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Catherine Hackett

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Abstract

Jurors are typically not able to disregard inadmissible evidence when asked to do so by judges. Yet, there is no research using the think/no-think paradigm on juror memory, which could be beneficial for trials in which inadmissible evidence is an issue. This study uses witness photos and statements to see if the material can be intentionally remembered and intentionally forgotten through a think/no-think task in which participants are cued to think about some witness photo/statement combinations and not think about other photo/statement combinations. Participants were responsible for learning pairs of faces and statements of witnesses from an alleged stabbing. After learning each pair, participants were told that some witness statements were deemed inadmissible. After this instruction, a think/no-think task followed in which only the faces of certain witnesses were shown, and the participants were either instructed to remember (think condition) the statement associated with the photo (target) or to suppress it (no-think condition). A third group of pairs functioned as a baseline/control comparison and did not appear in the think/no-think task. In the final phase the participants were shown the faces again and asked to determine the associated statement with that face. We hypothesized that subjects would have a higher recall of the think condition statements and a lower recall of the no-think condition statements compared to the baseline/control condition. A second hypothesis anticipated that participants would be able to label the witnesses they were told to forget as less reliable while labeling the witnesses they were supposed to remember as more reliable. No significant results were found on recall and condition type, but an effect was found in the reliability ratings of the photos.

Keywords: memory, think/no-think task, inadmissible evidence

Impact of Think/No-Think Paradigm on Memory for Inadmissible Evidence

Memory is an important and relevant topic within psychology whether that be our ability to recollect information or forget information. Memory plays an integral role in our daily lives as it allows us to remember skills that we have learned, significant past events, or even where we left our car keys and parked our cars. However, our ability to forget information also aids in our day to day lives. There are many instances throughout life when the ability to forget information is useful and sometimes even necessary. One major example of this is within the criminal justice system. Often in court, jurors will be told to disregard information they heard during the trial, however psychological research suggests that people have a difficult time ignoring information once they have heard it in the courtroom (Lieberman & Arndt, 2000). Sometimes the information heard is potentially damaging to the defense or prosecution, which could create unjust outcomes of the trial. The jurors' ability or inability to comply with these judicial instructions affects court proceedings and the verdict reached which may impact the overall fairness of the legal system (Houghman, 2011). These findings are why it is particularly important to research jurors' ability to forget inadmissible evidence heard within the courtroom.

Unintentional forgetting is often thought to be a nuisance and as a failure to remember, while intentional forgetting is considered as a strategic memory function (Wylie, Foxe & Taylor, 2008). One major element of intentional forgetting is retrieval inhibition. Retrieval inhibition describes an instance when people are cued to forget learned information, and a process begins that inhibits subsequent retrieval of the to-be-forgotten information (E.L. Bjork & Bjork, 2003). The think/no-think paradigm (TNT) is used by psychologists to study our ability to consciously enhance or inhibit retrieval of particular information. Research has used the think/no-think paradigm to inhibit the retrieval of emotional memories (Depue, Banich & Curran, 2006).

However, to our knowledge, no research has assessed whether memory for courtroom details can be enhanced and suppressed using the think/no-think paradigm. Such research could have impactful downstream effects for trials in which inadmissible evidence is an issue.

Inadmissible Evidence

Both state and federal courts have rules of evidence that exist to ensure every proceeding is administered fairly, without unjustifiable expense and delay, and to "promote the development of evidence law to the end of ascertaining the truth and securing a just determination" (Chortek, 2013, p. 117). Evidence may be classified as admissible, inadmissible, or admissible for a limited purpose. Information is deemed admissible if it is relevant and has probative value, "unless it was illegally obtained or is inflammatory, misleading, confusing, or redundant" (Kassin & Sommers, 1997, p. 1046).

During every trial, the jury is instructed to render a verdict based only on facts that were formally admitted into evidence. While trials are typically well-organized events, juries are often exposed to information that is not admitted into evidence (Kassin & Sommers, 1997). It is the trial attorney's responsibility to ensure that information presented in court complies with the rules of evidence. However, it is impossible to anticipate a variety of courtroom events such as whether witnesses will still offer testimony that is prohibited by the rules, or if the opposing attorney intentionally discusses objectionable information to weaken the opponent's case (Demaine, 2008). If an attorney or witness discloses inadmissible evidence or testimony in court and the opposing attorney objects, the judge may declare a mistrial or dismiss the evidence from the record and tell the jury to disregard it (Kassin & Sommers, 1997). However, mistrials are not commonly granted due to loss or deterioration of evidence over time, and the assumption that there will never truly be a perfectly orchestrated trial (Demaine, 2008). Because of this, it is a

standard procedure for the trial judge to instruct the members of the jury to simply disregard the evidence they should not have seen or heard (Demaine, 2008).

Due to this common practice, much research has investigated a jury members' ability to fully comply with the judge's instruction to disregard certain information. Only admissible evidence must be considered by jurors because inadmissible evidence compromises the rights of the accused criminals. However, previous research indicates that jurors have a difficult time ignoring information once they have become aware of it (Lieberman & Arndt, 2000). One possibility is the fact that jurors are unwilling to follow the judge's instructions to disregard the information because, in their minds, inadmissible evidence is only illegal not untruthful, so they still let it impact their decision because they believe it to be the truth (Thompson, Fong & Rosenhan, 1981).

Several social psychological theories also offer possible explanations as to why jurors are unable to ignore inadmissible information. For instance, there is evidence that jurors pay more attention to information that they have been instructed to disregard (Eichhorn, 1989). Reactance theory is one of the most common explanations for the failure of disregarding inadmissible information. Reaction theory proposes that when an individual is not given the freedom to choose an option, the forbidden option becomes more attractive than it had initially seemed. Research suggests that the degree of insistence in the judge's instruction to the jurors affects the jury's compliance with that instruction; the more insistent the tone, the less likely the jury is to follow the instruction to disregard (Eichhorn, 1989).

According to Wegner's (1994) theory of ironic mental processes, in the case of mental suppression, an increase in accessibility may occur when an individual does not want to think a particular thought. This is because the mental processes that are engaged to distract the

individual from that particular thought, also monitor the possible occurrence of that thought. As a result of this enhanced accessibility, the suppressed information may be thought of even more. This theory was supported by previous research in which participants were asked to think aloud after being instructed to suppress the thought of a white bear (Wegner, Schneider, Carter, & White, 1987). Participants were unable to do so and reported that they had frequent thought intrusions of white bears. The thought intrusions could be explained by the idea that when cognitive resources are allocated to one task, performance on a separate operating process will suffer (Lieberman & Arndt, 2000). This theory has also been applied toward understanding the effect of instructing jurors to disregard the information, which led to the discovery of a "backfire effect", in which the information heard becomes more influential on jurors' verdicts (Cox & Tanford, 1989). Furthermore, according to the ironic-process theory, rebound effects may occur from efforts suppressing inadmissible information where the inadmissible testimony becomes more accessible (Lieberman & Arndt, 2000). This is because the more the juror attempted to suppress that information, the more accessible it became. Various social cognition research has shown the heightened accessibility of the information will have a greater tendency to influence their judgment and the verdict of the trial (Bargh, 1989).

Judges Instruction to Disregard

Research suggests that sometimes a backfire effect occurs when jurors are told to disregard information which makes them rely more heavily on that information, but that is because they were not given the correct instructions or time to disregard (Demaine, 2008). There are two traditional approaches to admonishments used within the courtroom which Demaine (2008) distinguishes as the "elaborate forget instruction" and the "minimal forget instruction" (p. 104). The elaborate instruction is one in which the judge specifically instructs the jury to forget

the evidence and put it out of their mind like it never existed while a minimal forget instruction is briefer and tells the jury to "disregard the witness's last answer" (Demaine, 2008, p 104). In one study, participants were given one of three instruction types: a traditional elaborate forget instruction, a traditional minimal forget instruction, and a neutralization instruction (Demaine, 2008). The neutralization instruction told the jurors that the inadmissible evidence may bias their judgment on their overall verdict. Participants in both the elaborate and neutralization instruction groups eliminated the influence of the inadmissible evidence on their verdicts, where the minimal forget instruction failed to do so. These results suggest that instructions to disregard inadmissible evidence can work, as long as they are well formulated (Demaine, 2008).

