

THE IMPACT OF EVIDENCE PRESENTATION ON FALSE CONFESSIONS

A Thesis  
by  
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## **Abstract**

### **THE IMPACT OF EVIDENCE PRESENTATION ON FALSE CONFESSIONS**

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A confession is one of the most influential kinds of evidence offered at trial (Leo, 2009). The weight of a confession on trial outcomes warrants careful attention. Interrogation practices need to be carefully examined to ensure individuals are not being manipulated into falsely confessing. Previous research has demonstrated that when presented with evidence in stressful scenarios, an average individual can be pressured into falsely confessing (Kassin & Kiechel, 1996). While evidence has been used in several studies, the effect of the type of evidence presented has not. The current study explored the effects different types of evidence had on false confession rates. It was believed that the more concrete the evidence was (i.e., videotape), the more likely a person would falsely confess. Participants were accused of cheating by using the answer key that “accidentally” emerged on the computer screen during a recall test. Four conditions (three types of evidence and a control condition) were presented to participants by the researcher. The rate at which individuals falsely confessed under all of the conditions was recorded. A binary logistic regression revealed that none of the evidence conditions elicited significantly more false confessions than the control

condition; however, overall, 85% falsely confessed. The need to escape an ambiguous and stressful situation as described by Davis and Leo (2012) maybe used to explain the pattern of results.

*Keywords:* false confessions, interrogations, evidence

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## **Dedication**

I dedicate this thesis to my family who have always provided me with the encouragement and support to aim for the stars. This thesis is also dedicated to my partner and best friend, Sam, who endured all of the challenges and struggles of graduate school with me and still managed to keep me sane. I also dedicate this thesis to my beloved companion, Roxie, for always providing reassurance and motivation during the long hours of writing. Mom, Zack...we made it.

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## **Foreword**

This thesis is written in accordance with the style of the *Publication Manual of the American Psychological Association (6th Edition)* as required by the Department of Psychology at Appalachian State University.

The Impact of Evidence Presentation on False Confessions

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### The Impact of Evidence Presentation on False Confessions

*“Police-induced false confessions are a leading cause of wrongful convictions of the innocent”* (Leo, 2009, p. 332).

Confessions play an integral role in the legal system. In the United States, confessions are seen as one of the strongest predictors of guilt (Henkel, Coffman, & Dailey, 2008). A confession is a statement by which an individual acknowledges his or her guilt (Merriam-Webster, n.d.). For the purpose of this study, a false confession was considered a statement falsely acknowledging one’s guilt of an incident. After reviewing statistics about the criminal justice system, one researcher found that eighty-one percent of individuals who falsely confessed and pled not guilty during trial were ultimately convicted of their crime (Kassin, 2008, p. 252). While jurors generally understand that confessions can be false, this knowledge does not overcome the power of a specific confession in the courtroom. The National Registry of Exonerations reports that 13% of known exonerations since 1989 have involved a false confession (Gross & Shaffer, 2012). Furthermore, approximately 75% of all false confessions were found in homicide cases (Gross & Shaffer, 2012). Homicide cases are cases that involve long-term consequences for those convicted. Individuals convicted will serve up to a life sentence in addition to being labeled a felon for the remainder of their lives. The Innocence Project has reported similar findings, stating that 1 out of 4 individuals wrongfully convicted and exonerated by DNA evidence were found to have made a false confession or incriminating statement (Innocence Project, 2016).

The purpose of this thesis was to investigate the effects of interrogation tactics on confession rates. There are many forms of interrogation styles and techniques; however, for the purpose of this thesis the REID technique will be the focus. The REID technique is widely utilized by U.S. law enforcement agencies and has been supported by the U.S. judicial

system. In particular, the use of false evidence in the REID technique will be examined. Additional exploratory measures will be used to determine the roles that two individual difference measures—susceptibility to compliance and social desirability—may play in false confession rates.

### **Overview of the REID Technique**

The notion that an innocent person will not confess to something they did not do is strongly rooted in the legal system. This notion is echoed in current police interrogation techniques in the United States. While many forms of interrogation techniques can be used, the focus of this study was to examine one of the more popular versions, the REID (Buckley, 2000) technique. The REID technique was developed by a Chicago police officer named John E. Reid. The technique has been around since 1947 and five editions of the manual have been released (Buckley, 2000). The REID technique is used by hundreds of local and federal agencies (Buckley, 2000). A few of the most notable agencies include the Federal Bureau of Investigation and the Central Intelligence Agency. According to the REID Institute, over 20,000 individuals are trained annually on the REID technique (Buckley, 2000). Individuals may also receive similar training through federal law enforcement agencies, which would not be recorded by the REID Institute.

The REID technique emphasizes an individual's guilt and the duty of the officer to obtain a confession. Moreover, the REID technique training teaches law enforcement officers (LEOs) that if the individual is not guilty then their innocence will protect them through the stressful interrogation. Interrogations can be seen as an adversarial game in which the officer is pitted against the suspect. Leo (1996) argues that police interrogations are a confidence game. The confidence game utilizes subtle psychological techniques to get the suspect to

waive their rights and then confess (Leo, 1996). Leo (1996) claims that the technique is so effective that most individuals who confess do not even realize that they have been tricked.

The REID technique consists of nine steps officers should use in order to elicit a confession. The first step is called the “direct positive confrontation.” In this stage, the investigator clearly identifies the subject as the perpetrator of the crime and officers can comment on the presence of evidence, whether true or false. This step is the first time in which the LEO utilizes trickery and deception. By creating competing goals between the officer (get a confession) and the suspect (maintain innocence), a game-like situation is created. In many ways, competition can be used to justify the use of deception as long as the end goal of getting a confession is reached. While the direct confrontation is the first link in the chain for inducing stress, it is often over-looked legally. The stress created by the use of confrontation and deception is seen as an acceptable consequence of an interrogation. This study focused on the confrontation created by lying to a suspect about evidence and challenge the legal assumption that deception is harmless.

The remaining steps aim to capitalize on the stress and doubt created by the first step. The second step is called “theme development.” The interrogator will offer alternative motives (“themes”) for committing the crime. This step is designed to ask why the crime was committed, not to question that the subject committed the crime (Buckley, 2000). Once a theme is found that the subject reacts to, the officer continues with that line of questioning.

The third step is “handling denials.” The purpose of this step is to not allow the words “I didn’t do it” leave the subject’s mouth. LEOs can use phrases such as “let me finish” or “now is the time to listen” to cut denials short. The fourth step is “overcoming objections.” Objections are different from denials in the sense that denials are direct statements of

innocence while objections are statements that attempt to prove an accusation is false. Objections are commonly used to attack motive such as “I’ve got plenty of money- I don’t need any money.” In this step, the officer focuses on the negative consequences of a false objection. Step five is the procurement and retention of the suspect’s attention. In this step, the officer intensifies the theme developed in step two. The officer also moves close to the subject, entering personal space. Step six is handling the suspect’s passive mood. At this point, the subject should seem defeated, often crying. The officer sets the scene for the alternative question, which is posed in step seven.

The alternative question is a series of incriminating choices. One choice will be a desirable reason for the crime and the other choice will be a negative reason for the crime. Step eight is having the suspect relate the various details of the offense. This occurs after the subject accepts one of the alternatives posed in step seven. Step nine is converting an oral confession into a written confession. Through the REID technique, officers use this series of steps to increase an interviewee’s discomfort and stress level in order to “reach the truth” (Chapman, 2013, p. 162).

