defendant who suffered from paranoid delusions due to schizophrenia during a crime can qualify as legally insane.
  - a. *True*
  - b. False
10. A defendant will qualify as legally insane if he/she suffered from a seizure disorder at the time of his/her crime.
  - a. True
  - b. *False*
11. A settled mental disease can be qualified as legal insanity if paired with another mental disease.
  - a. *True*
  - b. False
12. A defendant can qualify as legally insane if he/she suffered from a schizophrenic episode at the time of his/her crime.
  - a. *True*
  - b. False

### **Perceptions of Vignette**

Likert Scale Questions:

13. How responsible do you think the defendant was for this crime?  
(1- Not at all Responsible, 7- Completely Responsible)
14. How confident are you in your verdict choice?

(1- Not at all Confident, 7- Very Confident)

15. How likely is it that the defendant knew what he or she was doing at the time of the crime?

(1- Not at all Likely, 7- Very Likely)

16. How likely is it that the defendant was mentally ill?

(1- Not at all Likely, 7- Very Likely)

17. How influential was the defendant's mental illness in your verdict?

(1- Not at all Influential, 7- Very Influential)

18. How likely is it that the defendant was in control of his or her actions at the time of the crime?

(1- Not at all Likely, 7- Very Likely)

19. How likely is it that the defendant was acting under an impulse that was irresistible to him or her at the time of the crime?

(1- Not at all Likely, 7- Very Likely)