There is a growing body of research dedicated to determining the possibility of an individual's ability to suppress certain information if given the right instruction to do so. This research suggests that if utilizing a paradigm called think/no-think, individuals will be able to suppress certain details after being continually told to do so. Utilizing this paradigm within the criminal justice system may aid in juror's ability to disregard inadmissible evidence.

Think/No-Think Paradigm

Previous research suggests that individuals can suppress certain memories by using what is known as the think/no-think paradigm. Memory suppression refers to the ability to exert control over the retrieval of unwanted memories, which is a function that is often thought to be supported by inhibitory processes (Murray, Anderson & Kensinger, 2015). The role of inhibition in suppression can be measured by studying the impact suppression has on the retention of items on later tests, which is often done by using the think/no-think task (Murray et al., 2015). The think/no-think paradigm mirrors situations in which we may come across a reminder to a

memory we would rather not think about and attempt to keep it out of mind (Anderson. & Levy, 2009).

In the classic think/no-think paradigm subjects were initially trained on unrelated word pairs. After the initial learning phase, subjects are presented with one of the items (cue) and told to recall the other associated item (target). When subjects can recall a majority of the target items after the cues, they can move on to the next phase. The next phase is the think/no-think phase in which each subject is asked to exert control over retrieval. Each participant is presented with a cue from one of the pairs and depending on which cue appeared, subjects were told to either recall (think about) the associated word (target) with that cue, or to not think about the associated target (suppression). For the suppression pairs, subjects are instructed not to allow the associated memory to enter consciousness at all. A third condition which is called the baseline, where the item pairs are only showed during the learning phase is also used (Anderson & Levy, 2009).

Since awareness cannot be observed, it is often hard to know whether a person prevents a memory from entering consciousness; which is why instead, the think/no-think paradigm measures the aftereffects of stropping the retrieval (Anderson & Levy, 2009). To assess this, the participants are given a final test; they are shown the cues from all three of the conditions (think, no-think, baseline). Participants are then asked to recall the associated item with that cue (target). Recall for the think items was found to be significantly higher compared to the baseline items, while recall for the no-think items compared to the baseline was found to be significantly worse. These results indicate that the target items were suppressed by inhibitory control during this task (Anderson & Green, 2001). It is also important to note that the more often subjects suppressed retrieval of the target item, the harder it was for the subjects to recall the target item in the last phase of recall. The recall directly corresponded with the number of times (0,1,8, or 16) the

control functions had been used to either suppress or think of the target items in the think/no-think task (Anderson & Green, 2001).

Research Using Think/No-Think Paradigm

A major question exists concerning how effectively suppression works for emotional memories. It is a pertinent question within the community due to its possible beneficial impact on people with traumatic memories, or even suffering from disorders such as PTSD. Information heard by jurors within the courtroom may also be emotional, so it is important to acknowledge how effective suppression for emotional memories can be. A key aspect to focus on when examining the think/no-think paradigm concerning emotional items is utilizing face/word pairs instead of word/word pairs because people experience emotions verbally and nonverbally. Previous research used face/word pairs in which the faces were all of neutral expression and the words were half neutral and half emotionally negative (Depue et al., 2006). Recall was higher for the negative words compared to baseline, and the neutral words were recalled less than the baseline (Depue et al., 2006). These results indicate that relative to memory for neutral information, memory for emotional information was better in the think condition and reduced in the no-think condition (Depue, et al., 2006).

Another study was done utilizing the think/no-think paradigm to examine whether participants can inhibit neutral and negatively valenced memories. This study consisted of four valence groups (neutral-neutral, negative-neutral, neutral-negative, and negative-negative) and within each valence group were six pairs to make up the think, no-think and baseline conditions (van Shie, Geraerts & Anderson, 2013). Recall was poorer for words in the no-think condition compared to baseline, and recall was better than baseline in the think conditions which shows that direct suppression can impair recall of unwanted memories consistent with previous research

(van Shie et al., 2013). Overall recall did not vary with the type of cue valence which provides the finding that when using a direct suppression strategy such as the think/no-think task, people's ability to suppress unwanted memories did not differ for memories cued by either negative or neutral reminders (van Shie et al., 2013). These findings are significant because they provide the first evidence that emotionally negative memories can be forgotten when using direct suppression. It is important that the think/no-think paradigm was shown to be effective with emotional memories as well, because oftentimes in court cases the information heard by the jurors may be emotional, but due to these findings, they may still be able to utilize this paradigm to disregard even emotional inadmissible evidence.

Current Study and Hypotheses

Since inhibition is a common phenomenon within the think/no-think paradigm (Bjork & Bjork, 2003) evidence of memory suppression should be found when subjects are told to suppress witness statements matched with photos of said witness. Being able to suppress witness statements after instruction to do so would be significantly beneficial within the criminal justice system. Although there is research utilizing the think/no-think paradigm for word pairs and facial pairs to suppress intrusive and traumatic images, there is currently no research examining inhibition and memory suppression within the courts (van Schie et al., 2013). Previous research has shown that during a trial when a jury is told to disregard the information, it is highly unlikely that they will be able to forget that information they were told (Steblay et al., 2006). Jurors not being able to forget information could create issues when they are determining if the defendant is guilty or not guilty which could impact their decision making.

The purpose of the present study was to examine if using the think/no-think paradigm would be useful in aiding jurors' ability to disregard inadmissible evidence heard within the

courtroom. More specifically, this study aims to utilize the think/no-think paradigm in a setting in which participants are told to suppress certain witness statements after being told that witness is unreliable, and their evidence is inadmissible. If jurors can actively suppress inadmissible evidence, it will create more accurate and responsible verdict outcomes. This study aims at examining if participants will be able to "forget" the witness statements of the unreliable witnesses, while remembering the witness statements of the reliable witnesses compared to the baseline witness statements. Forgetting and remembering will be measured using multiple-choice questions and how accurately the participants recall the statements. Multiple-choice was chosen instead of free recall due to the long sentence structure of items to be remembered/forgotten. It was thought it would be easier to code.

It is hypothesized that participants will have a lower rate of recall for the suppressed witness statements along with the witness photos that they were told to forget (unreliable) because effects have been found in similar studies using word-face material (Depue et. al. 2006). Participants are also expected to have a higher rate of recall for the statements they were told to remember (reliable) compared to baseline conditions. It is also hypothesized that participants will label the witnesses they were told to forget as less reliable while labeling the witnesses they were supposed to remember as more reliable.

Method

Research Design

In this within-subjects experimental study of juror memory, participants were randomly assigned to one of nine different counterbalance conditions, which were created with the Latin square design for nine witness photos and three levels of instruction (forget, remember, no instruction). There is a total number of 54 photo X instruction types across conditions. This

design was implemented to counterbalance order effect and allow each photo and each instruction type to appear once in every possible position of the sequence.