### **Legality of False Evidence Ploys**

As described above, law enforcement officers employ many tactics like the REID technique that utilize the ploy of false evidence. Leo (2008) describes three types of false evidence ploys: testimonial ploys, scientific ploys and demeanor ploys. A testimonial ploy is where the LEO claims to have video evidence or the testimony of an eyewitness. The scientific ploy alludes to false scientific evidence such as DNA and fingerprints. The demeanor ploy attacks the suspect’s behavior by stating that their behavior indicates guilt (Leo, 2008). The use of false evidence in the research setting has indicated that the presence

of false evidence increases the likelihood of confession (Kassin & Kiechel, 1996; Perillo & Kassin, 2010; Horselenberg, Merckelbach & Josephs, 2003); however, there is much debate as to whether the laboratory results can be generalized to the real-life environment of an interrogation. The fact that studies have revealed an increase in false confessions with false evidence raises the question of whether or not this technique should be allowed.

The judicial system has answered this question in a variety of court cases. For the most part, the courts are supportive of the use of false evidence by LEOs. Multiple court opinions have cited that false-evidence ploys do not compromise the voluntariness of a confession (*State v. Cobb*, 1977; *State v. Jackson*, 1983). During interrogations, officers are allowed to imply that they possess evidence against the interviewee (King & Snook, 2009). In *Frazier v. Cupp* (1969), the use of a false witness statement was used by police in order to gain a confession. On appeal, the Supreme Court stated that misrepresentation of evidence by itself is not likely to cause an innocent person to confess if everything else during the interrogation is done properly (*Frazier v. Cupp*, 1969). False evidence is widely accepted unless the evidence can be mistaken as real by outside entities such as the media or “props” are used (*Florida v. Cayward*, 1989). A prop is where a physical form of the evidence is used to add authenticity to the false evidence (Buckley, 2000). An example of a prop would be a LEO bringing a copy of a positive DNA test (which is false) into the interrogation and claiming that it was the suspect’s DNA that tested positive.

Proponents of the technique claim that an interrogation in itself is stressful and coercive by nature; limiting an interrogator’s ability to use trickery is a slippery slope that will undermine their ability to elicit true confessions (Buckley, 2000). This belief is customary amongst U.S. law enforcement agencies and is further reinforced by the judicial

system. Others argue that the individual is protected from blatant acts of coercion by the legal system but left relatively undefended to more subtle and often psychological acts of pressure. The current study attempts to examine the basic premise of widely accepted notions of the legal system: can a lie about evidence without physical proof produce a false confession? If so, are certain types of evidence more persuasive?

### **The Role of Psychological Coercion in False Confessions**

The very nature of being interrogated is a stressful situation. While the courts have outlawed extremely coercive techniques such as physical abuse, psychologists argue that the REID technique itself creates an environment of stress, which increases the likelihood of false confessions. By law, when an individual is not classified as vulnerable (juvenile, mentally ill, etc.) or forced by physical means or other coercive methods to confess, the confession can be used in court (Henkel, Coffman & Dailey, 2008). The concentration on individual vulnerabilities and physical police coercion leaves room for police officers to use less obvious forms of coercion such as stress-inducing tactics. Psychologists argue that many of these tactics, endorsed by the REID technique, create an unacceptable risk of false confessions (Kassin, 2012). In other words, psychologists argue that the REID technique can be unduly psychologically coercive, but courts have regularly concluded the opposite.

Many previous studies have been conducted to test the impact of certain aspects of individual vulnerability during an interrogation. Given the high emphasis on inducing stress with the REID technique, Kassin and Kiechel (1996) conducted a study to test the role of stress during a confession. The design of the study has been replicated and extended throughout much of the false confession research (Horselenberg et al., 2003; Perillo & Kassin, 2010). In the original study, participants were asked to perform a computer task

during which they were instructed not to hit the “ALT” key. A confederate was assigned the role of reading a series of letters for the participant to type. The confederate would later be used as a “witness”. The witness would confirm that they had observed the participant press the “ALT” key. The speed at which the letters were read was manipulated to simulate stress. After the session had begun, the computer program would crash. The experimenter accused participants of pressing the “ALT” key and attempted to illicit a confession from the participants (Kassin & Kiechel, 1996).

After the computer system failed, participants were asked to sign a statement, which was considered a “voluntary confession.” Kassin and Kiechel (1996) found that some participants voluntarily confessed in all conditions, even with slow typing and no witness. They also found that stress increased the confession rates from 35% in the slow paced condition (i.e., low stress) to 69% in the fast paced condition (i.e., high stress). Additionally, when the high stress environment was compounded with eyewitness testimony, 100% of participants confessed.

Originally, the “ALT” key study did not include consequences for confessing. The lack of consequence is not representative of what actually would occur if an individual confessed to a crime. A confession to a crime would involve personal consequences such as jail time, a criminal record and/or fines. Personal consequences intensify the stress felt by the individual. In order to combat the shortcomings of the original “ALT” key study, Horselenberg et al. (2003) redesigned the procedure. First, the “ALT” key was changed to the “Shift” key to increase plausibility of the mistake (Horselenberg et al., 2003). Additionally, participants were provided monetary compensation for participation. Participants were informed that they would lose 80 percent of their compensation if they

confessed. The threat of monetary losses provided negative consequences that came closer to modeling the actual consequences of a confession. Even with the different procedures, the studies yielded similar results with a majority of participants confessing (Horselenberg et al., 2003). Horselenberg et al. (2003) found overall slightly higher rates for all three types of confessions as outlined in Kassin and Kiechel (1996). The higher rates of confessions found by Horselenberg et al. (2003) suggest that the more plausible the transgression and possibly the greater consequences, the more susceptible the individual is to stress and false evidence.

Davis and Leo (2012) reviewed the impact of interrogation-induced stress on the likelihood of falsely confessing and argued that the long-term goal of maintaining one's innocence is compromised by the immediate need to escape the pressures and stress of an interrogation. This compromise was demonstrated in a study conducted by Madon, Yang, Smalarz, Guyll and Scherr (2013). After review of interrogation tapes, Madon et al. (2013) found that the length of the interrogation significantly increased the likelihood a participant would falsely confess to a behavior.

Taken together, these studies demonstrate that even small aspects of an interview increase the likelihood of an individual to confess, especially when that aspect increases the amount of stress felt during the interrogation. The studies also establish the simple fact that false confessions actually occur and not under extraordinarily coercive conditions.

### **Use of Evidence During Interrogations**

While researchers have devoted considerable resources to studying the role of stress in increasing confession rates, false evidence tactics other than the presence of a witness statement have been less studied. Perillo and Kassin (2010) used a bluff technique and witness testimony during a procedure similar to the original ALT-key procedure (Kassin &

Kiechel, 1996). During the bluff, the participants were told of possible evidence of their guilt but the evidence could not be confirmed until another researcher was located. The study found that a bluff increased the rate of false confessions in the same manner that witness testimony did. The false confession rate was more than double for both the bluff and witness conditions compared to the original ALT-key study.

Another study that offered an insight into the effects of evidence type is one with multiple forms of video evidence. Nash and Wade (2009) compared the effect of doctored video evidence (i.e., “physical evidence”) and the threat of video evidence (i.e., “implied evidence”). They found that physical evidence led to a higher internalized confession rate when compared to the threat of video evidence; however, overall confession rates were the same for both groups (Nash & Wade, 2009).

Aside from these two studies, no other researchers have tested the effects of different types of false evidence on false confession rates. In this study, I contributed to this literature by testing the impact of multiple forms of false evidence on confession rates. This study utilized three forms of physical evidence plus unsubstantiated evidence. Specifically, the four different threats of evidence were used: a video, a witness, a bluff and a control. The bluff consisted of a mere mention that there was evidence without any elaboration. The video condition consisted of a reference to video evidence. The witness condition consisted of a reference to a confederate who posed as another research participant. The control condition had no mention of evidence. Participants were just accused and asked to sign a confession.

In order to help overcome the limitations of previous methodologies, research from additional fields of study was reviewed. The deviant behavior research offered a different approach to testing false confessions. Ultimately, a procedure based on Paternoster,

McGloin, Nguyen, and Thomas (2013) cheating paradigm will be utilized. The cheating procedure used by Paternoster et al. (2013) utilized a deliberate act of cheating. The use of accidental incidents of cheating in the previous literature removes the intent seen in the commission of an actual crime. Paternoster et al. (2013) reported that none of the participants cheated during the control condition in which no monetary incentive to cheat was provided. No monetary incentive was provided in the current study; therefore, similar low rates of cheating are expected.

Paternoster et al. (2013) conducted a study on the impact of deviant peers. The paradigm consists of participants completing a recall test. Participants would enter a computer lab with several other participants and a confederate. Researchers then instructed them to memorize a series of words. When the researcher was explaining how to enter answers into the recall test, the researcher drew attention to four “junk” links found at the bottom of the page. The researcher then went to the participant’s computer and clicked on the links. The links contained the answers to the recall test. The researcher then asked that participants ignore the links and complete the test while he went to report the problem to other researchers. Once the researcher left the room, the confederate either completed the test silently or announced that they were going to use the links. The participant’s use of the junk links was then reviewed based on the presence of a deviant peer or absence of a deviant peer.

### **Individual Vulnerabilities**

As described earlier, the courts have recognized that certain individual characteristics might make a person more susceptible to coercion. These characteristics include youth and mental illness. On the other hand, courts have been less friendly towards arguments of subtler individual differences. Gudjonsson (2010) determined that psychological vulnerabilities may

place individuals at a disadvantage in their abilities to cope with the interview. Personality traits such as susceptibility and compliance were determined to comprise one of the four kinds of psychological vulnerabilities (Gudjonsson, 2006). Higher levels of compliance and susceptibility could lead an individual to be more at risk to subtle ploys of LEOs.

### **Compliance**

Compliance is a commonly used measure in forensic assessments of victims, witnesses and suspects (Gudjonsson & Young, 2010). Forensic assessments are used to determine how reliable a testimony or confession is. Compliance in the sense of this study is a measure of obedience to an authority figure. Obedience is when an individual conforms to the commands or instructions of an authority figure (Milgram, 1963). In the case of interrogations, an individual is conforming to the LEO when they decide to confess. Unlike Milgram's study, defiance is seen as the default state in an interrogation. The suspect initially resists the commands of the authority figure by maintaining their own version of the situation. Through various interrogation techniques, the suspect becomes more compliant with the interrogator's assertions. Compliance can be used to determine an individual's ability to actively resist the pressure to comply and obey. Milgram (1963) demonstrated that certain individuals have a higher ability to resist compliance. Burger (2009) replicated Milgram's study with some additional safety measures. Burger (2009) found similarly high levels of compliance within the population.

The Gudjonsson Compliance Scale was used to assess participants' level of compliance during the study (GCS; Gudjonsson, 1989). The GCS measures the tendency of individuals to go along with requests as a means to please others or avoid conflict and confrontations (Gudjonsson, 1989). The compliance scale measure was used to determine the

role of individual vulnerability in the decision to confess as compared to the role of situational pressure (i.e., the use of false evidence).

### **Social Desirability**

The relationship between social desirability and interrogations is shaky at best. Many suggest that social desirability should be correlated with psychological vulnerabilities such as compliance and suggestibility; however, the relationship has not proven to be as strong as suggested (Gudjonsson & Young, 2010). Social desirability refers to an individual presenting themselves in an overly positive way in order to give a better impression of themselves (Gudjonsson & Young, 2010).

Paulhus (2006) suggests that there are two types of social desirability: impression management and self-deception enhancement. Impression management is a more intentional process as compared to self-deception enhancement (Paulhus, 2006). Self-deception enhancement is related to overconfidence and narcissism. Gudjonsson and Sigurdsson (2004) found that neither impression management nor self-deception enhancement correlated with suggestibility or compliance. In a replication study, Gudjonsson and Young (2010) found similar results in that social desirability did not correlate with either suggestibility or compliance.

The current study attempted to explore the relationship or the lack of a relationship between compliance and social desirability. Additionally, social desirability was related to the presence of a confession. Previous studies have only compared the correlation between the measures of compliance and social desirability; however, the relationship between social desirability and the outcome of an interrogation has not been explored.

### **Current Study**

Many aspects of confessions have been examined; however, the fundamental question of whether the use of different kinds of deception elicit false confessions has been left largely untouched. The legal system has accepted the use of deception and its consequences as a necessary risk of an interrogation. The current study attempted to test whether or not the use of deception increased an individual's vulnerability to false confessions during an interrogation.

As described earlier, participants in this study engaged in a challenging recall task and were given an opportunity to cheat. They were then accused of cheating, with the researcher having presented either the threat of a witness, a video, a bluff, or no evidence of their cheating. Participants were threatened with an academic integrity violation in order to add authenticity to the incident. Whether participants falsely confessed to the act was the dependent variable.

I hypothesized that the video condition would be the most persuasive form of evidence and thus would result in the highest confession rate (see Figure 1). Second, I believed any of the evidence conditions would result in a higher confession rate when compared with the control condition. Third, it was thought that the witness condition would have a higher confession rates compared to the bluff condition. Fourth, I expected that participants who scored higher on the compliance scale would be more likely to confess. Fifth, the participants' self-reported stress levels and how convincing they found the evidence of their guilt were explored. I believed that participants would report the highest levels of stress and be more convinced of the evidence in the video condition. Lastly, social desirability was explored but no specific hypothesis was created.

## **Method**

### **Design**

The study was a between-subjects design. There were four conditions of false evidence: no evidence, bluff, witness and video. Participants were randomly assigned to one of the four conditions. Confession rates for each condition were calculated. In addition, social desirability, compliance and post-confession attitudes were measured. Demographics were also collected for exploratory purposes. Gender and age were the focus of the demographics.

### **Participants**

Participants were a convenience sample of undergraduate psychology students in a mid-sized university in the southeastern United States. A total sample of 101 participants was collected. Fifteen participants were removed due to procedural issues such as technical difficulties. Six participants were removed from the sample due to the fact that the participant actually cheated during the procedure, thus could not falsely confess. The final sample of 80 participants was used (76.3% female, 88.8 % Non-Hispanic White,  $M_{\text{age}} = 20$ ). The Institutional Review Board (IRB) approved this study on October 14, 2014, with an expiration date of October 11, 2016 (see Appendix A).

### **Manipulation**

The type of evidence presented to participants was manipulated. The type of evidence used during the study was a bluff, witness testimony and video recording. There was a control condition in which no evidence was presented to the participants. The witness testimony condition consisted of the experimenter stating that when the confederate turned in the test, she mentioned that she had seen the participant cheat. The video recording condition consisted of the experimenter explaining that a video camera recorded the session and after

review, it was clear that the participant cheated. In the bluff condition, the experimenter stated that there was evidence that the participant cheated but did not explicitly state what kind of evidence it was. The control condition was very similar to the bluff condition in the fact that neither explicitly mentioned a specific kind of evidence. The difference was that in the control, the experimenter just simply asked the participant to sign a statement that they cheated.