Participants

This sample is meant to represent jury eligible people; people who are over 18 and U.S. citizens. Therefore, the inclusion criteria for this study requires participants to be at least 18-years-old and a U.S. citizen. The number of participants recruited was 255. After excluding subjects based on failed attention checks, age, and below chance performance (as described below), the final sample included 160 healthy adults between the ages of 18 to 65 with 80 (49.7%) men and 79 (49.1%) women and 1 identified as other (.6%) who identified themselves as White (*n*=133, or 82.6%); Black or African American (*n*=11, or 6.8%); Hispanic or Latino (*n*=9, or 5.6%); Asian (*n*=6, or 3.7%); or Native Hawaiian or Pacific Islander (*n*=1, or .6%). Participants reported having English fluency (*n*=160, or 100%). The average age of participants was 35.5 years (*SD*=5 years; Range = 18-65). Because this study relies so heavily on instruction, we restricted eligibility to fluent English speakers. If participants were not fluent in English, their data was thrown out. If participants were above the age of 65, their data was also thrown out due to this study being based on memory (*n*=5). Participants who scored below chance, which was an average of 11.11%, were not used (*n*=69). Participants who failed the attention check's data was also thrown out (*n*=24). The number of participants contacted, screened, dropped out, and the total amount who completed the survey is stored via Qualtrics.com. Participants were recruited by the use of Amazon Mechanical Turk (MTurk) (see appendix A for the recruitment advertisement) and completed the survey in exchange for monetary compensation of $1.50.

Procedure

The current study recruited participants through an advertisement on Mechanical Turk. Participants were told that the purpose of the study was to explore the ability to forget witness statements when instructed they are unreliable or inadmissible in court. Before participating, participants were told how long the survey will be along with how much money they will receive for participation. Participants were given a link to a survey on Qualtrics.com, which they accessed on their choice of computer. Before beginning the survey, each participant completed an online consent form (Appendix B). The experimental paradigm used in the experiment was a think/no-think paradigm. Participants learned nine face/statement pairs. Participants were randomly assigned via Qualtrics to one of nine surveys created using a Latin square design and read about a hypothetical court case. During the learning phase, participants were presented with the face/statement pairs and told to remember each pair.

The participants were then told that they need to disregard certain witnesses and their statements, as they were found to be unreliable. The next phase involved the think/no-think task in which the participants were presented with six photos and instructed to: (1) either try to remember the target statements (think condition), or (2) to actively inhibit the target statements (no-think condition). Three photos were not shown to act as the control during the later recognition test. These faces are cues for the participant to recall the associated statement.

During the last phase of the experiment, the recognition test, participants were once again presented with each witness photo and instructed to answer what each witness said. They were then asked how reliable each witness was, which was assumed to be based on if they were told to remember or forget their associated statement. In the end, the participants filled out a demographic's questionnaire. It took the participants approximately 10 to 15 minutes to

complete the survey. Data is stored on a locked computer following the Institutional Review Board protocols.

Materials

This study used a survey comprised of photos and statements and a hypothetical court case (see Appendix D). The validity and reliability have not been examined as these are new measures created by the researcher. Each participant took a survey designed to measure the degree to which people can forget witness statements. Part 1 of the survey consisted of the instructions: the case presented to the subjects is the hypothetical Adams-Zemp case developed by Thibaut and Walker (1975) for use in jury simulation research (see Appendix C for details). The case concerns a barroom fight during which the defendant, Adams, stabs Zemp (the victim) with a piece of broken glass. Subjects are told it is their job as jurors to determine whether the Defendant's violent response to the assault had been justified under all circumstances.

Part 2 of the survey consisted of the learning phase: following the case summary, the evidence is presented in the form of a witness photo with a statement underneath. Each statement was chosen from a list of 50 "facts" that had been pretested by Thibaut and Walker (1975) and scaled in terms of their strength or weakness (see appendix D for statements). The photos were created through artificial intelligence on a face generator website titled (https://www.thispersondoesnotexist.com/). The photos were chosen to provide a diverse and realistic sample to reflect the U.S. population. The nine photos included four women (1 White, 1 Black or African American, 1 Hispanic or Latino, and 1 Asian) and five men (2 White, 1 Black or African American, 1 Indian, and 1 Asian). Part 3 of the survey included more instructions: participants were told some statements were deemed inadmissible and they need to disregard them according to the judge.

Part 4 consisted of the TNT phase: participants were presented with three photo/statement combinations under the “forget” instruction and three photo/statement combinations under the “remember” instruction with three photos left out to be used as the baseline/control condition (see Figure 1). The order in which the forget and remember items were presented was randomized. There was a fixed amount of time (5 seconds) per photo and instruction before the possibility of advancement. After 10 seconds, the survey would automatically advance to the next witness to ensure each participant was looking at each photo for an exact amount of time. Part 5 of the survey consisted of the recognition phase: participants were presented nine multiple-choice questions, one at a time. Specifically, each photo was presented with all nine of the witness statements underneath in multiple-choice format and they were asked to determine which statement paired with that particular face (see Figure 1).

Part 6 of the survey was the reliability rating: participants were presented with all nine photos again and asked to determine how reliable each witness was with a 7-point Likert scale of reliability (1-Not at all reliable, 2-Slightly reliable, 3-Somewhat reliable, 4-Neutral, 5-Moderately, 6-Very reliable, 7-Extremely reliable) (see Figure 2). Part 7 of the survey was the demographics: participants completed demographic questions (age, sex, ethnicity, fluency in English).

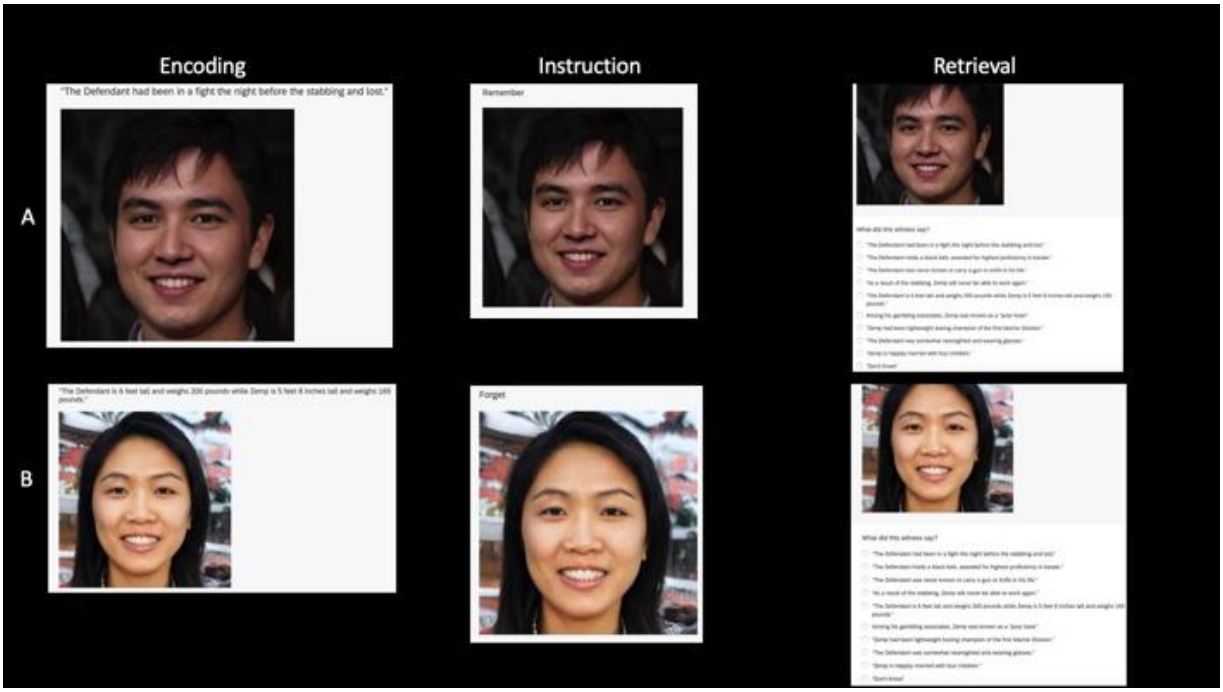

Figure 1. Example of what participants saw for the encoding, instruction, and retrieval phase.