### **Personality Measures**

The Social Desirability Scale-17 (SDS-17) is a true-false questionnaire with 17 items (Stöber, 2001). The SDS-17 has shown a convergent validity of .52-.85 with other measures of social desirability. The SDS-17 has been applied to many different age groups ranging from 18 to 80 years old. The test-retest correlations were over .80 across intervals from two to six weeks. The current study achieved an alpha of .56.

The Gudjonsson Compliance Scale consists of 20 true-false statements. The statements are broken down into three factors. Factor 1 consists of 10 items that examine an individual's ability to manage pressure. Factor 2 consists of 5 items designed to determine the individual's desire to please and follow expectations. Factor 3 consists of 5 items and is a more abstract Factor. The alpha coefficient for the scale is .71. The test-retest reliability of the questionnaire was measured by administering it twice, 1-3 months apart, to 20 forensic patients. The Pearson correlation between the two sets of scores was .88 (Gudjonsson, 1989). The current study achieved an alpha of .74.

The post-confession questionnaire was designed to examine participants' perceptions of the interrogation. Participants were asked a series of questions on perceived stress levels during questioning and how convinced of the evidence they were. Participants were asked to

“rate the amount of stress felt during the study” using a 10-point scale (1- no stress at all, 10- the most stress you have felt; see Appendix B Question 6). Participants were also asked “how convincing they found the evidence of their guilt” using a 10-point scale (1- not convinced at all, 10- completely convinced; see Appendix B Question 8). Finally, participants were asked “were you guilty” using a dichotomous outcome (yes or no; see Appendix B Question 5). An open-ended question of what caused the most stress during the study was also included.

### **Procedure**

Students were invited to participate in a study about the use of mnemonic devices and personality types. Participants were not informed of the true intent of the study until after completion in order to avoid bias. A consent form (see Appendix C) was given prior to starting. Participants were informed that the study would consist of three stages. In the first stage, participants were presented with a list of ten non-real words (see Appendix D). The words were presented on a single page with only one word per line. Non-sense words were chosen to increase stress levels of the participants. They were told that they had five minutes to memorize all of the words. After participants had a chance to view the word list, they were instructed to complete the second stage of the study. The second stage was the “personality survey,” used as a filler task to enhance the credibility of the cover story. Participants were given 15 minutes to complete the survey. The “personality survey” included the Gudjonsson Compliance Scale (GCS, see Appendix E) as well as the Social Desirability Scale (see Appendix F). The scales were intermixed amongst the personality questions. The personality questions were an adaptation of the Forced-Choice Five Factor Markers test created by Brown and Maydeu-Olivares (2011). The test was modified to match the true/false format of the GCS.

The last stage was the recall portion of the cover story. Participants were given a sheet with blank spaces and told to recall to the best of their abilities the words they saw earlier. They were asked to pay close attention to the spelling of each word. At this point, the research assistant conducting the study announced that she was going to step out of the room in order to complete another assignment. The research assistant asked the confederate to bring the test to her after everyone had finished. Participants were told to remain in the room until the research assistant returned to receive course credit. Once the research assistant left the room, the confederate, who was seated at the same table as the participant, accidentally bumped the computer mouse. The answers to the recall test became visible on the computer screen that was located between the participant and the confederate. The confederate pretended not to notice the answer key. The confederate monitored the participant in order to see if the participant actually cheated on the recall test.

After the confederate collected the tests and left the room, the principal investigator, who had not been seen, entered the room. The principal investigator introduced herself and stated that she wanted to discuss the results of the recall test with the participant. The participant was informed that he/she cheated during the test and would not be receiving credit for the study. The participant was told that the incident would be reported to academic integrity if they did not sign a statement acknowledging that they had cheated during the session. The principal investigator used a script (see Appendix G) in order to add consistency across conditions and participants. The script was identical in all conditions other than the use of different types of evidence. Consistent with the REID technique, the principal investigator limited the amount of response the participant could give while being accused of cheating. While the response of participants could not be predicted or controlled for, the use

of a script helped create a similar and consistent manner in which the confessions were elicited from participants. The independent variable—evidence type—was embedded into this confrontation (see below). Whether each participant confessed was recorded as the primary dependent variable.

Participants were asked to sign a hand-written statement saying that they had cheated during the study. A participant was asked twice to sign the statement. Once the participant signed the statement or declined to sign the statement twice, the study was concluded. Participants actually received their course credit even when threatened with losing it. A full debriefing of the experiment's true purpose was revealed. An additional survey (see Appendix B) was given to the participant after the debriefing. This survey contained demographic questions as well as questions on stress and persuasiveness of the evidence presented during the interrogation.

Pilot tests were conducted on the procedure as well as the personality test containing the Gudjonsson Compliance Scale and the Social Desirability Scale (GCS; Gudjonsson, 1989; Stöber, 2001). Participants should not be able to tell the difference between the two tests and should assume that both scales are part of the same scale. The seamless blending of the personality test with GCS and Social Desirability Scale (Gudjonsson, 1989) was imperative. Twenty-one participants were recruited. Each of the four conditions contained four to five participants. After fixing a few mechanical errors, the procedure was determined to be effective and the true purpose was undetected.

## Results

### Confession Rate

Overall false confession rates were 85%, with 68 out of 80 participants falsely confessing. Participants in the control condition confessed 85% of the time. Participants in the bluff condition confessed 95% of the time. Participants in the witness condition confessed 70% of the time. Finally, participants in the video condition confessed 90% of the time (see Figure 2). Five (10.87%) participants reported being guilty on the post-confession questionnaire, although only 46 participants received the “were you guilty” question due to experimenter error.

### Evidence Conditions

I wanted to know if the type of false evidence presented to participants affected participants’ decision to confess. Hypothesis 1 was determined to be void after examining the confession rates for each evidence type. The bluff condition had the highest confession rate, which was contrary to hypothesis 1, which predicted the video condition would have the highest confession rate.

In order to test hypotheses 2, that any evidence condition would result in a higher confession rate when compared with the control condition, a binary logistic regression consisting of evidence type (bluff, video, witness, control) was done for confessions. The overall rate of prediction accuracy for confessions for the null model was 85.0%. The overall rate of prediction accuracy for confessions for the full model did not increase, and was also 85.0%. None of the evidence type was found to be significantly higher than the control condition, Wald  $X^2(3) = 4.67, p = .190$ . These results did not support the hypothesis 2.

The third hypothesis states that the witness condition would result in a higher confession rate than the bluff condition. The bluff condition had a higher confession rate than the witness which was not expected. A Chi-Square was used to determine if the relationship was significant, and it was not,  $X^2(1) = 3.44, p = .064$ .

### **Compliance and Social Desirability**

Two separate ANOVAs were used to examine the relationship between social desirability and confession rates and the relationship between compliance and confession rates. When examining compliance, results of the ANOVA revealed a non-significant effect for confession rate  $F(1, 78) = .17, p = .677$ , such that participants who did not confess ( $M = 10.42, SD = 3.70, 95\% CI [8.06, 12.77]$ ) were not different from those who did confess ( $M = 10.88, SD = 3.54, 95\% CI [10.03, 11.74]$ ) on the measure of compliance. The second ANOVA revealed a non-significant effect for confession rate,  $F(1, 77) = .00, p = .968$ , such that participants who did not confess ( $M = 9.82, SD = 2.14, 95\% CI [8.38, 11.25]$ ) were not different from those who did confess ( $M = 9.85, SD = 2.74, 95\% CI [9.19, 10.52]$ ) on the measure of social desirability. Overall, the data does not offer support for hypothesis 4, that those who confessed would report higher scores on compliance.