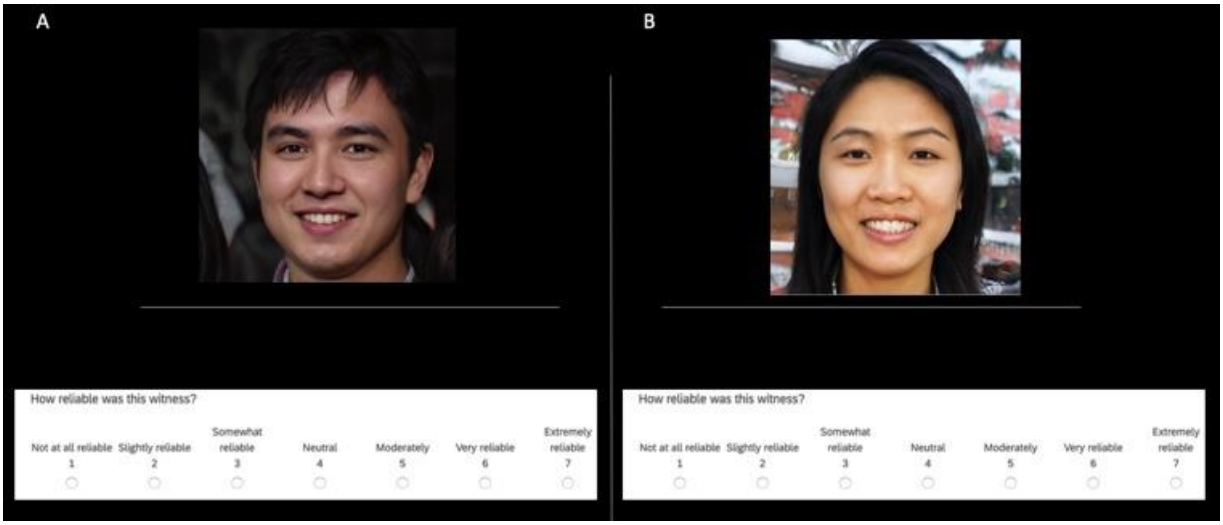

Figure 2. Example of what participants saw during the reliability rating phase, using the 7-point Likert Scale.

Results

A one-way repeated measures ANOVA was conducted to compare the effect of instruction type (ThinkCondition, NoThinkCondition, BaselineCondition) on memory accuracy for admissible and inadmissible witness testimony. There was no significant effect of instruction type on memory accuracy, F (2, 318) <1, p =.377. However, there was a notable pattern. On average participants scored 56.02% when asked to recall witness statements they were told to remember, 51.24% when asked to recall witness statements they were told to forget, and 54.97% when asked to recall witness statements that they were not given instruction on (see Figure 5). This pattern illustrates the exact pattern one would expect to find within a think/no-think paradigm. Nonetheless, this pattern is not statistically significant.

Although not a primary research interest, we found a significant correlation between duration (i.e., how long it took subjects to complete the survey) and overall performance on the memory test (r (158) =.217., p=.006. That is, the longer participants took to complete the survey, the better their performance. More specifically, we found this correlation was driven by performance on remember statements (r (158) =.173, p=.029) and baseline/control statements (r (158). =.249, p=.001), but not forget statements (r (158) = .047, p=.559.

We next assessed whether reliability ratings differed as a result of instruction type (remember, forget, control). Reliability ratings were binned into seven ordinal categories. A Friedman test revealed reliability ratings differed across instruction type (remember, forget, control) (χ^2 (8) = 57.20, p < .001, Kendall's W = .48). Conover's post hoc comparisons revealed reliability ratings were significantly higher for the remember condition (M = 5.09, SD = 1.07) as compared to the forget condition (M = 3.69, SD = 1.63; t(322) = 7.50, p < .001) and the control

condition (M = 4.63, SD = 1.24; t (322) = 2.62, p < .01). Also, reliability ratings were higher for the control condition than for the forget condition (t (322) = 4.84, p < .001).

We also assessed whether reliability ratings differed as a result of the witness's photo. Reliability ratings were binned into seven ordinal categories. A Friedman test revealed reliability ratings differed across the nine different witnesses (χ^2 (8) = 34.60, p < .001, Kendall's W = .31). Bonferonni-corrected Conover's post hoc comparisons revealed reliability ratings were significantly lower for Witness 4 (M = 4.22, SD = 1.60) as compared to Witness 1 (M = 4.58, SD = 1.68; t (1272) = 3.632, p < .05), Witness 2 (M = 4.63, SD = 1.79; t (1272) = 4.61, p < .001), Witness 5 (M = 4.67, SD = 1.69; t (1272) = 3.94, p < .005), Witness 6 (M = 4.44, SD = 1.65; t (1272) = 1.99, p < .05), Witness 7 (M = 4.60, SD = 1.63; t (1272) = 3.57, p < .001), and Witness 8 (M = 4.47, SD = 1,72; t (1272) = 2.35, p < .05). Also, Witness 2 was rated more reliable than Witness 9 (M = 4.33, SD = 1.78; t (1272) = 3.47, p < .05).

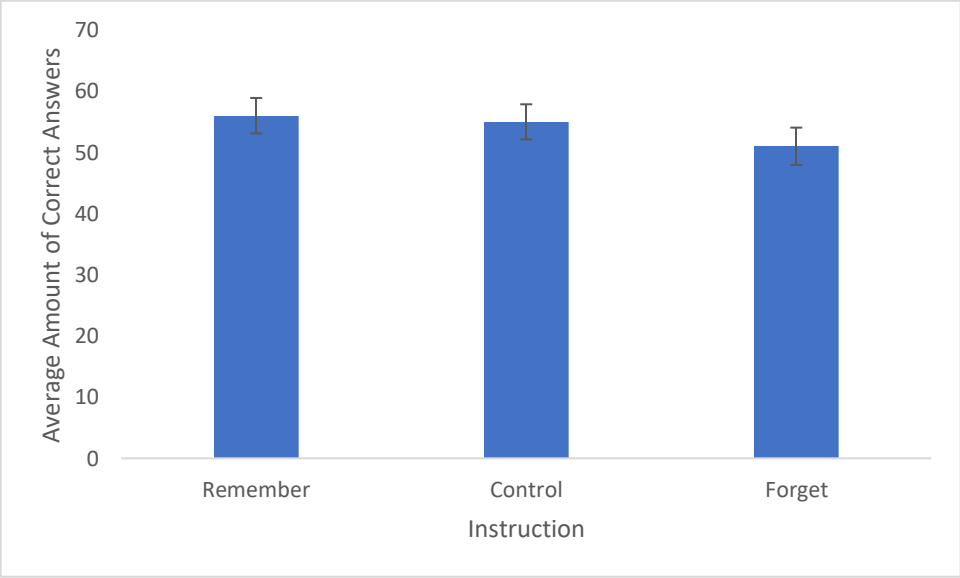

Figure 5. Mean amount of correctly answered questions during the recognition phase of the think/no-think section based on instruction type. Error bars represent standard errors.

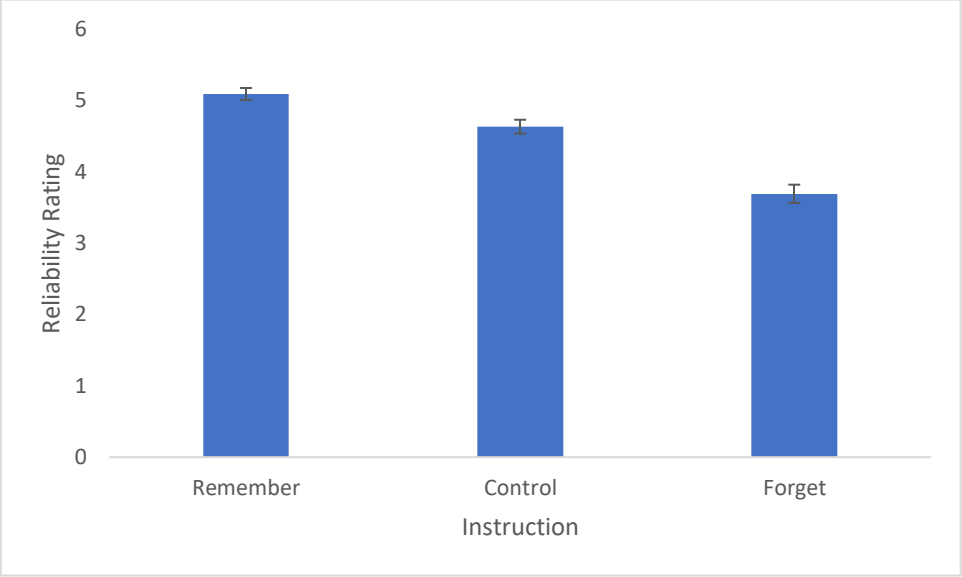

Figure 6. Average reliability rating according to instruction type. Error bars represent standard errors.

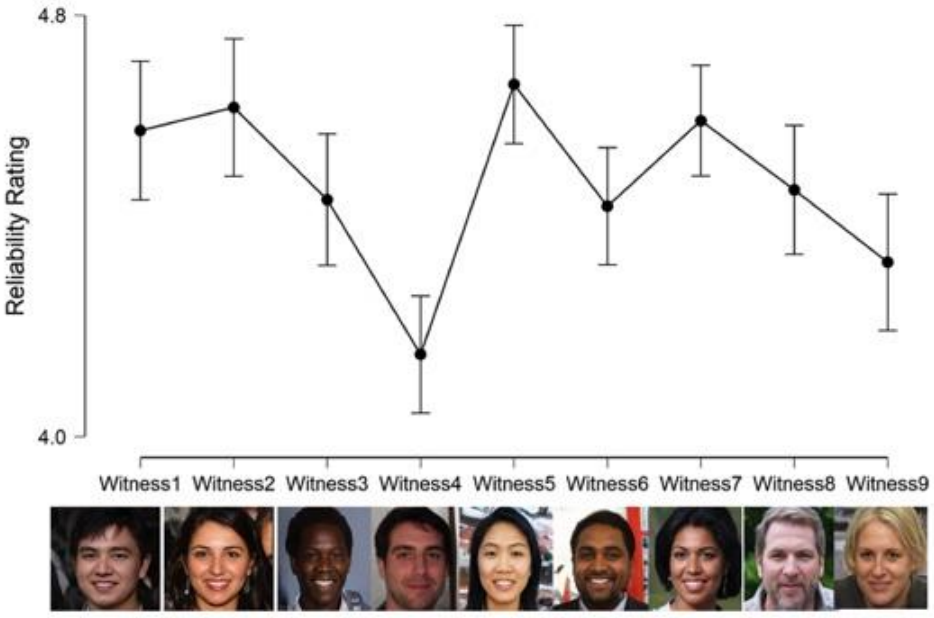

Figure 7. Average reliability rating for each witness photo.

Discussion

In this experiment, the think/no-think paradigm was used to examine if it was possible to find indications of a think/no-think effect in stimuli consisting of faces and statements. Previous research has found effects in word-word material (Anderson & Green, 2001) as well as in face-word material (Depue et al., 2006). This was the first study to examine if significant results could be found using the TNT paradigm on face-statement pairs. Although our findings were not significant, there was still a pattern found to support the TNT literature that suggests participants can suppress certain details. For example, when told to forget a witness statement, participants had a lower recall for those statements compared to the baseline (no instruction) and the think instruction. Participants also typically had a higher recall for witness statements when told to remember them, compared to the baseline and no think (forget) instruction. This pattern is important because it illustrates that if there was a larger sample, a significant effect could be found.

A correlation was found between how long it took participants to complete the survey or duration, and the overall rate of recall, specifically driven by the remember condition and the control condition. When a participant took longer to complete the survey, their rate of recall increased for remember and control statements. On average it took participants 10 minutes to complete. This is important because it shows that there is a possibility of participants to do better overall if their time taken on the survey increased, and this information is helpful for future studies. For example, in a follow-up study one might want to set a fixed amount of time for every question, including instructions, not just during the TNT phase. This would assure each participant spends on average the same amount of time completing the survey, which if long enough, could increase their overall recall rate.

A significant relationship was also found on instruction type and reliability rating. For example, when a participant was told to remember a specific witness statement, they were more likely to give a higher rate of reliability compared to when they were told to forget a witness statement or given no instruction at all. This could illustrate that participants associated the instruction to remember or forget with the reliability of that witness because participants were told to forget witness statements that were deemed inadmissible in court, in turn making that witness unreliable.

The relationship between witness photo and reliability rating was also examined. Although on average the photos were rated between 4 and 4.8 on reliability, there were significant effects between certain witnesses. Reliability ratings were significantly lower for witness 4 compared to witness 1, 2, 5, 6, 7, and 8. Also, witness 2 was rated more reliable than witness 9. These results illustrate that when disregarding instruction type, there was a significant difference in reliability rating for certain photos, but in the opposite direction than we were expecting.

Despite protections put into place to ensure equality under the law, research shows a Defendant's race can influence juror verdicts, sentencing decisions, and other trial judgments (Hunt, 2017). Specifically, there is support for jurors rendering more favorable judgments for same race defendants, while making harsher judgments for other race defendants (Hunt, 2017). Research also illustrates strong evidence that Black and Latino defendants are more likely to be incarcerated, and Asian defendants less likely (Hunt, 2015). Our current study does not specify or focus on the defendant’s race; however, we were expecting similar biases to be projected onto the witnesses. We were surprised to find that witness 4, a White man, was perceived as less reliable compared to other witnesses including an Asian man, a Latina woman, an Asian woman,

an Indian man, and a Black woman. Witness 4 was also rated less reliable than witness 8, who was also a White man, which is important to note. This could mean that witness 4 was a poorly chosen photo, and something in particular stood out compared to the other White man's photo. Witness 2, a Latina woman was also perceived to be significantly more reliable than witness 9, a White woman, another surprising result. Overall, the Asian woman received the highest rating of reliability. This finding could relate to the previous research suggesting Asian defendants are less likely to be incarcerated; in this instance, an Asian witness more likely to be perceived as reliable compared to other races. There is also research specifically regarding witness credibility and racial effects. In one study participants rated the Black eyewitness as more credible while rating the White eyewitness as less credible (Abshire & Bornstein, 2003). However, it is suggested that these results are due to participants' awareness of "cross-race-effect" which suggests people can better identify people of their own race, and their attempt to correct for it (Abshire & Bornstein, 2003). The majority of the participants in the current study identified themselves as White (82%), creating the possibility of participant awareness of racial biases and their attempts to correct for it.

The implications for this research are best applied to judges, jurors, and lawyers within the court system. A juror's ability to disregard inadmissible evidence directly affects their decision making, and although there was not a significant relationship found, the trend suggests the possibility of jurors being able to disregard inadmissible evidence in trials if given the correct instruction and adequate amount of time to do so in future studies. This could impact the overall fairness of the legal system because if jurors can comply with these instructions, it could create more just outcomes in trials where this is an issue. With some adjustments made to the study, there could potentially be significant results in the future. Jurors' perception of the witnesses also

plays a major role in overall fairness and the outcome in trials. Depending on how reliable jurors assess the witnesses to be, whether accurately or not, can directly impact the way they determine the verdict.