### **Relationship between Compliance and Social Desirability**

A correlation was used to explore the relationship between compliance and social desirability. The correlation was marginally significant, such that social desirability ( $M = 9.85, SD = 2.66, 95\% CI [9.25, 10.44]$ ) was negatively correlated with compliance ( $M = 10.81, SD = 3.54, 95\% CI [10.02, 11.60]$ ),  $r(79) = -.19, p = .089$ .

### Perceptions of Stress and Evidence

Two separate ANOVAs were used to analyze hypothesis 5, that participants who were in the video condition would report the highest levels of stress and belief in the evidence. When examining perceptions of stress, results of the ANOVA revealed a non-significant effect for evidence type,  $F(1, 78) = .62, p = .605$ , such that participants in the control ( $M = 4.95, SD = 1.88, 95\% CI [4.07, 5.83]$ ), the bluff ( $M = 5.37, SD = 2.71, 95\% CI [4.06, 6.68]$ ), the witness ( $M = 5.90, SD = 2.17, 95\% CI [4.88, 6.92]$ ), and the video ( $M = 5.25, SD = 2.20, 95\% CI [4.22, 6.28]$ ) conditions did not differ on their ratings of perceived stress. When examining belief in the evidence, results of the ANOVA revealed a non-significant effect for evidence type,  $F(1, 79) = .70, p = .558$ , such that participants in the control ( $M = 4.25, SD = 2.34, 95\% CI [3.16, 5.34]$ ), the bluff ( $M = 3.75, SD = 3.24, 95\% CI [2.23, 5.27]$ ), the witness ( $M = 4.20, SD = 2.86, 95\% CI [2.86, 5.34]$ ), and the video ( $M = 5.10, SD = 3.52, 95\% CI [3.45, 6.75]$ ) conditions did not differ on their ratings of belief in the evidence.

### Discussion

The current study aimed to examine the impact that evidence type (control, bluff, witness and video) had on an individual's decision to confess, specifically falsely confess. In addition to different types of evidence, the concepts of compliance and social desirability were explored. Measures of stress and how convinced participants were in the evidence were also examined. While the results of this study do not support any of my hypotheses, the data does support some trends seen in previous literature.

To start, the paradigm adapted from Paternoster et al. (2013) shows promise for being an effective procedure for examining false confessions. The confession rates found in this

study were similar to those found in previous false confession paradigms (Kassin & Kiechel, 1996; Horselenberg et al., 2003; Perillo & Kassin, 2010). In addition, the paradigm offers the opportunity for specific stress and cognitive manipulations outside of speed or pace of the study like in the “ALT” key paradigm.

While a limited sample size may have hindered the results of the data statistically, the data offers insight to a unique pattern. While the confession rates must be interpreted as statistically equivalent, it is worth noting the pattern of results to inform future research. The confession rates for each evidence manipulation did not turn out as expected. While all conditions elicited a high rate of confession, the bluff condition was the most effective in producing a confession. The video was hypothesized to produce the highest confession rate but in actuality only produced the second highest rate. The witness condition was found to produce the least number of confessions. The control condition yielded more confessions than the witness condition.

One explanation for this lack of finding could be participants were not aware of the evidence being presented during the interrogation. Participants could have ignored or not heard the evidence presented and made the decision based on other factors not measured in this study. While a true manipulation check was not used to ensure that participants understood the evidence condition presented to them, participants often demonstrated an understanding of the evidence when responding to the request for a confession. Many times, the participant would ask directly about the evidence condition, such as “what evidence?” for the bluff condition or “can I see the video?” for the video condition. The participants would often ask of the other participant in the witness conditions and ask for clarification during the control condition. Therefore, anecdotally, participants demonstrated a clear understanding of

the evidence presented to them during the interrogation. The pattern of results found in this study are not likely due to a misunderstanding but instead could be related to other factors. Previous literature offers some insight into participants' behavior.

At first glance, the pattern is unusual; however, it is logical. Davis and Leo (2012) discussed the need of an individual to escape the uncomfortable and stressful environment of an interrogation. The current study may demonstrate this concept at work. The conditions, bluff and control, that offered little or no explanation or reasoning produced slightly more false confessions. The ambiguity of the situation in those conditions could have heightened the participant's need to escape the interrogation environment. The video condition offered "evidence" that a bewildered and confused participant felt they could not possibly refute. The witness condition offered the most favor to participants. Person-to-person confrontations are familiar to participants. This familiarity could have provided more clarity and possibly an illusion of control to participants. Thus, giving them the courage to refuse the interrogator's requests. This finding is contrary to previous literature in which the presence of a witness was found to increase confession rates (Kassin & Kiechel, 1996). Additional research would be needed to explore this finding in more detail.

The social desirability scale offers a challenge of its own. The SDS-17 proved to be an unreliable scale during this study. The means and standard deviations were nearly identical to the original article; however, the overall scale resulted in a low Cronbach's alpha ( $\alpha = .54$ ). Upon further examination, little to no correlation was found between scale items. Additional research should be conducted using a more reliable measure to truly examine the role of social desirability in interrogations.

The compliance scale proved to be more reliable. The relationship between compliance and social desirability was marginally significant and worthwhile to examine. The correlation was negative such that the higher score on the compliance measure would result in a lower score on the social desirability measure. This could be in part due to the sample used for the study. The population could be demonstrating the mentality of a young population who places strong emphasis on independence and rebellion while still are demonstrating a strong desire to be accepted by their social peers. The social desirability scale was determined to be unreliable which could have influenced the results.

Overall, the results of this study demonstrate that there is not a specific mold for an individual that will falsely confess. The individuals do not demonstrate high levels of compliance or social desirability. The participants of the study are considered a normal population by the legal system and not in need of any additional protections from interrogation techniques; however, many of these participants falsely confessed under typical interrogation stresses.

### **Limitations**

The biggest limitation of this study would be the low external validity. The stressful and harsh nature of an interrogation cannot be replicated or simulated during a study. This fact decreases the study's ability to accurately depict real-life scenarios. The long-term legal consequences of confessing to a crime also do not correspond to the simulated nature of this experiment. Participants during this study will not have to endure the label and stigma attached to decisions made during an actual interrogation. The study also differs from an interrogation in terms of how the consequences are received. In an interrogation, an individual who falsely confesses is getting in trouble with a confession; however, in the

study, participants avoided getting in trouble by falsely confessing. This limitation is difficult to overcome using an experimental design but perhaps could be explored using a plea bargaining approach. For example, instead of offering participants a way to bypass the consequences of cheating, present participants with two versions of punishment in addition to the trial-like option of going before the Student Conduct Board. Participants would be forced to make a decision similar to the decision made by an individual who confesses to a crime. The confession has consequences instead of offering a means of escape from any consequences. Not only would this approach add realism to the experiment but would also contribute to the research of how the presentation of a lesser punishment versus a harsher punishment might impact one's decision to confess.

Another limitation is the lack of a question asking participants if they believe they cheated. Participants were only asked about their belief in the evidence or guilt and not about their belief in the offense. The evidence could not be the motivating factor causing participants to confess. The participants were not informed as to what constituted cheating during the interrogation. The participant was left to define cheating in their own way. A participant could believe that a glance to the newly revealed recall list is cheating. While another participant could believe that they only cheated if they were copying the answers from the computer screen. A question addressing whether participants believed they cheated would address some of the ambiguity surrounding this idea. It would also illuminate the difference between a purely false confession where the participant believed that they had not cheated and that they were guilty.