This study does not come without limitations. Due to limited time and resources, participants were not given a training phase like in the original model. Typically, participants will be given time to remember the stimuli and quizzed to ensure satisfactory learning of pairs before the think/no-think phase. In this study, participants were given time to remember each pair but not quizzed until after the think/no-think phase. Another limitation is that each participant only went through the think/no-think phase one time, instead of multiple times which occurs in other studies. For example, in the face-word material study, within each condition (think, no-think) participants viewed half of the faces 5 times and the other half 10 times (Depue et al., 2006). In another study, each think and no-think cue were repeated a total of 12 times (van Schie et al., 2013). There were also only nine witness photo/statement combinations which could have allowed the participants to more easily remember each one unlike if there was a higher number of combinations. The low number was chosen to be more reflective of an actual court case, where there would not be so many witnesses. Another limitation within this study was that although the survey was modeled after the original think/no-think paradigm, this measure was not piloted or tested for validity or reliability.

Due to limited time, the stimuli used within the survey were not piloted. A future study should be done that has people rate each face solely on reliability, which could determine if there are any outliers and replace it with a different face. Although the witness statements were taken from previous juror research, certain statements seemed to be remembered more by participants regardless of instruction type. The statement “the defendant was never known to carry a gun or a

knife in his life" was one that stood out compared to the rest, regardless of what instruction condition it was in. A way to improve the current study would be to only use equally memorable stimuli (photos and statements) that have been piloted.

Future research regarding this topic should have participants go through the think/no-think multiple times while also having more photo/statement combinations. Using race as a standalone factor for future studies also would be an interesting addition. We were not expecting significant differences in reliability ratings between photos. With such a large body of research focused on the cross-face-effect, and how racial biases are a major part of the justice system, a more in-depth analysis could be done. Analyzing participant race in comparison to their reliability rating of each witness would be a fascinating insight into witness race and their perceived reliability. It is also possible that it could be easier to remember or suppress the same race. If participants more easily suppress or remember based upon race, that would impact the overall recognition test regardless of the instruction given. This is another reason why analyzing participant race would be an important factor to observe in the future.

References

Abshire, J., & Bornstein, B. (2003). Juror Sensitivity to the Cross-Race Effect. *Law and Human Behavior, 27*(5), 471-480.

Anderson, M. C., & Green, C. (2001). Suppressing unwanted memories by executive control. *Nature 410,* 366–369.

Anderson, M. C., & Levy, B. J. (2009). Suppressing unwanted memories. Current Directions in *Psychological Science, 18*(4), 189–194. https://doi-org.ez.lib.jjay.cuny.edu/10.1111/j.1467-8721.2009.01634.x

Bargh, J. A. (1989). Conditional automaticity: Varieties of automatic influence in social perception and cognition. In J. S. Uleman & J. A. Bargh (Eds.), Unintended thought (pp. 3-51). New York: Guilford Press.

Bjork, E.L., Bjork, R.A. (2003). Intentional forgetting can increase, not decrease, residual influences of to-be-forgotten information. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 29*(4), 524-531.

Chortek, M. (2013). The psychology of unknowing: Inadmissible evidence in jury and bench trials. *The Review of Litigation, 32*(1), 117-146. Retrieved from https://ez.lib.jjay.cuny.edu/login?url=https://search-proquest-com.ez.lib.jjay.cuny.edu/docview/1356640783?accountid=11724

Cox, M., & Tanford, S. (1989). Effects of evidence and instructions in civil trials: An experimental investigation of rules of admissibility. *Social Behavior, 4,* 31-55.

del Prete, F., Hanczakowski, M., Bajo, M. T., & Mazzoni, G. (2015). Inhibitory effects of thought substitution in the think/no-think task: Evidence from independent

cues. *Memory, 23*(4), 507–517. https://doi-org.ez.lib.jjay.cuny.edu/10.1080/09658211.2014.907429

Depue, B., Banich, M., & Curran, T. (2006). Suppression of Emotional and Nonemotional Content in Memory: Effects of Repetition on Cognitive Control. *Psychological Science, 17*(5), 441-447. Retrieved from http://www.jstor.org.ez.lib.jjay.cuny.edu/stable/40064562

Demaine, L. J. (2008). In search of an anti-elephant: Confronting the human inability to forget inadmissible evidence. *George Mason Law Review, 16*(1), 99-140.

Eichhorn, L. (1989). Social Science Findings and the Jury's Ability to Disregard Evidence under the Federal Rules of Evidence. *Law and Contemporary Problems, 52*(4), 341-353. doi:10.2307/1191918

Hougham, Courtney, "Judicial Instructions and the Juror's Ability to Disregard Inadmissible Evidence: Can Varying the Timing and Content of Judicial Instructions Influence Juror Decision-Making?" (2011). *CUNY Academic Works.*

Hunt, J. (2015). *Race in the justice system.* (pp. 125-161). American Psychological Association.

Hunt, J. S. (2017). Studying the effects of race, ethnicity, and culture on jury behavior. In *The psychology of juries.* (pp. 83–107). American Psychological Association. https://doi-org.ez.lib.jjay.cuny.edu/10.1037/0000026-005

Kassin, S., & Sommers, S. (1997). Inadmissible Testimony, Instructions to Disregard, and the Jury: Substantive Versus Procedural Considerations. *Personality and Social Psychology Bulletin, 23*(10), 1046-1054.

Lieberman, J. D., & Arndt, J. (2000). Understanding the limits of limiting instructions: Social psychological explanations for the failures of instructions to disregard pretrial publicity

and other inadmissible evidence. *Psychology, Public Policy, and Law, 6*(3), 677–711. https://doi-org.ez.lib.jjay.cuny.edu/10.1037/1076-8971.6.3.677

Murray, B. D., Anderson, M. C., & Kensinger, E. A. (2015). Older adults can suppress unwanted memories when given an appropriate strategy. *Psychology and Aging*, *30*(1), 9–25. https://doi-org.ez.lib.jjay.cuny.edu/10.1037/a0038611.supp (Supplemental)

Steblay, N., Hosch, H., Scott E. Culhane, & Adam McWethy. (2006). The Impact on Juror Verdicts of Judicial Instruction to Disregard Inadmissible Evidence: A Meta-Analysis. *Law and Human Behavior*, *30*(4), 469-492. Retrieved from http://www.jstor.org.ez.lib.jjay.cuny.edu/stable/4499487

Thibaut, J., & Walker, L. *Procedural Justice: A Psychological Analysis*, Hillsdale, New Jersey: Lawrence Erlbaum Associates, 1975.

Thompson, W. C., Fong, G. T., & Rosenhan, D. L. (1981). Inadmissible evidence and juror verdicts. *Journal of Personality and Social Psychology*, *40*(3), 453–463. https://doi-org.ez.lib.jjay.cuny.edu/10.1037/0022-3514.40.3.453

Wegner, D. M., Schneider, D. J., Carter, S., & White, L. (1987). Paradoxical effects of thought suppression. *Journal of Personality and Social Psychology, 58*, 409-418.

Wylie, G. R., Foxe, J. J., & Taylor, T. L. (2008). Forgetting as an Active Process: An fMRI Investigation of Item-Method—Directed Forgetting. Cerebral Cortex March 2008;18: 670—682

van Schie, K., Geraerts, E., & Anderson, M. (2013). Emotional and non-emotional memories are suppressible under direct suppression instructions. *Cognition & Emotion*, *27*(6), 1122–1131. https://doi-org.ez.lib.jjay.cuny.edu/10.1080/02699931.2013.765387

Appendix A

Mturk Recruitment Posting

Title: Memory in the Courtroom

Description: The purpose of this study is to examine if people are able to forget witness statements when told that they are unreliable in court. If you choose to participate in this study, you will take a survey in which you will be shown photos of witnesses accompanied by their statements after a bar fight. This survey should take about 15/20 minutes. We will review completed responses to ensure that you completed the study and provided usable data before confirming compensation. You will not be compensated if you submitted your responses in an impossibly short amount of time, failed attention checks, or provided nonsensical responses. Only one completed assignment per IP address will be compensated.