The current study can also illuminate pitfalls of current interrogation practices. These practices can lead investigators to unwillingly coerce an innocent individual into falsely

confessing. Knowledge of these biases allows for investigators and law enforcement training officials to better combat the biases prior to harming an individual. Additionally, experimenter bias might also influence the results. The interviewer had full knowledge of the hypothesis. This knowledge might subtly change how each condition is approached and thus influence the results; although, great effort was taken to ensure uniformity in each condition and across participants. It is believed that since each evidence condition had similar confession rates then experimenter bias was successfully controlled for.

### **Future Research**

Several directions can be taken for future research. The first area is that additional testing is needed to determine the validity of the paradigm. Alternative measures should be examined for social desirability and compliance. Measures that are not limited by format (true/false format) should be examined to see if those measures provide more reliable results. The true/false nature of the GCS and SDS-17 could limit the conclusion that can be drawn about individual scores. A more reliable scale for social desirability is recommended. Additionally, different interrogation techniques and different stages of the REID technique should be examined. The current study focuses on a specific aspect of interrogations; however, there are many other techniques at work such as maximization and minimization. An interesting addition would be the inclusion of a plea bargain aspect. Several forms of punishment could be used in comparison to a trial-like option. Overall, the study demonstrates how even a lie can result in a false confession from population considered to not be vulnerable to interrogation techniques. The study directly contradicts the notion that a person's innocence will protect them from harm.

**Conclusions**

The emphasis and reliance on confessions by both law enforcement and the judicial system makes the need for regulation of interrogation practices paramount. Previous literature has demonstrated that false confessions are not a rarity as the legal system might portray (Kassin & Kiechel, 1996; Perillo & Kassin, 2010; Horselenberg et al., 2003). Effectiveness is not an excuse for carelessness. Research on false confessions is needed to provide insight into how to better adapt legal strategy and develop effective and less coercive interrogation practices. The study also provides support for the fact that psychological techniques result in false confessions and need to be regulated and monitored. While individuals believe their innocence will protect them during an interrogation, this proves far from the truth.

### References

- Brown, A., & Maydeu-Olivares, A. (2011). Forced-choice five factor markers. Retrieved from PsychTESTS. doi: 10.1037/t05430-000
- Buckley, J. P. (2000). The REID technique of interviewing and interrogation. Retrieved from [www.reid.com](http://www.reid.com)
- Burger, J. M. (2009). Replicating Milgram: Would people still obey today? *American Psychologist*, 64, 1-11. doi: 10.1037/a0010932
- Chapman, F. E. (2013). Coerced internalized false confessions and police interrogations: The power of coercion. *Law & Psychology Review*, 37, 160-192.
- Confession. (n.d.). In Merriam-Webster Dictionary Online. Retrieved from <http://www.merriam-webster.com/dictionary/confession>
- Davis, D., & Leo, R. A. (2012). Interrogation-related regulatory decline: Ego depletion, failures of self-regulation, and the decision to confess. *Psychology, Public Policy, and Law*, 18, 673-704. doi: 10.1037/a0027367
- Florida v. Cayward 552 So.2d 971 (1989).
- Frazier v. Cupp, 394 U.S. 731 (1969).
- Gross, S. R., & Shaffer, M. (2012). Exonerations in the United States, 1989-2012. Retrieved from [http://www.law.umich.edu/special/exoneration/Documents/exonerations\\_us\\_1989\\_2012\\_full\\_report.pdf](http://www.law.umich.edu/special/exoneration/Documents/exonerations_us_1989_2012_full_report.pdf)
- Gudjonsson, G. H. (1989). Compliance in an interrogative situation: A new scale. *Personality and Individual Differences*, 10 (5). doi: 10.1037/t10466-000

Gudjonsson, G. H. (2006). Psychology brings justice: The science of forensic psychology.

*Criminal Behaviour and Mental Health*, 13 (3), 159-167.

Gudjonsson, G. H. (2010). Psychological vulnerabilities during police interviews. Why are

they important? *Legal and Criminological Psychology*, 15, 161–175. doi:

10.1348/135532510X500064

Gudjonsson, G. H., & Sigurdsson, J. F. (2004). The relationship of suggestibility and

compliance with self-deception and other-deception. *Psychology, Crime and Law*, 10,

447–453.

Gudjonsson, G. H., & Young, S. (2010). Personality and deception. Are suggestibility,

compliance and acquiescence related to socially desirability responding? *Personality and*

*Individual Differences*, 50, 192-195.

Henkel, L. A., Coffman, J., & Dailey, E. M. (2008). A survey of people's attitudes and

beliefs about false confessions. *Behavioral Sciences and the Law*, 26, 555-584. doi:

10.1002/bsl/826

Horselenberg, R., Merckelbach, H., & Josephs, S. (2003). Individual differences and false

confessions: A conceptual replication of Kassin and Kiechel (1996). *Psychology,*

*Crime, & Law*, 9, 1-8.

Innocence Project (2016). False confessions or admissions. Retrieved from

<http://www.innocenceproject.org/causes/false-confessions-admissions/>

Kassin, S. M., & Kiechel, K. L. (1996). The social psychology of false confessions:

Compliance, internalization, and confabulation. *Psychological Science*, 7, 125-128.

Kassin, S. M. (2008). False confessions. *Current Directions in Psychological Science*, 17,

249-253.

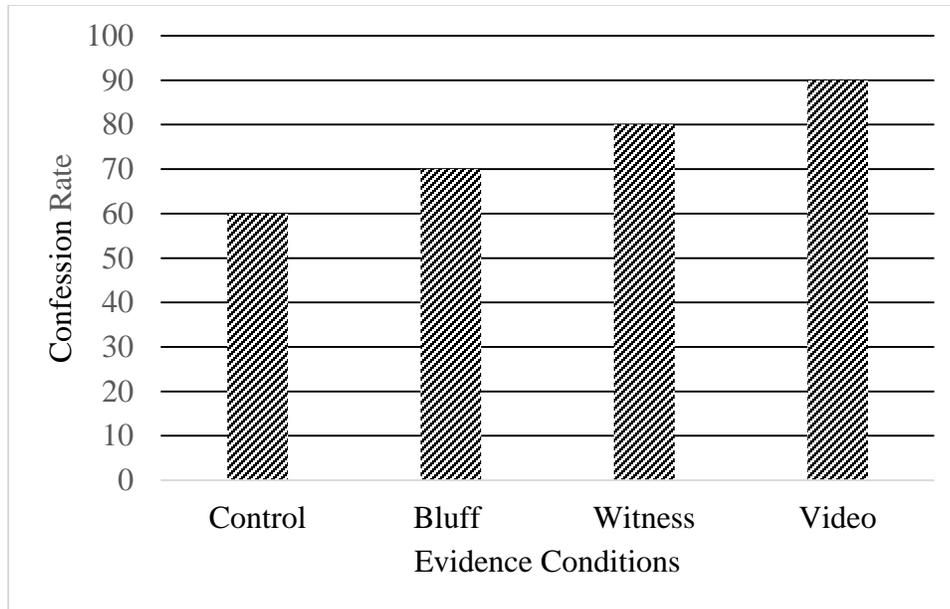
- Kassin, S. M. (2012). Why confessions trump innocence. *American Psychological Association, 67*, 431-445. doi: 10.1037/a0028212
- King, L., & Snook, B. (2009). Peering inside a Canadian interrogation room. *Criminal Justice and Behavior, 36*, 674-694. doi: 10.1177/003854809335142
- Leo, R. A. (1996). Inside the interrogation room. *The Journal of Criminal Law and Criminology, 86* (2), 266-303.
- Leo, R. A. (2008). *Police interrogation and American justice*. Cambridge, MA: Harvard University Press.
- Leo, R. A. (2009). False confessions: Causes, consequences, and implications. *Journal of the American Academy of Psychiatry and the Law, 37*, 332-343
- Madon, S., Yang, Y., Smalarz, L., Gyll, M., & Scherr, K. C. (2013). How factors present during the immediate interrogation situation produce short-sighted confession decisions. *Law and Human Behavior, 37*, 60-74. doi: 10.1037/lhb000011
- Milgram, S. (1963). Behavioral psychology of obedience. *Journal of Abnormal and Social Psychology, 67* (4), 371-378
- Nash, R. A., & Wade, K. A. (2009). Innocent but proven guilty: Eliciting internalized false confessions using doctored-video evidence. *Applied Cognitive Psychology, 23*, 624-637. doi: 10.1002/acp.1500
- Paternoster, R., McGloin, J. M., Nguyen, H., & Thomas, K. J. (2013). The causal impact of exposure to deviant peers: An experimental investigation. *Journal of Research in Crime and Delinquency, 50* (4), 476-503. doi: 10.1177/0022427812444274
- Paulhus, D. L. (2006). *Paulhus Deception Scales*. Newbury, Berkshire: Multi-Health Systems.

Perillo, J. T & Kassin, S. M. (2010). Inside interrogation: The lie, the bluff, and false confessions. *Law and Human Behavior*, 35(4), 327-337. doi:10.1007/s10979-010-9244-2

State v. Cobb 243 S.E.2d, 759 (1977).

State v. Jackson 304 S.E.2d, 134 (1983).

Stöber, J. (2001). The Social Desirability Scale-17 (SDS-17): Convergent validity discriminant validity, and relationship with age. *European Journal of Psychological Assessment*, 17, 222-232. doi: 10.1027//1015-5759.17.3.222



*Figure 1.* Hypothesized pattern of confession rates for evidence conditions. The video condition was believed to elicit the highest confession rate followed by the witness, bluff and control.

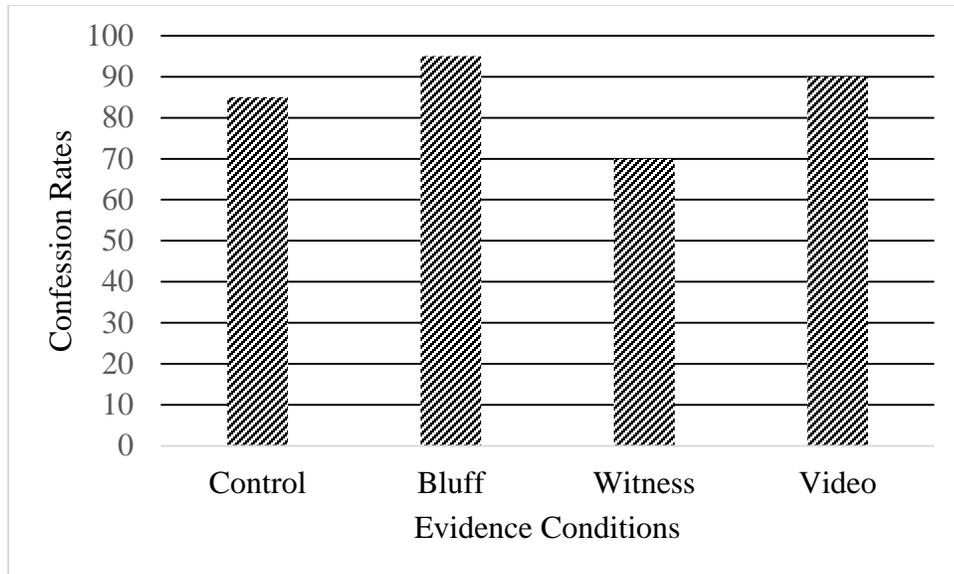


Figure 2. Confession rates for evidence conditions.

Appendix A  
Notice of IRB Approval

**From:** Dr. Lisa Curtin, Institutional Review Board Chairperson

**Date:** 3/11/2016

**RE:** Notice of IRB Approval by Expedited Review (under 45 CFR 46.110)

**STUDY #:** 15-0045

**STUDY TITLE:** Personality Types and Recall Devices

**Submission Type:** Modification

**Expedited Category:** (7) Research on Group Characteristics or Behavior, or Surveys, Interviews, etc., Minor Change to Previously Approved Research

**Approval Date:** 3/11/2016

**Expiration Date of Approval:** 10/11/2016

The Institutional Review Board (IRB) approved the modification for this study. The IRB found that the research procedures meet the expedited category cited above. IRB approval is limited to the activities described in the IRB approved materials, and extends to the performance of the described activities in the sites identified in the IRB application. In accordance with this approval, IRB findings and approval conditions for the conduct of this research are listed below.

**Submission Description:**

Modify the Debriefing Statement and the consent.

**Regulatory and other findings:**

The IRB determined that this study involves minimal risk to participants.

**Approval Conditions:**

Appalachian State University Policies: All individuals engaged in research with human participants are responsible for compliance with the University policies and procedures, and IRB determinations.

Principal Investigator Responsibilities: The PI should review the IRB's list of PI responsibilities. The Principal Investigator (PI), or Faculty Advisor if the PI is a student, is ultimately responsible for ensuring the protection of research participants; conducting sound ethical research that complies with federal regulations, University policy and procedures; and maintaining study records.

Modifications and Addendums: IRB approval must be sought and obtained for any proposed modification or addendum (e.g., a change in procedure, personnel, study location, study instruments) to the IRB approved protocol, and informed consent form before changes may be implemented, unless changes are necessary to eliminate apparent immediate hazards to

participants. Changes to eliminate apparent immediate hazards must be reported promptly to the IRB.

Approval Expiration and Continuing Review: The PI is responsible for requesting continuing review in a timely manner and receiving continuing approval for the duration of the research with human participants. Lapses in approval should be avoided to protect the welfare of enrolled participants. If approval expires, all research activities with human participants must cease.

Prompt Reporting of Events: Unanticipated Problems involving risks to participants or others; serious or continuing noncompliance with IRB requirements and determinations; and suspension or termination of IRB approval by external entity, must be promptly reported to the IRB.

Closing a study: When research procedures with human subjects are completed, please log into our system a [https://appstate.myresearchonline.org/irb/index\\_auth.cfm](https://appstate.myresearchonline.org/irb/index_auth.cfm) and complete the Request for Closure of IRB review form.

Appendix B

Post-Confession Questionnaire

**What is your age?**

**Sex:**

Male

Female

**How do you describe yourself? (please check the one option that best describes you)**

American Indian or Alaska Native

Hawaiian or Other Pacific Islander

Asian or Asian American

Black or African American

Hispanic or Latino

Non-Hispanic White

**What year are you?**

Freshman

Sophomore

Junior

Senior

Graduate

**Were you guilty?**

Yes

No

**Please rate the amount of stress you felt during this study (1-no stress at all, 10- most stress you have felt):**

**What caused your stress the most?**

**How convincing did you find the evidence of your guilt (1- not convinced at all, 10- completely convinced):**

## Appendix C

**Consent to Participate in Research  
Information to Consider about this Research****[Personality Types and Recall Devices]**

Principal Investigator: Alexandria Mackinnon

Department: Psychology

Contact Information: [mackinnonal@appstate.edu](mailto:mackinnonal@appstate.edu) or (828) 262-2272

**What is the purpose of this research?**

You are invited to participate in a research study about mnemonic device usage and personality types.