Keywords: Survey

Reward per assignment: $1.50

Worker requirements: Location is in United States, 18-65 years of age, English fluency.

Appendix B

Informed Consent

THE CITY UNIVERSITY OF NEW YORK
John Jay College of Criminal Justice
Department of Psychology

CONSENT TO PARTICIPATE IN A RESEARCH STUDY

Title of Research Study: Memory Suppression in the Courtroom

Principal Investigator: Catherine Hackett
MA Student
Advisor: Dr. Margaret Kovera, Ph.D
Faculty
Dr. Jessica Karanian, Ph.D

You are being asked to participate in a research study because you are a healthy adult between 18 to 65-years-old, and you are a fluent English speaker.

You may wish to participate to become familiar with the way that psychologists study human cognition and memory processes in a controlled research lab. You may also enjoy helping us build our knowledge base so that we can better understand how cognition functions.

In terms of reasons that you may not want to participate: (1) It is possible that you will find this task mentally challenging – but no more than what you typically face in an academic environment. (2) It is also possible that you will become bored. However, you may withdraw from the study or choose to take a break at any time.

Purpose:
The purpose of this research study is to investigate whether humans can actively suppress certain information heard in the courtroom.
Procedures:
The present experiment should take you no longer than 15-20 minutes. The first minute or so will be dedicated to consent procedures and the last few minutes will be dedicated to a demographic questionnaire If you choose to participate in the present research, here is a list of procedures in chronological order that will all take place.

- Instructions. You will read through the instructions for the task that you will complete.
- Memory sessions. You will complete a number of memory sessions in which you study various witness statements about the alleged offense. In a second phase, you will be asked to remember the statements of some witnesses and to avoid remembering the statements of other witnesses. This phase will repeat multiple

Appendix B (continued)

times. Then, you will complete a final memory test to see how well you remember the statements made. You will complete multiple memory sessions while you are participating in this study.

- Brief demographic questionnaire. You will complete a very short survey that will provide important information on your background including your age, your level of education, ethnicity, and sex.

Time Commitment:

Your participation in this research study is expected to last for a total of 15-20 minutes.

Potential Risks or Discomforts:

- During some of the tasks, you will be tasked to remember information, which can be mentally tiring. However, we anticipate that there are no foreseeable risks or discomforts beyond that of a typical educational or office environment.

Potential Benefits:

- You will not directly benefit from your participation in this research study.
- However, you may find pleasure in knowing that your participation in the study contributed to science. Specifically, it will help us understand the mechanisms that give rise to human memories, which are a key component of the human experience.

Payment for Participation:

You will receive $1.50 for the completion of this study. Payment will only occur if the research is completed in its entirety. After completion of the survey, you will be given a unique code to copy. Then you will go back to the MTurk page and paste the code in which you will then be able to get paid. You will not be compensated if you submit your responses in an impossibly short amount of time, fail attention checks, or provide nonsensical responses.

New Information:

You will be notified about any new information regarding this study that may affect your willingness to participate in a timely manner.

Confidentiality:

We will make our best efforts to maintain confidentiality of any information that is collected during this research study, and that can identify you. We will disclose this information only with your permission or as required by law.

Your survey answers will be stored initially with Qualtrics.com in a password protected electronic format. Data will later be downloaded and stored with a member of the authorized research team on a password protected computer. Each participant will be given an identifying number that will be stored with the information provided in the survey to ensure privacy. No names or email addresses or any personal identifiers will be stored with the information provided.

The research team, authorized CUNY staff, and government agencies that oversee this type of research may have access to research data and records in order to monitor the research. Research records provided to authorized, non-CUNY individuals will not contain identifiable information about you. Publications and/or presentations that result from this study will not identify you by name. The information collected as part of the research will not be used or distributed for future research studies.

Participants' Rights:

Appendix B (continued)

- Your participation in this research study is entirely **voluntary**. If you decide not to participate, there will be no penalty to you, and you will not lose any benefits to which you are otherwise entitled.
- You can decide to withdraw your consent and stop participating in the research at any time, however, in order to be compensated, the research must be completed in its entirety.

Questions, Comments or Concerns:

If you have any questions, comments or concerns about the research, you can talk to one of the following researchers:

- Catherine Hackett, MA, John Jay College
  - Email: Catherine.hackett@jjay.cuny.edu
- Margaret Bull Kovera, Ph.D, Presidential Scholar and Professor, John Jay College
  - Email: mkovera@jjay.cuny.edu

If you have questions about your rights as a research participant, or you have comments or concerns that you would like to discuss with someone other than the researchers, please call the CUNY Research Compliance Administrator at 646-664-8918 or email HRPP@cuny.edu. Alternately, you can write to:

CUNY Office of the Vice Chancellor for Research
Attn: Research Compliance Administrator
205 East 42nd Street
New York, NY 10017

Appendix C

Survey: Part 1 Instructions

The following is a criminal case about two men, Adams and Zemp. The two men had been close friends for years. Recently, they began to gamble heavily together and, as matters became more involved, had met at a bar to discuss their relationship. After a period of conversation, Zemp knocked Adams to the floor and threw an object in his direction. Adams responded by stabbing Zemp in the stomach with a piece of glass.

It is your job as jurors to determine whether or not the Defendant's violent response to an assault had been justified under all circumstances.

Self-defense Rule:

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

The following statements are made by witnesses who either know the men involved or who were there the night of the assault. You should remember both the face and the corresponding statement. It is important to remember who said what.

Appendix D

Survey: Part 2 Learning Phase

"The Defendant had been in a fight the night before the stabbing and lost."

"The Defendant holds a black belt, awarded for highest proficiency in karate."

"The Defendant was never known to carry a gun or knife in his life."

"As a result of the stabbing, Zemp will never be able to work again."

Appendix D (continued)

"The Defendant is 6 feet tall and weighs 200 pounds while Zemp is 5 feet 8 inches tall and weighs 165 pounds."

“Among his gambling associates, Zemp was known as a "poor loser".

"Zemp had been lightweight boxing champion of the first Marine Division."

"The Defendant was somewhat nearsighted and wearing glasses."

"Zemp is happily married with four children."

Appendix E

Survey: Part 3 Instructions

After hearing all of these statements, some have been deemed inadmissible in court due to their relevancy and were objected by either the Defense Attorney or Prosecution. Because of this, the judge strikes those statements from the record and tells you to disregard them.

You will now be shown each witness photo again with instruction to either remember their corresponding statement or forget it based on its admissibility.

Appendix F

Survey: Part 4 TNT Task (One of nine options)

You will now be instructed to either remember or forget certain witness statements based on their photos.

Remember

Forget

Remember

Forget

Remember

Forget

Appendix G

Survey: Part 5 Recognition Phase

Now you will be shown each witness photograph again and will be asked to remember what each witness said, or you can choose "Don't Remember" if you do not remember.

What did this witness say?

- "The Defendant had been in a fight the night before the stabbing and lost."
- "The Defendant holds a black belt, awarded for highest proficiency in karate."
- "The Defendant was never known to carry a gun or knife in his life."
- "As a result of the stabbing, Zemp will never be able to work again."
- "The Defendant is 6 feet tall and weighs 200 pounds while Zemp is 5 feet 8 inches tall and weighs 165 pounds."
- Among his gambling associates, Zemp was known as a "poor loser".
- "Zemp had been lightweight boxing champion of the first Marine Division."
- "The Defendant was somewhat nearsighted and wearing glasses."
- "Zemp is happily married with four children."
- "Don't Know"

What did this witness say?