**Why am I being invited to take part in this research?**

You are invited to participate because you are at least 18 years old and registered in a psychology course.

**What will I be asked to do?**

If you agree to be part of the research study, you will be asked to memorize a list of words and complete a personality assessment. You will then be asked to recall the word list. The study should take approximately 30-45 minutes to complete. You may or may not be recorded during today's session.

**What are possible harms or discomforts that I might experience during the research?**

The risk of harm and discomfort from participating in this research study is consistent with what you would experience in everyday life. You may contact the Counseling & Psychological Services [828-262-3180] if you wish to discuss any discomfort you experience.

**What are possible benefits of this research?**

There may be no personal benefit from your participation but the information gained by doing this research may help others in the future.

**Will I be paid for taking part in the research?**

You will not be paid for your participation in this study. However, you can earn 2 ELCs credits for your participation. There are other research options and non-research options for obtaining extra credit or ELC's. One non-research option to receive 1 ELC is to read an article and write a 1-2 page paper summarizing the article and your reaction to the article. More information about this option can be

found at: [psych.appstate.edu/research](http://psych.appstate.edu/research). You may also wish to consult your professor to see if other non-research options are available.

**How will you keep my private information confidential?**

This study is anonymous. That means that no one, not even members of the research team, will know that the information you gave came from you. We will keep your signed consent form in a locked room.

**Whom can I contact if I have a question?**

If you have questions about the research, you may contact the PI listed above, or the faculty adviser, Dr. Twila Wingrove, at [wingroveta@appstate.edu](mailto:wingroveta@appstate.edu).

If you have questions about your rights as someone taking part in research, contact the Appalachian Institutional Review Board Administrator at 828-262-2692 (days), through email at [irb@appstate.edu](mailto:irb@appstate.edu) or at Appalachian State University, Office of Research Protections, IRB Administrator, Boone, NC 28608.

**Do I have to participate?**

Your participation in this research is completely voluntary. If you choose not to volunteer, there is no penalty or consequence. If you decide to take part in the study you can still decide at any time that you no longer want to participate. You will not lose any benefits or rights you would normally have if you do not participate in the study.

This research project has been approved on October 13, 2014 by the Institutional Review Board (IRB) at Appalachian State University. This approval will expire on October 12, 2015 unless the IRB renews the approval of this research.

**I have decided I want to take part in this research. What should I do now?**

If you have read this form, had the opportunity to ask questions about the research and received satisfactory answers, and want to participate, then sign the consent form and keep a copy for your records.

---

Participant's Name (PRINT)

Date

Signature

Appendix D  
RECALL WORD LIST

Please memorize to the best of your abilities the following word list. Spelling is important.

1. leptav
2. lumal
3. mib
4. natpem
5. peyrim
6. rispaw
7. stiwini
8. tubiv
9. vopec
10. yapib

## Appendix E

## GCS

## Items

1. I give in easily to people when I am pressured.
2. I find it very difficult to tell people when I disagree with them.
3. People in authority make me feel uncomfortable and uneasy.
4. I tend to give in to people who insist that they are right.
5. I tend to become easily alarmed and frightened when I am in the company of people in authority.
6. I try very hard not to offend people in authority.
7. I would describe myself as a very obedient person.
8. I tend to go along with what people tell me even when I know that they are wrong.
9. I believe in avoiding rather than facing demanding and frightening situations.
10. I try to please others.
11. Disagreeing with people often takes more time than it is worth.
12. I generally believe in doing as I am told.
13. When I am uncertain about things I tend to accept what people tell me.
14. I generally try to avoid confrontation with people.
15. As a child I always did what my parents told me.
16. I try hard to do what is expected of me.
17. I am not too concerned about what people think of me.
18. I strongly resist being pressured to do things I don't want to do.
19. I would never go along with what people tell me in order to please them.

20. When I was a child I sometimes took the blame for things I had not done.

## Appendix F

## SDS-17

## Items

1. I sometimes litter.
2. I always admit my mistakes openly and face the potential negative consequences.
3. In traffic I am always polite and considerate of others.
4. I have tried illegal drugs (for example, marijuana, cocaine, etc.).
5. I always accept others' opinions, even when they don't agree with my own.
6. I take out my bad moods on others now and then.
7. There has been an occasion when I took advantage of someone else.
8. In conversations I always listen attentively and let others finish their sentences.
9. I never hesitate to help someone in case of emergency.
10. When I have made a promise, I keep it – no ifs, ands or buts.
11. I occasionally speak badly of others behind their back.
12. I would never live off other people.
13. I always stay friendly and courteous with other people, even when I am stressed out.
14. During arguments I always stay objective and matter-of-fact.
15. There has been at least one occasion when I failed to return an item that I borrowed.
16. I always eat a healthy diet.
17. Sometimes I only help because I expect something in return.

## Appendix G

## Script for Evidence Conditions

**Control Condition:**

Hello. My Name is -----, and I am the principle investigator for this study. I just wanted to briefly discuss the study with you. Is there anything you wish to share before we start?

I ask you this because my assistant has advised me that there was some student misconduct for this session. I have reviewed your recall test and I agree that something is not right.

We're not going to be able to grant you credit for this study due to the fact that you cheated on the recall test. If you sign a statement that you cheated during the study no future action will be taken. Will you sign the statement?

**Bluff Condition:**

Hello. My Name is -----, and I am the principle investigator for this study. I just wanted to briefly discuss the study with you. Is there anything you wish to share before we start?

I ask you this because my assistant has advised me that there was some student misconduct for this session. I have reviewed your recall test and there is evidence that you have cheated.

We're not going to be able to grant you credit for this study due to the fact that you cheated on the recall test. If you sign a statement that you cheated during the study no future action will be taken. Will you sign the statement?

**Witness Condition:**

Hello. My Name is -----, and I am the principle investigator for this study. I just wanted to briefly discuss the study with you. Is there anything you wish to share before we start?

I ask you this because my assistant has advised me that there was some student misconduct for this session. I have reviewed your recall test and the other participant has informed me

that you cheated. We're not going to be able to grant you credit for this study due to the fact that you cheated on the recall test. If you sign a statement that you cheated during the study no future action will be taken. Will you sign the statement?

**Video Condition:**

Hello. My Name is -----, and I am the principle investigator for this study. I just wanted to briefly discuss the study with you. Is there anything you wish to share before we start?

I ask you this because my assistant has advised me that there was some student misconduct for this session. I have reviewed your recall test and the video recording of this session shows that you cheated. We're not going to be able to grant you credit for this study due to the fact that you cheated on the recall test. If you sign a statement that you cheated during the study no future action will be taken. Will you sign the statement?

### **Vita**

Alexandria Louise Brown Mackinnon was born October 8, 1990, in Charlotte, NC, to Joyce Brown and William Mackinnon. In June 2009, she graduated from Myers Park High School in Charlotte, NC. The following fall, she attended Appalachian State University. In May 2013, she graduated with a Bachelor of Science in Psychology and a Bachelor of Science Criminal Justice. After graduation, Alexandria decided to further her education and began working on a dual Master's program. She earned a Master of Arts in General Experimental Psychology and a Master of Science in Criminal Justice in May 2016. Alexandria is currently looking forward to entering the law enforcement career field.