- "The Defendant had been in a fight the night before the stabbing and lost."
- "The Defendant holds a black belt, awarded for highest proficiency in karate."
- "The Defendant was never known to carry a gun or knife in his life."
- "As a result of the stabbing, Zemp will never be able to work again."
- "The Defendant is 6 feet tall and weighs 200 pounds while Zemp is 5 feet 8 inches tall and weighs 165 pounds."
- Among his gambling associates, Zemp was known as a "poor loser".
- "Zemp had been lightweight boxing champion of the first Marine Division."
- "The Defendant was somewhat nearsighted and wearing glasses."
- "Zemp is happily married with four children."
- "Don't Know"

What did this witness say?

- "The Defendant had been in a fight the night before the stabbing and lost."
- "The Defendant holds a black belt, awarded for highest proficiency in karate."
- "The Defendant was never known to carry a gun or knife in his life."
- "As a result of the stabbing, Zemp will never be able to work again."
- "The Defendant is 6 feet tall and weighs 200 pounds while Zemp is 5 feet 8 inches tall and weighs 165 pounds."
- Among his gambling associates, Zemp was known as a "poor loser".
- "Zemp had been lightweight boxing champion of the first Marine Division."
- "The Defendant was somewhat nearsighted and wearing glasses."
- "Zemp is happily married with four children."
- "Don't Know"

Appendix G (continued)

What did this witness say?

- "The Defendant had been in a fight the night before the stabbing and lost."
- "The Defendant holds a black belt, awarded for highest proficiency in karate."
- "The Defendant was never known to carry a gun or knife in his life."
- "As a result of the stabbing, Zemp will never be able to work again."
- "The Defendant is 6 feet tall and weighs 200 pounds while Zemp is 5 feet 8 inches tall and weighs 165 pounds."
- Among his gambling associates, Zemp was known as a "poor loser".
- "Zemp had been lightweight boxing champion of the first Marine Division."
- "The Defendant was somewhat nearsighted and wearing glasses."
- "Zemp is happily married with four children."
- "Don't Know"

What did this witness say?

- "The Defendant had been in a fight the night before the stabbing and lost."
- "The Defendant holds a black belt, awarded for highest proficiency in karate."
- "The Defendant was never known to carry a gun or knife in his life."
- "As a result of the stabbing, Zemp will never be able to work again."
- "The Defendant is 6 feet tall and weighs 200 pounds while Zemp is 5 feet 8 inches tall and weighs 165 pounds."
- Among his gambling associates, Zemp was known as a "poor loser".
- "Zemp had been lightweight boxing champion of the first Marine Division."
- "The Defendant was somewhat nearsighted and wearing glasses."
- "Zemp is happily married with four children."
- "Don't Know"

What did this witness say?

- "The Defendant had been in a fight the night before the stabbing and lost."
- "The Defendant holds a black belt, awarded for highest proficiency in karate."
- "The Defendant was never known to carry a gun or knife in his life."
- "As a result of the stabbing, Zemp will never be able to work again."
- "The Defendant is 6 feet tall and weighs 200 pounds while Zemp is 5 feet 8 inches tall and weighs 165 pounds."
- Among his gambling associates, Zemp was known as a "poor loser".
- "Zemp had been lightweight boxing champion of the first Marine Division."
- "The Defendant was somewhat nearsighted and wearing glasses."
- "Zemp is happily married with four children."
- "Don't Know"

What did this witness say?

- "The Defendant had been in a fight the night before the stabbing and lost."
- "The Defendant holds a black belt, awarded for highest proficiency in karate."
- "The Defendant was never known to carry a gun or knife in his life."
- "As a result of the stabbing, Zemp will never be able to work again."
- "The Defendant is 6 feet tall and weighs 200 pounds while Zemp is 5 feet 8 inches tall and weighs 165 pounds."
- Among his gambling associates, Zemp was known as a "poor loser".
- "Zemp had been lightweight boxing champion of the first Marine Division."
- "The Defendant was somewhat nearsighted and wearing glasses."
- "Zemp is happily married with four children."
- "Don't Know"

Appendix G (continued)

What did this witness say?

- "The Defendant had been in a fight the night before the stabbing and lost."
- "The Defendant holds a black belt, awarded for highest proficiency in karate."
- "The Defendant was never known to carry a gun or knife in his life."
- "As a result of the stabbing, Zemp will never be able to work again."
- "The Defendant is 6 feet tall and weighs 200 pounds while Zemp is 5 feet 8 inches tall and weighs 165 pounds."
- Among his gambling associates, Zemp was known as a "poor loser".
- "Zemp had been lightweight boxing champion of the first Marine Division."
- "The Defendant was somewhat nearsighted and wearing glasses."
- "Zemp is happily married with four children."
- "Don't Know"

What did this witness say?

- "The Defendant had been in a fight the night before the stabbing and lost."
- "The Defendant holds a black belt, awarded for highest proficiency in karate."
- "The Defendant was never known to carry a gun or knife in his life."
- "As a result of the stabbing, Zemp will never be able to work again."
- "The Defendant is 6 feet tall and weighs 200 pounds while Zemp is 5 feet 8 inches tall and weighs 165 pounds."
- Among his gambling associates, Zemp was known as a "poor loser".
- "Zemp had been lightweight boxing champion of the first Marine Division."
- "The Defendant was somewhat nearsighted and wearing glasses."
- "Zemp is happily married with four children."
- "Don't Know"

Appendix H

Survey: Part 6 Reliability Rating

You will now be shown the faces of each witness and it is your job to determine how reliable they were.

How reliable was this witness?

Not at all reliable	Slightly reliable	Somewhat reliable	Neutral	Moderately	Very reliable	Extremely reliable
1	2	3	4	5	6	7

How reliable was this witness?

Not at all reliable	Slightly reliable	Somewhat reliable	Neutral	Moderately	Very reliable	Extremely reliable
1	2	3	4	5	6	7

How reliable was this witness?

Not at all reliable	Slightly reliable	Somewhat reliable	Neutral	Moderately	Very reliable	Extremely reliable
1	2	3	4	5	6	7

How reliable was this witness?

Not at all reliable	Slightly reliable	Somewhat reliable	Neutral	Moderately	Very reliable	Extremely reliable
1	2	3	4	5	6	7

How reliable was this witness?

Not at all reliable	Slightly reliable	Somewhat reliable	Neutral	Moderately	Very reliable	Extremely reliable
1	2	3	4	5	6	7

Appendix H (continued)

How reliable was this witness?

Not at all reliable	Slightly reliable	Somewhat reliable	Neutral	Moderately	Very reliable	Extremely reliable
1	2	3	4	5	6	7
○	○	○	○	○	○	○

How reliable was this witness?

Not at all reliable	Slightly reliable	Somewhat reliable	Neutral	Moderately	Very reliable	Extremely reliable
1	2	3	4	5	6	7
○	○	○	○	○	○	○

How reliable was this witness?

Not at all reliable	Slightly reliable	Somewhat reliable	Neutral	Moderately	Very reliable	Extremely reliable
1	2	3	4	5	6	7
○	○	○	○	○	○	○

How reliable was this witness?

Not at all reliable	Slightly reliable	Somewhat reliable	Neutral	Moderately	Very reliable	Extremely reliable
1	2	3	4	5	6	7
○	○	○	○	○	○	○

Appendix I

Survey: Part 7 Demographics

1. What is your age? _____

2. Sex?
   Male
   Female
   Other
   Prefer not to say

3. What is your ethnicity?
   White
   Black or African American
   Hispanic or Latino
   Asian
   Other

4. Education Level
   High school only
   1 year of college
   2 years of college
   3 years of college
   4 or more years of college
   Master's level degree

5. Are you fluent in English?
   Yes
   No